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Cardiac Surgery

1

Preoperative Angiotensin-Converting Enzyme Inhibitors Protect Myocardium from Ischemia during Coronary Artery Bypass Graft Surgery

S. Refice, U. Benedetto, E. Angeloni, A. Roscitano, C. Simon, L. Iannone, C. Miele, C. Comito, R. Sinatra

Background: Coronary artery bypass graft (CABG) surgery may result in perioperative myocardium injury during cardioplegic arrest. Angiotensin-converting enzyme (ACE) inhibitors protect myocardium from ischemia in several clinical conditions but no previous study has attempted to evaluate the impact of preoperative ACE inhibitor therapy on myocardium protection in patients undergoing CABG surgery.

Methods: A propensity score-based analysis of 481 patients undergoing isolated on pump CABG surgery. 245 patients received preoperative ACE inhibitors and 236 were not treated with ACE inhibitors. Peri-operative myocardial injury was assessed by ischemia marker cardiac troponin I (cTnI).

Results: Preoperative cTnI concentration was similar for patients receiving ACE inhibitors and patients who did not (0.1 ng/mL [0.06–0.19] versus 0.1 ng/mL [0.06–0.19]; *P*=0.3). At ICU admission, cTnI concentration was lower in patients receiving preoperative ACE inhibitors (0.8 ng/mL [0.44–0.1.35] versus 0.96 ng/mL [0.50–1.89]; *P*=0.03) and this difference was more evident at the 1st (1.6 ng/mL [1.05–3.4] versus 2.4 ng/mL [1.13–6.10]; *P*=0.0006) and 2nd postoperative day (0.8 ng/mL [0.5–1.8] versus 1.4 ng/mL [0.64–3.98]; *P*=0.0015). After adjusting for propensity score and covariates, preoperative ACE inhibitors were found to decrease postoperative cTnI peak concentration (β=–0.12; *P*=0.004). Other independent predictors of postoperative cTnI peak concentration were female gender (β=0.15; *P*=0.009), emergency surgery (β=0.20; *P*=0.003), number of distal anastomoses (β=0.08; *P*=0.03) and aortic cross clamp time (β=0.002; *P*=0.03).

Conclusions: ACE inhibitors prior to surgery confer added myocardial protection during surgical revascularization. Prospective, randomized clinical trials will be necessary to better define the role of ACE inhibitors in improving outcomes when they are prescribed prior to CABG surgery.

2

Tissue Doppler Imaging is the Best Non-Invasive Tool to Evaluate Left Ventricular Systolic Function in Prediction of Operative Risk in Patients Undergoing Cardiac Surgery

E. Angeloni, U. Benedetto, D. Santini, S. Refice, G. Sclafani, F. Capuano, B. Fiorani, E. Tonelli, M.G. Ciavarella, R. Sinatra

Objective: Left ventricular (LV) systolic dysfunction is one of the most important risk factor to predict operative risk in cardiac surgery. LV ejection fraction (LVEF) is the most popular echo index to assess LV dysfunction in patients undergoing cardiac surgery. However, several echo indexes have been recently introduced to evaluate more accurately LV systolic function such mitral annulus systolic velocity detected by tissue Doppler imaging (Sm), myocardial performance index (MPI) and wall motion score index (WMSI). We aimed to investigate which of the above mentioned index better predict operative mortality following cardiac surgery.

Methods: In 211 consecutive patients undergoing cardiac surgery pre-opertaive LV systolic function was evaluated by echo LVEF, Sm, MPI and WMSI. Comparison of area under the ROC curves (AUC) was performed to assess which parameter was the best predictor of operative mortality (<30 days).

Results: Operative mortality was 9/211 (4.2%). Patients who died following surgery had a lower LV systolic performance detected by LVEF (44+/–19% vs 54 +/–12%; p<0.05); Sm (0.13+/–0.02 vs 0.09+/–0.01; p<0.05); MPI (0.57+/–0.–01 vs 0.47+/–0.01; p<0.05) and WMSI (1.28+/–0.01 vs 1.20+/–0.01; p=0.4). ROC curves coparison show that Sm (AUC 0.77; p<0.001) was the best predictor of operative mortality compared to LVEF (AUC=0.63), MPI (AUC=0.67) and WMSI (AUC=0.53).

Conclusion: Tissue Doppler imaging provides the most reliable index of LV systolic dysfunction to predict operative mortality in patients undergoing cardiac surgery and it should be used in cardiac surgery risk assessment instead of the most popular LV ejection fraction.

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Quadricuspid Aortic Valve Associated with Hypoplastic Aortic Annulus

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Quadricuspid aortic valve is a rare anomaly leading to valve replacement usually because of aortic valve insufficiency and rarely because of pure stenosis. It is currently diagnosed with increasing frequency because of the routine use of echocardiography in clinical practice. In a recent review of the literature, Turatel identified a total of 186 such cases. In this setting, incompetence is the leading cause of failure inasmuch as such valves are more prone to endocarditis and to the development of progressive cusp fibrosis and calcification at an earlier stage because of unequal distribution of mechanical stresses.

We describe the previously unreported association of quadricuspid aortic valve (it may be identified as type C according to the Hurwitz–Roberts classification) and hypoplastic aortic annulus, emphasizing the need for a more complex surgical procedure. Our case illustrates an unusual combination, indicating that occasionally a quadricuspid aortic valve may be part of a more complex pathologic condition of the left ventricular outflow tract.

Identification of such patients is therefore crucial to provide an adequate follow-up, which must include periodic echocardiographic assessments and prophylaxis against endocarditis. It must, however, be underlined that transthoracic echocardiography may at times fail to detect such anomaly.

4

Discrete Subaortic Stenosis Associated with Calcific Aortic Stenosis in the Elderly

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Discrete subaortic stenosis is one of the most frequent causes of left ventricular outflow tract obstruction. Early relief of subaortic stenosis is advocated in order to prevent potential future complications such as recurrence and development or progression of aortic incompetence.

We describe the unusual association of this lesion with calcific aortic stenosis observed in an elderly patient. In fact, while the calcific aortic stenosis is tipically observed with increasing frequency in the ageing population, the subaortic stenosis is usually diagnosed and treated in childhood, being often associated with other intracardiac anomalies. Whether hypertrophy of the ventricular septum might have favoured the development of the subaortic membrane in our patient, due to mechanical stimulation of the septum by abnormal left ventricular outflow tract blood flow secondary to aortic stenosis, remains an attractive hypothesis and a matter of speculation.

The rarity of this combination compared to the frequency of cases of pure aortic stenosis lead us to believe that coexistence of calcific aortic stenosis and dicrete subaortic stenosis, possibly present but undetected since childhood, is more likely a merely occasional finding.

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VAC System as Treatment of Sternal Infections after Cardiac Surgery: Our Experience in 126 Cases

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Objective: Postoperative sternal infection occurs in 0.6 to 16% of patients underwent to cardiac surgical procedures by median sternotomy ; To treat it we can use traditional methods or a new method called VAC.

Methods: From January 2001 to June 2007, 126 patients underwent to cardiac surgery operations in median sternotomy out of 4000 (3,15 %) presented sternal infections. The median age was 68, 5 years +/– 15; 59% male an 41% female; 24% with body mass index >30; hyperglicemia was in 27%, pulmonary cronic disease in 18 %; hospitalization time before surgery was 4, 2 days +/–2; 44% underwent myocardial revascularizations, 25% valve operations; 10 % vascular procedures and 21 % combinated procedures. 84% had fever (over 38,5°C longer than 48 hours continuosly not responding to the antipyretic therapy), associated with exudation of the sternal wound, sternal pain and wound dehiscence, 64% had white blood cells over 15.000/mL, 80% VES over 30 and 84% had PCR over 20). 86,4% had Vancocina 14 mg/kg 66% Sulfametazolo/trimetoprim 800 mg every twelve hours. 23% Rifampicin 9 mg/kg every 24 hours 15% Meropenem 7 mg /kg every six hours, 5% Ampicillina 1gr x 6/every 24 hours, 5% Linezolid 23% Levofloxacina 5 mg/kg every 24 hours.

Results: VAC System was removed after a mean of 14, 3 days, and 100% of patients had definitive surgical closure ; Primary sternal rewiring 84% and primary flap reconstruction 26%. In hospital staying after surgical closure was 4,3 days. None death was VAC related and 30-day survival was 98,6%.

Conclusion: VAC System is a safe and fast technique which allows fast development of a more suitable local tissue to have a succesful reconstruction procedure; it is well complied by the patients, even because they are not forced to stay in bed and in particular situation the they can also keep on therapy on day hospital. We recommended an early use of it to avoid mediatinitis complications and to have fast hospital dischargecomplications and to have fast hospital discharge. Aggressive diagnostic and therapeutic approach if suspicion of evolving sternal wound infection.

6

Composite Aortic Root Replacement with a New Biological Valved-Conduit: The Bio-Valsalva Graft

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Introduction: A new bio-prosthetic valved conduit (Bio-ValsalvaTM) has been recently introduced into surgical practice in order to offer a valid option in elderly patients undergoing composite aortic root replacement. Early results are discussed.

Materials and Methods: The new composite conduit is made up of a stentless porcine valve (Elan Artech) pre-sewn inside a triple layer Valsalva prosthesis. The bio-valved conduit is entirely preserved in a glutaraldehyde solution. Fifteen patients (3 females and 12 males, mean age 68.5 ± 4.8 years) with pathologic dilatations of aortic root, ascending aorta and concomitant disease of the aortic valve were treated with the Bio-Valsalva prosthesis. Type A dissection was present in 1 case while a bicuspid aortic valve was detected in 4 patients.

Results: Composite root replacement was extended to the emiarch in two cases while a complete arch replacement was performed as associated procedure in 2 patients. One patient died (6.7%) intra-operatively for irreversible arrhythmia. Re-thoracotomy for bleeding was performed in one case. In the same patient, multiple complications occurred as acute renal failure, prolonged mechanical ventilation followed by late complete recovery. Median in-hospital stay was 11.5 days (range 7–83 days). Median Follow-Up is 6 months. Neither re-operations nor structural deteriorations have been observed during this early phase of observation.

Discussion: The new conduit is readily available in different sizes, allows short cross-clamping time, reduces blood loss and avoids life-long anticoagulation therapies. More patients and longer follow-up are necessary to confirm the efficacy of this technique.

Transplantation

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Different Modalities of Arterial Reconstruction in Hepatic Retransplantation Using Right Partial Graft

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Hepatic retransplantation is a major challenge for many reasons: inferior results when compared to primary transplantation, ethical questions related to the use of a limited resource, major economic costs and more demanding surgical techniques.

Arterial revascularization of a graft can be challenging, especially if hepatic artery thrombosis is present. The chronic shortage of cadaveric livers has led surgeons to propose alternative approaches, namely, split and living-related transplantation, which are now routinely performed, but almost exclusively for primary liver transplantation.

According to UNOS data, of the hepatic retransplantations performed between 1996 and 2007, only 8.7% were done using right or extended right grafts from deceased donors, and 14.3% using right grafts from live donors.Here we report our experience with 5 hepatic retransplantations in which right partial grafts resulting from conventional in situ splits, and one right lobe resulting from an adult-to-adult living-related transplant, were successfully used realizing different modalities of graft arterialization. All the patients are currently alive without any complications after transplantation whit a mean follow-up of 18, 3 months (3, 5–32, 38).

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Kidney Transplant in Cosenza: A 10-Years Experience

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Background: Kidney transplant represents for patients with End Stage Renal Disease (ESRD) in hemodialytic treatment, the first choice and more physiological therapy to improve their quality of life. From 1996, February to 2008, March, at "Annunziata" hospital in Cosenza we performed 103 kidney transplant.

Materials and Methods: All the transplants were performed from cadaveric donors with a mean cold ischemia time of 13 hours. The patients receiving a kidney transplant were 63 males and 40 females, with mean age of 44,6±9.8 yrs (range 16–72 yrs). The mean duration of operation was 3 hours with heterotopic placement of the kidney in the lower controlateral abdomen quadrant, in the retroperitoneum. The vascular arterial and venous anastomosis were respectively with common iliac artery and vein, with mean warm ischemia time of 25 minutes and ureteral-bladder anastomosis performed with Bracci's catheter in 72 transplants and double-J stent in the remaining 29. Mean time of permanence in waiting list was 122±16 months. We observed acute rejection in 22%, chronic rejection in 15% and delayed graft function in 13% of patients. Surgical perioperative complications (haematoma and lymphocele) were observed in 13%, while urinary leakage was described in the 5% of patients. The deceased patients were 3 in total.

Conclusions: the first balance of our experience in the transplant field can be considered highly positive in survival of both kidney and transplanted patient. The quality of life of ESRD patients, our main target, with the improvement of surgical methods and pharmacologic tools is markedly improved in the years. These results encourage us to further look up the medical and surgical approach to ESRD patients.

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Urological Complications after Kidney Transplantation: Experience of Over 1000 Transplants

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Introduction: In our study we retrospectively assess the incidence and risk factors for early (within 30 days) and late stenoses and fistulas after kidney transplantation (KTx).

Methods: In years 1990–2007, 1142 patients underwent KTx in our center. In our analysis we considered clinical parameters and medical history of both recipient and donor, as well as surgical variables in univariate and multivariate analysis.

Results: 100 (8.7%) patients had 107 urological complications: 85 (79.4%) early (56 fistulas, 29 stenoses) and 22 (20.5%) late (7 fistulas and 15 stenoses). Multivariate analysis for all complications revealed significant association with recipient male gender while first kidney transplant was protective. Recipient and donor male gender was significantly associated with early fistulas. First kidney transplantation had a protective effect on early stenoses (p=0.01). Late fistulas were associated with anastomosis stenting (p=0.03) in a univariate analysis. Multivariate analysis for late stenoses did not show any significant association with the considered variables; late stenoses had a significantly higher recipient and donor age and lower donor creatinine clearance.

Discussion: In our analysis the only factors associated with urinary complications incidence are recipient and donor age, male gender, and re-transplants.

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Comparison of Biopsy and Clinical Score Systems to Predict Outcome of Extended Criteria Kidney Donors

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Introduction: Organ from marginal donors, defined according to United Network for Organ Sharing, can be rejected or allocated for single or double kidney transplantation (KTx) based on a biopsy score proposed by Karpinski. Nyberg et al proposed a different scoring system based entirely on clinical features of the donor. The aim of this study is to compare those scores in predicting KTx outcome using marginal organs.

Methods: We retrospectively analysed the clinical records of KTx of the last 4 years in our center. A correlation analysis for the two scores was performed using as end points early kidney function (EKF) and serum creatinine (SC) at 1 and 6 months.

Results: In years 2004–2007, 271 KTx were performed, 151 from ideal and 120 from marginal donors (102 single and 18 double KTx). 39 organs from marginal donors were discarded due to high biopsy score. Nyberg's score showed a strong correlation ($p<0.0001$) to the outcome; scores over 30 are associated with a lower rate of good EKF and a higher SC. Different biopsy score did not correlate to EKF or SC at 6 months.

Discussion: The introduction of biopsy score increased the number of organs suitable for transplant with acceptable results. Nevertheless our study demonstrates that Nyberg's clinical score can better foresee KTx outcome. This data suggests that biopsy score should be interpreted in a less mandatory manner.

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Pharmacological Induction of Heme-Oxygenase-1 Reduces Oxidative Stress and Cardiovascular Risk Factors in a Rat Model of Renal Ischemia/Reperfusion Injury

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Renal ischemia (I/R) results in cellular injury triggering a complex series of biochemical events including inducible nitric oxide synthase (iNOS) expression. Asymmetric dimethylarginine (ADMA) is an endogenous inhibitor of NOS and its increase in transplanted patients is associated with an increased cardiovascular risk. ADMA degradation occurs by the enzyme dimethylarginine dimethylaminohydrolase (DDAH). In the past few years, a role of interest in renal protection has been postulated for heme oxygenase-1 (HO-1). This study was aimed at elucidating the protective effects of SnCl2 (10 mg/Kg b.w.), a potent inducer of renal HO-1.Rats were subjected to 45 min of renal ischemia followed by different times of reperfusion (30 min, 1h and 3h), kidney was

removed and plasma was obtained for DDAH isoforms and iNOS expression, DDAH and NOS activity and ADMA modifications. Our results showed a time dependent increase of iNOS expression which was also confirmed by both plasmatic and renal increased formation of NO2-/NO3-. Renal DDAH-1 isoform expression showed a decrease following reperfusion whereas DDAH-2 showed an increase after 30 min returning at basal levels after 3 h. Interestingly, total DDAH activity was reduced during all times of reperfusion. We also observed an increase of both renal and plasmatic concentration of ADMA. Interestingly, SnCl2 treatment prevented I/R injury, iNOS expression and ADMA formation by restoring DDAH activity in the kidney.In conclusion our data suggest that HO-1, a part for attenuating renal injury, prevents the release of well established cardiovascular risk mediators following renal reperfusion.

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Liver Transplantation for Adolescent at Ismett

Fabrizio di Francesco, Davide Cintorino, Marco Spada, Silvia Riva, Marco Sciveres, Catalano Pieralba, Giuseppe Maggiore, Domenico Biondo, Bruno Gridelli

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Adequate size matching for liver transplantation (LTx) in adolescent using standard criteria for graft to recipient matching can be difficult. Whole livers (WL) or extended right grafts (ERG) are often oversized while left lateral segments (LLS) do not satisfy minimal criteria of liver mass requirement.

From July 2003 to April 2008, 83 pediatric liver transplants were performed in 71 patients: 16 from WL, 13 from ERG, 54 from LLS. Fifteen of these were adolescent with median age of 10 years (range 9–15) and median body weight of 25 kg (range 24–51 kg). Mean waiting time was of 1.32 months (range 0–6). Six of them underwent primary LTx with WL from young cadaveric donors (median age 12.1 years, median body weight 40 kg). Three recipients received a LLS harvested from a 13 and 49 yrs cadaveric donor with a GRWR of 1.0 % and 0.6% respectively. In 7 cases we used ERG harvested from young donors (mean age 11 years, range 5–20) obtaining grafts of mean weight 683 gr (range 380–880). After a median follow up of 22 months patient and graft survival for adolescent patients were 92.86% and 76.47%, below 9 years were 82.91% and 71.24% respectively. Between adolescent patients 3 underwent retransplantation: one for hepatic artery thrombosis, one for hepatic artery embolization performed to control a massive hemorrhage secondary to arterobiliary fistula and one for delayed graft function. Use of a liberal policy of liver splitting allowed us to satisfy the need of LTx in adolescent population.

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In Situ Split Liver Transplantation from Pediatric Donors: Early Results of a Pediatric Liver Transplant Program

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The technique of split liver transplantation (SLT) divides the liver of a heart-beating donor into an extended right graft (ERG) and a left lateral segment (LLS), including segments I, IV–VIII, and segments II–III, respectively. SLT with pediatric donors is still not worldwide accepted. Our experience with the use of pediatric donors for SLT in the pediatric population is reported. From July 2003 to April 2008 83 pediatric liver transplants were performed in 71 patients: 16 from whole livers (WL), 13 from ERG, 54 from LLS. Twenty-three were obtained using grafts from 22 donors younger than 15 years, generating 12 WL, and 13 partial grafts: 7 ERG and 6 LLS. Pediatric split liver donors weighing < 40 kg were used in 14 cases. After a median follow up of 20 months graft and patient survival from donors younger than 15 years and not are 73% and 77% for graft, 90% and 84% for patients respectively. Seven children underwent retransplantation and three of them after SLT from a 5, 7, 8, year's old deceased donor, respectively. One patient transplanted with SLT from pediatric donors developed HAT. Portal vein thrombosis developed in 3 patients (5%); in one of them, transplanted with LLS from a 14 years old donor, was secondary to hepatic outflow obstruction. Biliary complication rate was 18%, only one case involved SLT graft from pediatric donor. With an appropriate selection of donors and correct dimensional matching of recipient is in our opinion a safe procedure.

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Liver Transplantation for End-Stage Chronic Liver Disease. Toward Zero Hospital Mortality

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Background: The "standard" diagnostic indication for liver transplantation (LT) is postviral, alcoholic, cholestatic or cryptogenetic end-stage cirrhosis, associated or not with HCC. The aim of this study is to analyse the surgical outcome of the first 125 consecutive patients undergoing LT for "standard" indications between 2002 and March 2008 at our Istitution.

Materials and Methods: There were 111 men and 14 women of a median age of 52 years (range 31–67), suffering from HCV (80), HBV (21), HCV+HBV (9), alcoholic (8), cryptogenetic (4) or cholestatic (3) cirrhosis. HCC was associated in 43 cases. Expanded donor criteria were used to accept the liver donor, and marginal donors were used in 46 cases. Donor median age was 55 years (range 12–82). Grafts were preserved using double infusion from both aorta and portal vein, and the liver graft was removed en bloc with the pancreas and retroperinoneum, in order to reduce the risk of procurement-associated injuries of the hepatic hartery. Recipient incision was started as the harvesting team was back at the hospital.

Results: Piggy-back technique was feasible in all cases. Venovenous bypass was used in only one case. Donor arterial anatomy was normal in 75 cases. Major donor arterial variation requiring arterial reconstruction were found in 17 cases. Median cold ischemic time was 390 min (range 250–700). Fifty-three patients did not received intraoperative blood transfusions (42%). In-hospital mortality was 1.6 %, because of hemorrhagic shock (1 pt) and respiratory failure (1 pt). Major morbidity rate was 20 %. Three patients (3%) underwent re-LT for primary non-function (PNF), because of severe steatosis (2 pts) or acute Budd-Chiari (1 pt), and recovered. Reoperation rate was 5.6 %, because of bleeding (6 pts) and suspected hepatic artery thrombosis (1 pt). In six patients, persistent ascitis and renal failure resolved within 2 months after LT. Two patient had thrombosis of the hepatic artery and recovered after stenting. Median hospital stay was 18 days (range 9–60). In this population, 1-, 2- and 3-years survival were 92%, 88% and 85% respectively.

Conclusions: This series shows that LT for end stage liver disease can be performed with low morbidity and mortality rate. Appropriate harvesting and transplanting technique and perioperative management will allow in the future to perform liver transplantation without hospital death.

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Successful Liver Transplantation Using a Graft from a 93-Years Old Donor

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Because of the shortage of organ supplies in Italy, since 2002 we apply to the policy of using marginal grafts and splitting technique in liver transplantation (LT), in order to expand the pool of donor. Old donors (age>60 years) are considered marginal donors because of the risk of early graft dysfunction and lower graft and recipient survival. Nevertheless, use of grafts from donors older than 80 years was shown to be safe in small series. In our experience on 165 LT, donor median age was 55 years. Seven LT (4%) were from donors >80 years old (range 80–84) and LT was uneventful in all cases. We report the first case of LT using a graft from a 93-yo donor in our region. The donor (60 kg/165 cm) was admitted the day before because of stroke. There were no medical illnesses. Liver function tests, hemodynamics, serum Na, and liver US were normal. At laparotomy, the liver appeared macroscopically normal and histology showed only focal macrosteatosis (<30%). The iliac arteries were soft without any plaque of atherosclerosis, and the liver was retrieved and preserved using double aortic and portal perfusion. The anatomy of the hepatic artery was normal. Recipient was a 64 y.o. men suffering from end-stage HCV-related cirrhosis (MELD 17). Piggy-back LT with caval flow preservation was uneventful with a cold ischemic time of 375 minutes. Relaparotomy was performed after 12 hours to control bleeding. On 2nd p.o. day, AST/ALT and INR were 58/52 and 1.26, respectively, and the patient recovered. Extremely old donors grafts have potentially normal functional recovery. Use is acceptable for patients who are critically ill, and plays an important role in expanding the donor pool and decreasing mortality on the waiting list.

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The Non-Detrimental Sacrifice of Accessory Left Hepatic Artery in Pediatric Split-Liver Transplantation: A Report of Three Successful Cases

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Introduction: One of the major pitfalls in performing orthotopic liver transplantation is graft arterial supply reconstruction.The state of the art of hepatic artery re-implantation is the guarantee of an adequate blood flow through a single large,short feeding-artery.The aim of our study is to analyze the outcome of three pediatric split-liver transplants (SLTx) performed with a left lateral segment,where accessory left hepatic artery (ALHA) has been intentionally sacrificed.

Material and Methods: We report three cases of SLTx in which an ALHA was found and not re-implanted. In all cases,the accessory nature of the left hepatic artery was detected by 1) backflow observed after cutting the accessory left hepatic artery at its origin during liver procurement; 2) backflow observed after perfusing the dominant hepatic artery during back table; 3) backflow from the accessory branch after reperfusion of the graft; 4) presence of artery flow Doppler ultrasound detected in all liver segments after reperfusion.

Results: All postoperative periods were uneventful and characterized by rapid improvement in the liver function tests.Conclusion:During a SLTx with the use of a left lateral segment,the sacrifice of ALHA seems not to increase the rate of complication,though it is mandatory to check the accessory nature during liver procurement, on the back table,and after graft reperfusion.

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Immune Haemolitic Anemia Due to FK after Small Bowel Transplantation: a Case Report

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Immune hemolytic anemia following organ transplantation is a rare complication. We report a case of a 25-years-old man who underwent isolated intestinal transplant for diffuse splanchnic thrombosis due to idiopathic hypercoagulable state. Immunosoppression was based on induction therapy with Campath 1-H and low doses of tacrolimus as maintenance, without steroids. After 2 years, the patient developed severe immune hemolytic anemia diagnosed by haemoglobin drop from 12 to 7 g/dl, Coombs test +, high LDH, low haptoglobin and bone marrow biopsy (immuno-mediated block of hematopoiesis). Diagnostic work-up excluded lymphoproliferative disorders. The patient was initially treated with prednisone and intravenous immune globulin with resolution of anemia. After 5 months, during steroid tapering, patient had a second severe episode of anemia, treated by increasing dosage of prednisone and rituximab: hematological tests returned to normal. Subsequently patient developed new episodes of anemia, during attempt to reduce steroids. He started Azatioprine, reduced steroids and underwent splenectomy but anemia crisis continued. We tried cyclophosphamide without benefits. Bactrim was withdrawn because of possible side effects on hematological state. High doses of steroids were re-started, but after 2 months the patient developed a severe pneumocistis carinii infection: FK was stopped, steroids continued at high doses and Bactrim was re-established. After resolution of the infection, FK was started again and patient soon developed a new episode of anemia. FK was definitively stopped and Rapamicin started, with low doses of steroids associated. After 12 months the patient is good, without episodes of anemia and with a normal hematological profile.

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A Seven-Year Italian Experience in Clinical Intestinal and Multivisceral Transplantation

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Introduction: To report our Italian experience in adult intestinal transplantation.

Patients and Methods: Between December 2000 and March 2008, we performed 39 intestinal transplants in 38 adult patients: 30 isolated intestinal and 9 multivisceral (5 with liver). In 3 cases abdominal wall transplant was added. Underling diseases were mainly represented by short bowel syndrome, chronic intestinal pseudo-obstruction and Gardner Syndrome. Indications for transplantation were: loss of venous access, recurrent sepsis, electrolyte-fluid imbalance and reversible liver dysfunction. Immunosuppressive regimens were based on induction therapy and Tacrolimus as maintenance, associated with steroids in some cases.

Results: After a median follow-up of 937 days (1–2603), actuarial 5-year patient survival is 67% for isolated intestinal transplant and 33% for multivisceral transplant (p= 0.03); 5-year graft survival is 64% for isolated intestinal graft and 33% for multivisceral (p=0.06). The main cause of death was sepsis (68.7%), the main cause of graftectomy was untractable rejection (50%). Among the 22 recipients alive, 77% has a normal bowel function with a regular diet without parenteral support, 2 patients are on parenteral nutrition (1 patient is waiting for retransplantation due to graft trombosis). We experienced 2 death related to abdominal wall closure.

Discussion and Conclusion: In our series, isolated intestinal transplant has acceptable results in terms of patient and graft survival. In cases of pre-transplant liver dysfunction, timely isolated intestinal transplant can prevent liver failure. A careful evaluation of remnant abdominal cavity is necessary in candidates to intestinal transplant, performing abdominal wall transplant when difficult abdominal closure is expected.

Obesity

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Sleeve Gastrectomy vs BIB Placement in Severe Morbid Obesity Patients: Preliminary Results

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Background: Sleeve gastrectomy has been proposed as first stage of the laparoscopic biliopancreatic diversion/duodenal switch (BPD-DS) to achieve weight loss with reduction of morbidity and mortality before the second stage. Bioenterics Intragastric Balloon (BIB) placement can produce significant weight loss in the short term period. The aim of this retrospective study was to compare the weight loss and comorbidities control achieved by BIB vs sleeve gastrectomy at 6 months in severe obese patients.

Method: From March 1998 to May 2004 18 patients underwent BPD-DS and 17 patients underwent BIB placement. The patients were matched on age, sex, BMI and comorbidities. The mean preoperative weight was 156.8 Kg in the sleeve gastrectomy group and 155.2 Kg in the BIB group, with mean BMI of 57.42 and 55.84 respectively.

Results: At the end of the study period there was no statistically significant difference in the incidence of arthropathy, diabetes, osas, hypertension, dislipidemia between the two groups, while the hyperinsulinemia was higher in the BIB group of patients. Excess weight loss averaged 26.6% in the sleeve gastrectomy group and 21.5 % in the BIB group (n.s.).

Conclusions: The preliminary results of this study show that the weight loss achieved by sleeve group in 6 months is higher than BIB group but both treatment have similar results on comorbidities control. The BIB may be a reasonable option, in patients undergoing BPD-DS, as a first risk reducing step.

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The Double BIB Treatment in Obese Patients: Rational and Results

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The BioEnterics Intragastric Balloon (BIB) has been introduced as an additional short-term therapy for obesity. Aim of this study was to evaluate single BIB treatment vs double (BIB+BIB) treatment in terms of weight loss, safety and effects on comorbidities.

Methods: From March 1998 to September 2007 in 57 Obese Patients (35 females, 22 males) mean age 37.7±11 years and mean BMI 47.6±5.2, after removal with an interval of 30 days (40±6 days), a second BIB was placed (Group A). This group were compared with only one BIB placement group(Group B). The double treatment was used in the following two conditions: success of the first treatment (EWL of at least 25%) and temporary refusal of surgery. BMI, EWL% and the interval between the two treatment were recorded.Results:At the end of the first treatment the mean BMI was 40.4±3.7in Group A and 40.1±3.2 in Group B; the mean EWL% was 27±1.5 and 26.9±1.2 respectively. When the second BIB was removed (after 6 months) the mean BMI was 36.7±2.3 and the mean EWL% was 13±3.4. At the same interval time in Group B the mean BMI was 39.2±0.8.

Conclusion: Multiple treatment is a feasible and safe therapeutic option in patients refusing or waiting surgery.The results obtained with the double BIB treatment is higher than a single BIB treatment alone(the results of the 2°BIB never exceed 50% of the weightloss of the 1°balloon)with better improving of comorbidities.

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Laparoscopic Magenstrasse & Mill Procedure for Morbid Obesity: Our Initial Experience

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Background: The outcomes and initial results of laparoscopic Magenstrasse & Mill procedure were evaluated.

Methods: A prospective study of the initial 10 patients who underwent laparoscopic Magenstrasse & Mill procedure was performed.

Results: Between February 2007 and January 2008, we performed 10 laparoscopic Magenstrasse & Mill procedure in morbidly obese patients. There were 7 women and 3 men, with mean age 51.6 years (range 33–68). Mean preoperative weight was 138.5 kg (range 101–201 kg), with mean preoperative BMI 51.6 kg/m² (range 37–71). Mean operative time was 121.5 minutes (range 45–195). No patient required conversion. There were no mortality. There were 1 (10%) postoperative complication (a case of melena, improved with conservative treatment). Mean hospital stay was 8.5 days (range 6–14). At 6 months follow-up, there were 7 patients (70%). Average weight, BMI and %EWL at 6 months were 109.4 Kg (range 75–171), 42.4 kg/m² (range 32–62) and 41.2% (range 18.7–66.7), respectively.

Conclusion: Laparoscopic Magenstrasse & Mill procedure is a safe and simple technique that can be safely integrated into a bariatric surgical program with good results in terms of weight loss and quality of life.

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Laparoscopic Sleeve Gastrectomy for Morbid Obesity: Our Experience

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Background: The results and outcomes of laparoscopic Sleeve Gastrectomy were evaluated.

Methods: A prospective study of patients who underwent Sleeve Gastrectomy was performed. Results: Between June 2005 and January 2008, we performed 16 laparoscopic Sleeve Gastrectomy in morbidly obese patients. There were 10 women and 6 men, with mean age 52.9 years (range 39–65). Mean preoperative weight was 150.8 kg (range 111–237), with mean preoperative BMI 57.8 kg/m² (range 45–71). Mean operative time was 109 minutes (range 60–150). No patient required conversion. There were no mortality. There were 1 (6.25%) postoperative complication (a case of trocar site bleeding, with need to hemotransfusion). Mean hospital stay was 14.2 days (range 6–65). At 12 months follow-up, there were 9 patients (56.25%). Average weight, BMI and %EWL at 12 months were 107.1 Kg (range 90–133), 43.8 kg/m² (range 35–55) and 42.7% (range 33.3–51.3), respectively.

Conclusion: Laparoscopic Sleeve Gastrectomy is a safe and simple technique that can be safely performed in morbidly obese patients with an high surgical or anesthesiological risk, with good results in terms of weight loss and quality of life.

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Laparoscopic Conversion of Vertical Banded Gastroplasty with an Antireflux Wrap into Roux En Y Gastric Bypass

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Background: Vertical banded gastroplasty (VBG) is associated with a high rate of failure due to specific complications such as outlet stenosis, dysphagia, and acid reflux resistant to medical treatment, or due to insufficient weight loss. To overcome the acid reflux some authors add an antireflux valve to the classical VBG procedure. Roux-en-Y gastric bypass (RYGBP) is the procedure of choice in case of VBG failure especially when acid reflux is a main concern. Herein, we report laparoscopic conversion of the VBG with an antireflux wrap to RYGBP in 8 patients.

Methods: From October 2004 to October 2008, 8 patients with a VBG and an antireflux wrap were converted into LRYGBP. Indications for conversion were acid reflux resistant to medical treatment one case, insufficient weight loss 5 cases, dysphagia 3 cases, outlet stenosis resistant to endoscopic balloon dilation 2 cases. Associated comorbidities were hypertension in 3 cases, diabetes and sleep apnoea one case each. Conversion was performed 80 months (range 57–84) after the primary procedure at a mean BMI 41 (range 37–43).

Results: All procedures were completed laparoscopically in a mean operative time of 135 min (range 80–220). In all cases the wrap was taken down and a RYGBP with a 150 cm long RY loop was fashioned. One patient developed a stenosis at the gastrojejunostomy that was managed successfully with endoscopic balloon dilation. At mean follow up of 24 months, mean BMI is 29 (range 26–31), and all but one patient that only improved hypertension are free of comorbidities.

Conclusions: Conversion of VBG with an antireflux wrap into RYGBP is technically feasible, safe and effective in achieving a consistent weight loss.

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Two Steps Laparoscopic Duodenal Switch for Superobesity

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Aims: We report our preliminary experience with the two steps surgical strategy for duodenal switch (DS) in the super obese (BMI > 50)

Methods: Data on super obese patients who had the laparoscopic DS done in two steps were extracted from a prospective held database. Super obese patients were offered laparoscopic sleeve gastrectomy as the first step and laparoscopic DS secondarily to increase weight loss.

Results: From December 2006 up to January 2008, 13 patients underwent the laparoscopic DS in two steps. There were 12 women and 1 man, with a mean age of 43,7 (22 to 59) years. Mean initial BMI was 53,6 (44–59) kg/m², mean excess weight was 85,9 (57–111) kg, and there were 20 comorbid conditions in 13 patients (hypertension in 4 patients, sleep apnoea in 3 patients, diabetes in 6 patients, joint disease in 3 patients, hyperlipidemia in 4 patients). Sleeve gastrectomy resulted in a mean excess weight loss of 44,57 % (30,9 % to 67 %) and a mean BMI of 39,8 (33 to 46) kg/m² and the following improvement in comorbid conditions: improvement of hypertension in 3 patients, diabetes in all patients as well as hyperlipidemia, sleep apnoea did not require any treatment in 2 patients and joint disease improved in 2 patients. The DS procedure was completed laparoscopically in all cases, the mean interval between the two procedures was 15,4 (8–31) months. There was no mortality, and one patient developed a strangulated incisional hernia at postoperative day 4 that required a laparotomy. At a mean follow-up of 7,3 (1–24) months, the mean BMI and excess weight loss are respectively 38,5 kg/m² and 48% at one month, 35,7 kg/m² and 53,8 % at 3 months, BMI 30,3 kg/m² and 69 % at 6 months. Blood tension normalized in 3 patients and improved in one more, diabetes normalized in 4 patients, and sleep apnoea and joint disease did not require treatment anymore in all patients.

Conclusions: The two steps surgical strategy for laparoscopic DS is feasible, safe and effective for the treatment of super obese patients.

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Sleeve Gastrectomy for Morbid Obesity

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Aims: We report our preliminary experience with laparoscopic sleeve gastrectomy (LSG) for morbid obesity.

Methods: Data on patients who had laparoscopic LSG were extracted from a prospective held database. Indications for LSG were super obese patients (as the first step of a staged procedure), intraoperative findings, and patient's desire.

Results: From April 2005 up to March 2008, 78 patients underwent LSG. There were 54 women and 24 men, with a mean age of 40,4 (19 to 57) years. Mean initial BMI was 53,8 (41–72) kg/m^2, mean excess weight was 88,4 (45–136) kg, and there were 64 comorbid conditions in 30 patients (hypertension in 24 patients, sleep apnoea in 15 patients, diabetes in 12 patients, joint disease in 13 patients). Indications were a BMI > 50 in 74 cases, intraoperative findings in 3 cases and patient's desire in one case. Eighteen patients had had a previous bariatric procedure (gastric banding 14, vertical banded gastroplasty 4). The LSG procedure was completed laparoscopically in all cases. There was no mortality, and 2 complications were recorded: 1 high leak (treated with an endoscopic stent) and 1 prolonged discharge of pus from an abdominal drain. LSG resulted in a mean excess weight loss of 46,5 % and 47,5 %, a mean BMI of 37,1 and 36,4 kg/m^2 at 12 and 18 months respectively. Blood hypertension resolved in 6 cases and improved in 1, diabetes resolved in 5 cases and improved in 1, sleep apnoea resolved in 6 cases and improved in 2, joint disease resolved in 1 case and improved in 1. Sixteen patients (20,6 %) had a second step procedure at a mean interval of 15,4 months from LSG.

Conclusions: LSG is safe and effective in the short term but it should be intended as the first step of a staged procedure until long term results become available.

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Morbid Obesity: One Year Experience of Laparoscopic Roux-En-Y Gastric Bypass

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Purpose: The aim of this study is to evaluate effectiveness in terms of short terms results of laparoscopic Roux-en-Y gastric bypass in treatment of morbid obesity. In literature there are publications on the short-medium term results of gastric by-pass, pubblications of long term results are very limited and the results are less documented.

Methods: A retrospective chart review was performed on 23 patients underwent laparoscopic bypass, from genuary to november 2007, in which gastroenteroanastomosis was done manually; parameters like weight loss, glucose levels and early complications (<30 days) were evaluated in a follow-up up to 1, 6 and 9 months.

Results: Twenty-threee interventions for morbid obesity were performed: 4 males (17.3%) and 19 females (82.7%), mean age 43,57 (32–67). Early complications in 5 patients (21.7%). Rate of convertion: 4 patients (17.3%). The mean operation time was 193.8 minutes (105–300). The mean hospital stay was 16.52 (7–110). The mortality rate was 0%. Follow-up was conducted on 15 patients (65%): pre-operative mean BMI 45.91 (32–67) and 1, 6 and 9 months later was 41.04, 33.73 and 32.5 respectively and was statitically significant (p-value=0.0). Mean pre-operative glucose levels 129.8 (82–270) and after 1, 6 and 9 months was 122.33, 96.14 and 78.56 respectively and was statitically significant (p-value=0.0).

Conclusions: Laparoscopic gastric by-pass is an effective tecnique for treatment of morbid obesity, with excellent results in terms of weight and glucose levels loss and with a low number of early complications. Above all, the laparoscopic Roux-en-Y gastric by-pass to treat morbid obesity is an easy task for experienced laparoscopic surgeons, allowing patients also to benefit of advantages of mini-invasive approach.

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Comparison of Nutritional Consequences of Conventional Therapy of Obesity, Adjustable Gastric Banding, and Gastric Bypass

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Background: Gastric bypass (GBP) seems to be more efficient than adjustable gastric banding (AGB) on weight loss and comorbidities, but nutritional complications of each surgical procedure have been poorly evaluated.

Methods: We have performed a cross sectional study to compare nutritional parameters in 201 consecutive obese patients, who had been treated either by conventional behavioural and diet methods (CT, n=110) or by bariatric surgery, including 51 AGB and 40 GBP.

Results: BMI was similar after AGB (36.6 ± 5.3 kg/m2) and GBP (35.4 ± 6.3 kg/m2), but patients in the GBP group had lost more weight and had less metabolic disturbances than those in the AGB group. On the other hand, the prevalence of nutritional deficits was significantly higher in the GBP group than in the 2 others groups ($p < 0.01$), whereas the AGB group did not differ from CT. Particularly, the GBP group presented an unexpected high frequency of deficiencies in fat-soluble vitamins. Moreover, vitamin B12, hemoglobin, plasma prealbumin and creatinin concentrations were altered in the GBP group.

Conclusion: GBP is more efficient than AGB in correcting obesity but this procedure is associated with a higher frequency of nutritional deficits that should be carefully monitored.

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Early Results of LAGB after Bib®-Test: A Case-Control Study

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Introduction: The BioEnterics Intragastric Balloon (BIB®) induce weight loss by limiting food consumption. BIB® can select patients for restrictive surgery, such as laparoscopic gastric banding (LAGB). We hypothesized that previous BIB encourage a major early weight loss, through either a behaviour modification, a metabolic or a psychological effect.

Methods: We enrolled 20 patients with good results wit balloon followed by LAGB (group 1) and 20 controls treated with LAGB alone (group 2), matched for sex, and age, without differences in BMI (42.1 and 44.2). We evaluated early results at 1, 3 and 6 months, in terms of excess weight loss and BMI.

Results: No differences in rate of complications and reoperations were reported. At LAGB placement, both operative time and hospital stay were shorter in group 1 than in group 2.The %EWL produced by the BIB® in the group 1 was similar to %EWL observed in the first 6 months after LAGB in the group 2 (p=ns). After LAGB, no significant difference in %EWL was observed at 1(10.5% vs 12.1%), 3 (19.4 vs 23.2%) and 6 months (38.2% vs 44.2%).

Discussion: BIB® can be used to select patients for bariatric restrictive surgery. Initial weight loss obtained with BIB® advantaged in related-surgery timing and risks. Treatment with BIB® produced results comparable to first 6 months of LAGB. After BIB®, results of LAGB were similar to group treated by LAGB alone. Initial effect of BIB® may play an initial role similar to LAGB and, also for non super-obese, reduce operative risks.

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Laparocele in Obese Patients: A Good Timing for the Best Approach

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Introduction: Obesity represents an independent risk factor for incisional hernias. Despite several causal factors have been confirmed, incidence ranges from 9.5 to 50%. An ideal approach to laparocele in obese has not been described. Selection of type of procedure and timing of correction are basilar in management of these complications.

Methods: Between 1999 and 2004, we reviewed the medical records of 115 patients, analyzing variables related to patients and surgery (follow-up at least of 3 years). We considered three groups: obese patients elegible for open bariatric surgery (50 cases, group 1); obese patients with concomitant laparocele (40 cases, group 2); and laparocele after open bariatric surgery (25 cases, group 3). Standardization consisted of: reducing of incision size, the avoidance of periumbilical region and the use of non-absorbable sutures, for group 1; in group 2, preoperative weight loss with intragastric balloon, and c orrection combined with bariatric procedure if hernia size <3 cm, or if sintomatic; in group 3, correction after stabilization of weight.

Results: In group 1, we reported a rate of laparocele of 8% after bariatric surgery (4 cases), all treated with prosthetic repair. Group 2 presented at time of correction a mean reduction of BMI of 3.5 points, and concomitant procedure occured in 30 cases, while 10 cases of laparocele were corrected after weight loss (mean interval: 14 months). We used in all cases of hernia < 3 cm (21 cases) a polypropilene mesh Herta®. For hernia >3 cm (44 cases), we chosed compiste mesh, Vypro® in 32 cases and Ultrapro® in 12 patients. We did not observe any recurrence. Cese of seroma (70%) were all solved without draining.

Conclusion: Choice of time and type of correction of laparocele must be carefully considered, because these are mandatory for good results and for reducing effects of obesity on laparocele.

Emergency Surgery

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Colonic Perforations after Renal Transplantation: Risk Factors Analysis

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Background: Perforation of the colon is a rare and dramatic complication in kidney transplanted patients (high risk population for end-stage renal failure, maintenance therapy with dialysis before transplantation and chronic immunosuppression).

Methods: 1651 consecutive renal transplants performed between 1976 and 2007 at the St Orsola- Malpighi University Hospital, Bologna, ITALY.

21 recipients (1.2 percent) experienced 21 episodes of colonic perforations, 7 of which (33.3 percent) were fatal. The medical records and clinic charts of each person were analyzed for variables between those who survived and those who died of the colon perforation.

Results: Significant differences in patients characteristics, laboratory findings, mean corticosteroid dose, and nutritional status were noted between the two groups.

Early diagnosis and intervention improved the prognosis; 18.1%(2 out 11) of those operated on within 24 hours died; 50% (5 out 10) died after delayed intervention. ($p<0.05$).

Excision of the lesion with end- ileostomy + transverse colon mucous fistula (right colon perforations) or end-colostomy plus sigmoid colon mucous fistula (left colon perforations) were performed. The incidence and outcome of posttransplant colonic perforations were associated with the intensity of immunosuppression.

Conclusions: Colon perforation is a dramatic complication in immunosuppressed renal transplant recipients. Prompt diagnosis and treatment are critical; a high index of suspicion, urgent investigation, prompt surgical intervention and attention to the nutritional status are essential for survival.

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Bowel Perforation in Patient with Degos Syndrome

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Degos' disease, or malignant atrophic papulosis (MAP), was first described in 1941, and is a rare connective tissue disorder characterized by "pathognomonic" cutaneous porcelain-white, atrophic papules.A vaso-occlusive process of unknown origin, Degos' disease can be fatal due to involvement of the gastrointestinal tract or central nervous system.Less than 200 cases have been described in the literature.The commonest cause of death is intestinal perforation (about 60% small intestine) and peritonitis. We report the case of a 27 year old woman who presented to the Emergency Department in February 2008 with abdominal pain and paralytic ileus, already under treatment for MAP since May 2005.Examination revealed a diffusely tender, rigid abdomen. Plain abdominal X-Ray showed free air under the diaphragm. Endoscopy carried out a few days previously described blood in the intestinal lumen and multiple linear ulcerated lesions along the entire gastrointestinal tract. The patient underwent emergency laparotomy which demonstrated,from the stomach to the rectum, diffuse edema and thickened mesentery with submucosal haemorrhage. A single perforation of the transverse colon was closed with Vicryl sutures. A defunctioning ileostomy was fashioned and peritoneal lavage executed.The patient was discharged on the 7th postoperative day for further treatment of the cutaneous lesions.

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The Laparoscopic Surgery in the Treatment of the Acute Appendicitis. State of the Art and Personal Experience

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Introduction: One of the pathologies that more than frequent meet in urgency is the acute appendicitis, which represents about the 6% of all the surgical procedures made every year.

Has to be pointed out as today exam instrumental and laboratory which confirms the acute appendicitis diagnosis in a definitive and unequivocal way does not exist. Must furthermore add yourself as other illnesses which can sometimes look like for their all symptomatology acute appendicitis.

Methods: Since January 2004 to Ottobre 2007 at UO General and Thoracic Surgery to the Hospital Villa Scassi (Director: Prof. Roberto Giua) were performed 32 laparoscopic procedures in emergency for suspected acute appendicitis.

Of these, 13 were different of appendicitis acute diseases (1 sigma perforated diverticulum, 11 of relevancy gynaecological disease, 1 abdominal wall hernia in obese patient at the right side) with 19 confirmed acute appendicitis.

Conclusion: The indication to appendectomy operation is always based on the diagnosis of suspects acute appendicitis and as the first phase of the intervention , both that to verify the diagnosis correctness. The discussion on the pros and against open vs laparoscopic appendectomy is still open.

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Multiple Pancreaticoduodenal Penetrating Gunshot Trauma Evolving into Acute Necrotizing Pancreatitis. *A Combined Surgical and Minimally Invasive Approach*

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Introduction: Gunshot pancreatoduodenal injuries are uncommon, but not rare. Their management remains complex, because of the absence of standardized guidelines, and for the associated vascular and gastrointestinal lesions.

Case Report: A 27-year-old man underwent emergency surgery for maxillofacial, thoracic lesions, and for a massive hemoperitoneum due to gunshot trauma of liver, small bowel and duodenopancreatic district. First, surgical hemostasis, duodenogastric and intestinal resections, peripancreatic and thoracic drainage were performed. At the 12th postoperative day, the patient underwent resurgery with toilette, external duodenal drainage with *Foley* tube and peripancreatic drainage repositioning for a duodenal perforation due to acute necrotizing pancreatitis. Eight days later, following incidental removal of peripancreatic drainages, a CT scan showed an abdominal fluid collection. A percutaneous CT-guided drainage, by inserting an 8.5 *Fr* pigtail catheter, was performed, avoiding reoperation. Discharge was on the 80th postoperative day.

Conclusions: A combined mini-invasive and surgical procedure is safe and effective in the treatment of complications of duodenopancreatic gunshot trauma. The multidisciplinary approach by emergency surgery and interventional radiology is the golden standard in the successful polytrauma management, avoiding further resurgery.

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Utilization of Ultrasonography in the Traumatism of the Long Bones in Pediatric Patients

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Introduction: The utilization of the ultrasound in the diagnosis of the traumatisms of the pediatric patients is largely documentated in the international scientific literature.

In this last years many authors preferred this exam for the children because the ultrasound is comfortable, rapid, often diagnostic and doesn't involve the use of ionising radiation.

The aim of our study is to demostrate its possible utilization as a primary evaluation in the pediatric patients in sostitution of the x-rays.

Materials and Methods: In our emergency department from june 2007 to February 2008 we evaluate 45 children (mean age 2–16 years old) with traumatisms of the long bones of arms and legs.

All the 45 children has been evaluated first with an ultrasound exam, with an ESAOTE Mylab 50 machine using a linear 7.5 Mhz probe, followed by an x-ray.

The ultrasound scans were performed only by two of the authors (Dr C.P. and Dr L.L.).

Results: The evaluation of the traumatism with ultrasound scans had an high rate of false negative (65%) in the first period of the introduction of such exam (January-February 2007).

After this period of training we had an improvement of our results with a correlations between ultrasound and x-rays scans of the 96%.

Conclusions: We have been able to demonstrate that the diagnosis of fracture of long bones in children by ultrasound scans is possible and it is safe even if it requires time, patient and practice needing a long period of training.

Ultrasound examination may become a satisfactory substitute for radiography in certain defined circumstances.

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Spontaneous Intestinal Haematoma as Anticoagulant Treatment Complication

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Introduction: Haemoperitoneum and intestinal haematoma are rare complications that can occur in patients treated with oral anticoagulant therapy. The clinical picture of abdominal pain in a patient on anticoagulant therapy presupposes a diagnostic problem. In addition to the usual differences with respect to possible acute abdominal pain, the diagnosis of such patients requires the consideration of a set of extremely rare bleeding lesions which normally do not occur in patients with acute abdominal pain without coagulation defects.

Case Report: A 71 year old man arrived at an emergency room with diffuse abdominal pain. He reported that he had been on anticoagulant treatment with acenocoumarol due to an episode of atrial fibrillation (4 weeks prior); simultaneously he had consumed up to 3 grams of paracetamol a day because of osteoarthritis. The blood tests showed anemia and marked alteration of coagulation. A direct abdominal Rx revealed a dilated ileal ansa. The emergency laparotomy evidenced a massive haemopritoneum with a mesenteric transmural haematoma of 40 cm jejunal ansa which was resected.

Discussion: Even if spontaneous haemoperitoneum associated with other risk factors such as hemophilia, leukemia, etc. are described, there is a relationship between the risk of hemorrhage

and excessive anticoagulation caused by an overdose or interaction with other pharmaceuticals. The importance of recognizing this clinical picture is fundamental to the possibility of choosing a conservative treatment which in most cases can determine a satisfactory result and avoid surgical treatment in patients who frequently have severe associated pathologies.

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Airbag Thoracoabdominal Traumas: Review of the Literature and Our Experience with a Rare Case of Blunt Abdominal Trauma Resulting in Small Bowel Perforation

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Introduction: Recent studies pointed out that the airbag might cause injuries, specially when it is not associated with seatbelt. In fact, some studies pointed out that crash victims using airbag alone have increased injury severity, hospitalizations, and rehabilitation. We descrive a case of thoracoabdominal trauma occurred during a head-on collision after an airbag deployment without seatbelt use with a wide review of the literature related to the case.

Methods: A 31-years-old man was admitted to the emergency room after sustaining a vehicle collision, during which the automobile's airbag was deployed. At that time the patient was not wearing a seatbelt. After a TC scan with the suspicious of a stable spleen lesion the patient was transferred to the General Surgery ward. Due to the warsening of clinical condition a CT scan was repeated showing a small bowel wall thickening compatible with haematoma of a jejunal loop. A small amount of free air and fluid was present in the abdominal cavity. The patient underwent to a surgical laparotmy. A transmural perforation of a jejunal loop was identified and repared.

Discussion: In particular blunt abdominal trauma resulting in small bowel perforation is an infrequent injury. These injuries are difficult to diagnose because specific signs are poor and a delay in treatment increases mortality and morbidity of the patients.

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Surgical Treatment of Splenic Injury (SI) after Diagnostic Colonoscopy for Rectal Cancer

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Introduction: SI is a rare complication following colonoscopy. We report a challenging case of delayed rupture in a patient affected by obstructive rectal cancer.

Patients and Methods: A 70 years old patient under oral anticoagulant therapy underwent colonoscopy for proctorrhagia. Diagnosis of stenotic rectal lesion was obtained but elongated colon conditioned the passage of flexible endoscope up to cecum. Any discomfort wasn't recorded during and immediately after the procedure. 48h later patient experienced sharp abdominal pain leading to emergency department with mild peritoneal signs at clinical evaluation. Bowel perforation was excluded and hypovolemic shock occurred after brief observation. Haemodinamic stability was restored and urgent abdominal CT scan rated large amount of haemoperitoneum and grade 2 SI.

Results: Urgent laparotomy confirmed a tear at inferior pole of the spleen that required splenectomy. Neoplasia was treated by Hartmann's procedure for contextual bowel obstruction. Postoperative course was free of complications and definitive histology found splenic subcapsular haematoma and Dukes' stage C2 adenocarcinoma.

Discussion: Perforation and bleeding are the most common complications after colonoscopy while only 55 cases of SI are reported in literature since 1974. Traction on the splenocolic ligament and direct trauma seem to be the main causes of hyatrogenic lesions. Peritoneal adhesions and splenomegaly play important role as predisposing factors although not present in our patient. Dolichocolon and oral anticoagulant intake could explain improved technical difficulty and delayed filling up of subcapsular haematoma respectively. Colonic obstruction added further surgical challenge to our case.

Conclusion: SI should be considered in the differential diagnosis of acute abdominal pain after colonoscopy.

Endocrine Surgery

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Medullary Thyroid Cancer: Our Experience

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Introduction: Medullary Thyroid Cancer is the third most common of all thyroid cancers. It originates from parafollicular cells producing calcitonin. There are three types of medullary cancer:sporadic, MEN associated and familial.

Materials and Methods: Since January 1995 to December 2006, 962 patients underwent to surgical treatment for differentiated thyroid tumour. Of these 827 had a papillary tumour, 96 had a follicular cancer and 32 had a dignosis of medullary cancer (3, 21%) and 6 patients had insular cancer. We divided patients with medullary tumours in two groups:the first group, 24 patients, had a preoperative diagnosis (FNA, calcitonin dosage) and the second group, 8 patients, had an incidental diagnosis. We performed a total thyroidectomy associated with central compartment dissection and ipsilateral lymphadenectomy in the first group. In the second group we performed total thyroidectomy.

Results: Long-term survival was analysed in 26 patients. Patients were controlled with calcitonin,thyroid hormones and CEA dosage, neck ultrasound each 6 months; total body CT scan and bone scanning each year. 17 patients had a complete remission. 3 patients in the first group and 2 patients in the second group had a local recurrence and they underwent to surgical treatment.

Conclusions: Even though laterocervical lymphadenectomy is still strongly debated we recommended to perform it routinely.

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Surgical Management of Multiple Abdominal Paragangliomas

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Introduction: Pheochromocytomas present incidence of about 1–2/100.000 in adults. Nearly 10% might present extra-adrenal localization or be multiple and are defined as paragangliomas. They might be catecholamine-secreting as ordinary pheochromocytomas or clinically asymptomatic with compression symptoms.

Incidentally diagnosed asymptomatic retroperitoneal tumors or secondary hypertension, supported by increased levels of catecholamine and extra-adrenal lesions identified at CT or MR imaging with positive MIBG scintigraphy, might be referable to paragangliomas.

Methods: The Authors present clinical reports of patients affected by multiple abdominal paragangliomas, located both in adrenal glands and in extra-adrenal paraaortic space. A short video-clip dealing with surgical procedure of these particular cases is also presented.

Results: Surgical outcome is often influenced by the possible malignancy of these tumors, and the tendence of these patients to have difficult post-operative blood pressure control. In case of genetic modification recurrence become possible, even in other sites than the abdomen.

Conclusion: Optimal care requires multidisciplinary approach, accurate preoperative study with exact localization of lesions and adequate preoperative medical treatment to reduce perioperative cardiovascular complications. Surgical approach might be chosen considering patient's features and institutional experience and preferably these patients might be referred to high specialized centres.

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Laparoscopic Resection of a Renal Hilar Paraganglioma

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A 53 year old man with malignant melanoma of the left leg,underwent a CT scan of the abdomen/pelvis which revealed a 3 cm round lesion of the left renal hilum. Blood pressure and urinary catecholamine metabolites were normal. Through a transperitoneal laparoscopic approach using 4 ports and the patient in the left flank position, the splenic flexure of the colon was mobilized and the tumour identified and sucessfully resected intact with the use of the harmonic scalpel. Intraoperative blood loss was <50 ml. Pathological examination, including immunofluorescent staining, demonstrated a benign paraganglioma with negative resection margins. Postoperative recovery was unremarkable and he was discharged after 3 days. Paragangliomas are rare, highly vascular tumors arising from extraadrenal chromaffin cells situated along the sympathetic chain with a reported incidence of 1:100,000. They have a greater malignant potential compared to the more common pheochromocytoma. Clinically silent paragangliomas may cause hemodynamic instability during surgery so empiric low dose alpha-adrenergic blockade should be considered. The magnification achieved during laparoscopy allows increased precision during manipulation. Approximately one third of cases recur so long-term follow-up is important.

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Emergency Surgery Secondary to Thyroid Disease

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Introduction: Respiratory insufficiency, circulatory failure, and hemorrhage represent the major causes of thyroid surgery in emergency. However, the incidence has not been determined yet. The aim of this study is to analyse the incidence and the outcome of this event.

Materials and Methods: A surgical series of 351 thyroid patients who underwent total thyroidectomy between 2002 and 2007 has been retrospectively reviewed.

Results: The majority of the goiters (N=296, 84.3%) was cervical and 55 cases (15.7%) were substernal. In 6/55 (10.9%), total thyroidectomy was performed through the sternotomy. Histology revealed benign disease (296/351, 84.3%) and malignancy (55/351, 15.7%).

Five patients had emergency surgery: the acute respiratory failure (3 cases) was the most common emergency, followed by circulatory failure and hemorrhage (1 case, respectively). In one case, tracheotomy was performed because of the neoplastic laringotracheal invasion. There was no postoperative death; the only surgical complication was a postoperative transient recurrent palsy in 2 patients.

Conclusion: Although rarely, substernal goiter, thyroid malignancy and infrequently cervical goiter may be the cause of acute manifestation requiring life-threatening treatment to prevent sudden death. The timing of operation is crucial to prevent the appearance of the these complications.

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Thymoma Presenting as a Substernal Goitre

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Introduction: Mediastinal masses represent a large group of diseases. Substernal goitres accounts for 10% to 15% of all mediastinal masses, and thymoma for 20% of mediastinal tumors. One-third of patients with thymoma are asymptomatic. Thymomas rarely cause a neck mass resembling a goitre. CT scan aids in characterization of mediastinal masses and successfully distinguishes substernal goitres from other lesions. We report a case of a thymoma presenting as a substernal goitre to emphasize the potential pitfalls associated with their diagnosis and the literature review.

Case Report: A 53-year-old woman was referred to us after neck US and CT scan led to diagnosis of substernal goiter. The patient underwent total thyroidectomy through a collar incision; sternotomy was performed revealing a mass separated by thyroid, extending from upper mediastinum. Microscopic examination of the thyroid and the mediastinal mass found a multinodular goitre affected by aspecific thyroiditis and type B1 thymoma.

Conclusion: Although CT appears to be the best imaging for identifying and characterising substernal goitres and for deciding the best surgical procedure, it is exceptionally not diagnostic. After the diagnosis and treatment of substernal goitres have been defined, we suggest surgical exploration of the upper mediastinum during resection, considering the possibility of concomitant lesions.

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Incidental Thyroid Cancer in Patients with Multinodular Goitre. Our Experience

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Introduction: Incidental thyroid carcinoma (ITC) in patients operated for suspected benignant disease is a frequent relief. We present our experience about papillary thyroid carcinoma as incidental finding in patients – treated surgically – presumably for multinodular goitre(MNG).

Methods: Between January 2000 and March 2008, 359 total thyroidectomies were performed in patients with presumptive MNG. Histological diagnosis in these patients with preoperative diagnosis of benignant disease were reviewed to identify those one with ITC.

Results: Histological examination revealed an ITC in 58 patients(16.15 %). In 25 patients, the tumor size was greater than 1 cm, whereas it exceed 2 cm in 18 patients. The most little size were 0,3 mm. Tumours were multicentric in 10 of the patients. The majority of ITC was represented by microcarcinomas (33 cases = 56,9% of the ITC), but in approximately 31 % of cases the tumour size was greater than 2 cm. All patient with ITC are disease-freedom.

Discussion: Total thyroidectomy in MNG has to be always recommended to avoid the necessity of an early completion thyroidectomy (patients with final diagnosis of unexpected thyroid cancer). A prophylactic neck dissection of the central compartment can be considered for improve locoregional control and possibly reduce morbidity in the long run.

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Incidence of Thyroid Microcarcinoma in Patients with Multinodular Goitre

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Introduction: Papillary thyroid microcarcinoma (PTMC) is a neoplasy measuring less than 1 cm, concordant with the World Health Organization (WHO) hystological classification, and it is the most common variant of thyroid cancer.

We present our experience with PTMC as an incidental finding in patients treated surgically for presumptive multinodular goitre (MNG).

Methods: From January 2000 to March 2008, 359 total thyroidectomies were performed in patients with MNG.

Results: Histological examination revealed 40 (11,1%) patients with PTMC, as an incidental finding. In 3 patients the cancer was multifocal an in 2 of them, neoplasy focus were found in both thyroid lobes, and none presented lymph node metastases. The size range was between 0,3 to 10 mm. All patient with PTMC are disease-freedom.

Discussion: Thyroid microcarcinoma is a slow growing tumor, with a good prognosis and a good disease free survival, but it can also presents with multifocal localization, so that total thyroidectomy has to be considered the best treatment oncologically correct for this tumor.

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Diagnostic Role of Ultrasound-Guided Fine-Needle Aspiration Biopsy (FNAB) in Infracentimetric Thyroid Nodules

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Objectives: US-FNAB is considered one of the most effective diagnostic tools in nodular thyroid disease. The purpose of our study is to verify its validity even for infracentimetric nodules and how FNAB can influence the evaluation and treatment of nodules ≤ 1 cm.

Materials and Methods: From January 2002 to March 2008, 742 patients were undergone US-FNAB of nodules. We excluded retrosternal goitres, multinodular goitres with several nodules showing suspicious ultrasonographic features, and solitary nodules with significant serum calcitonin levels.

Results: Among 742 US-FNAB performed, 81 (10.9%) were on nodules ≤ 1 cm, 12 (14.8%) with range from 4 to 5 mm, and 69 (85%) from 6 to 10 mm. Of 81 nodules, 55 (67.9%) were benign and among them 18 were treated surgically with diagnosis of carcinoma in one case; 13/81 (16%) were not diagnostic (5 between 4 and 5 mm); of these 13, 7 were treated surgically finding one carcinoma; 7/81 (8.6%) showed a follicular proliferation: 5 of them were operated providing 2 papillary and 2 follicular carcinomas; 4/81 (4.9%) were papillary carcinomas confirmed by post-operative diagnosis; 2/81 (2.46%) resulted suspicious revealing one carcinoma after surgery.

Conclusions: Although percentage of "not diagnostic" is still high in nodules ≤ 5 mm, in all other cases sensitivity and specificity of FNAB is similar to nodules > 1 cm; as macrocarcinomas, infracentimetric malignant nodules suggest a surgical aggressive tend including central neck dissection when necessary.

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Minimally Invasive Thyroid Surgery

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Introduction: Endoscopic neck surgery is often considered to be "minimally invasive surgery" in the light of recent technical developments and has potential cosmetic benefits over the conventional operation.

Materials and Methods: We have been using an anterior neck skin lifting method (video-assisted neck surgery or VANS method) originally developed for the endoscopic surgery of thyroid tumours.

Endocrine neck surgery was performed on 139 patients between 1 March 2004 and 15 November 2007. Among them, 49 (36%), endocrine neck operations, including those for malignancy and parathyroid tumours, were performed using the VANS method. Benign thyroid tumours accounted for 90 of the 139 patients, the VANS method being used in 41 (54.4%) of these . With benign tumours, the maximum size resected in our series was 5.5 in diameter.

Discussion: It is still uncertain whether endoscopic thyroid surgery should be classified as minimally invasive surgery, especially considering that it is a time-consuming operation compared with conventional surgery. However, the operating time and amount of bleeding associated with endoscopic thyroid surgery can be reduced as surgeons gain experience. All patients who had received this procedure expressed satisfaction with the cosmetic results. The number of patients who complain of post-operative pain or anterior neck discomfort, such as a feeling of constriction, is also lower with endoscopic surgery than with conventional surgery.

Conclusion: Endoscopic thyroid surgery can be favourably and extensively applied if there is careful selection of patients and if surgeons are skilled in the techniques of endoscopic surgery and conventional endocrine neck surgery.

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Familial Isolated Hyperparathyroidism and HPT-JT Syndrome: Our Experience

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Background: Familial isolated hyperparathiroidism (FIHP) and the HPT associated to jaw tumors (HPT-JT) are rare syndromes characterized by familial hyperparathiroidism with associated extraendocrine tumours. These pathologies following the recognition of the genetic substrate (HRPT2 gene) have assumed a precise individuality. No diagnostic or therapeutic protocols exist. This study was aimed to an analyse these pathologies in order to define the clinical and genetic characteristics and suggest a diagnostic, therapeutic and follow-up protocol.

Patients and Methods: Twelve patients from 2 unrelated families with FIHP and 1 family with HPT-JT were identified. Epidemiological, clinical laboratory and the type of parathyroid involvement data were analysed. MEN 1 gene and RET mutations were excluded; germinal and somatic mutations of the HRPT2 gene were researched. Immunohistochemistry of parafibromin (the biological expression of the HRPT2) were also performed on pathologic and normal parathyroid tissue.

Results: Three unreported germline mutations of HRPT2 were identified. Immunohistochemistry demonstrated the absence of parafibromin at a nuclear level in the affected parathyroid. An uniglandular involvement (benign in 93,4% and malignant in 6,6%) was discovered in all cases. Associated thyroid, uterine and colon tumours were also found.

Conclusion: This study has confirmed the autonomy of these syndromes and the role of the HRPT2 gene and of the parafibromin. Parathyroid involvement in FIHP and hpt-jt is uniglandular, differently from MEN1-associted HPT.

Laparoscopic Surgery

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Placement of 0.5% Bupivacaine-Soaked Tabotamp® in the Gallbladder Bed is Effective for Pain after Laparoscopic Cholecystectomy

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Background: The primary aim of this controlled randomized prospective study (*Registration number to www.clinicaltrials.gov: NCT00599144*) has been the evaluation of effectiveness for pain after laparoscopic cholecystectomy of 0.5% bupivacaine-soaked Tabotamp® placed in the gallbladder bed.

Methods: For this study, 45 patients operated on for elective laparoscopic cholecystectomy were divided into three groups of 15 each: group A (bupivacaine-soaked Tabotamp® kept in gallbladder bed), group B (bupivacaine infiltrated at trocar sites), group C (control group with no use of local anesthetic). Postoperatively, at 6 and 24 hours, the character of pain was noted, and its relief was assessed with visual analog scale (VAS) scoring.

Results: The mean VAS score at 6 h was 29.60±10.92 in group A, 25.86±16.06 in group B and 36.13±16.62 in group C ($p>0.05$). At 24 h was 19.26±15.81, 18.53±12.30 e 20.46±20.08 respectively in group A, B and C ($p>0.05$). The findings showed that 55.56% of the patients had visceral pain, 62.22% experienced parietal, and 44.44% reported shoulder pain after laparoscopic cholecystectomy. The comparison at 6 and 24 h between the three groups showed that only in the group A (bupivacaine-soaked Tabotamp®) both visceral pain and shoulder pain were significantly less ($p< 0.05$). Trocar-site infiltration alone was not significantly effective in relieving the parietal pain. Moreover the use of bupivacaine-soaked Tabotamp® reduce significantly the consumption of analgesic drugs ($p<0.05$).

Conclusions: Both visceral and parietal component are equally involved in the origin of pain after laparoscopic cholecystectomy, while shoulder pain affects tardily, after the attenuation of the other two components. 0.5% bupivacaine-soaked Tabotamp® placed in the gallbladder bed is safe and not expensive (17€), but only provides light advantages for pain after laparoscopic cholecystectomy.

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Laparoscopic Treatment (LT) of Laterale Incisional Hernia (LIH): Preliminary Result and Literature Review

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Introduction: The LIH, a non-midline ventral hernia, is an interesting surgical problem. However, few data are available on this entity. The repair of LIH represents a surgical problem with high complication and failure rates. To present the result of our initianal experience in LT of LIH and.review current knowledge of this entity.

Method: A series of 14 patients who underwent LT using the mesh technique for LIH were reprospectively studied. The demographic data, associated comorbidities, ASA score, postoperative morbidity, length of stay and the recurrence rate were recorded for each patient. The mean follow-up was 70 months (range, 8–110 months).

Results: The most frequent location was sovrapubic, followed by iliac and subcostal. The mesh was secured with metal tacks or resorbable staples. The complications rates is of 21% (3/14 of patients): seroma in 2 patients with sovrapubic hernias and transitory pain in 1 patients with subcostal hernia. The patients had a mean length of hospital stay of 3.8 days. There were no conversions to open surgery, perioperative deats and recurrences.

Conclusions: LIH is a little known entity. From the results of our preliminary experience we can affirm that the LT is reliable and well tolerated for ths pathology; the further validation could derive from a longer follow-up. Future treatment should be individualized in each patient and should be based on common classification of the type of defect to correctly evaluate the results; the LT is a surgically challenging procedure with promising results when using the mesh technique.

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Comparison of Laparoscopic Left Hemicolectomy (LLH) for Colon Cancer (CC) with Laparoscopic Left Hemicolectomy for Benign Colorectal Disease (BCD): Retrospective Analyisis

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Introduction: Minimally invasive surgery was first considered in 1990 for patients undergoing colectomy for CC. The efficacy and safety of laparoscopic colorectal surgery (LCS) have been demonstrated in several well designed trials in recent years: current evidence shows that LCS is associated with a lower incidence of postoperative ileus, lower postoperative pulmonary and wound complication rates, shorter hospital stays and a quicker return to activity than open surgery.

Methods: In this retrospective analisis short-term outcome and anorectal function results after LLH for CC were compared with results after LLH for BCD. 37 patients who underwent LLH were enrolled in the study: 22 for CC and 15 for BCD (diverticulitis or IBD). LLH in patients affected by CC was performed by high ligation of the inferior mesenteric artery.

Results: A questionnaire concerning anorectal disfunction was mailed to patients 6 and 12 months after surgery. Complications were more frequent in the CC group than in the BCD group: overall morbidity rate, diarrhea during the first 6 and 12 postoperative months, and anorectal disfunction (fecal incontinence, inability to discriminate between gas and stool, urgency, tenesmus).

Discussion: The results of this study suggest that LLH is as safe and efficacious as the conventional open technique for CC and BCD. Complications after LLH were more frequent in patients with the tumoral pathology than in the benign disease: the level of ligation of the lower mesenteric artery and damage at the lower mesenteric ganglion could explain the poorer anorectal function outcome in the colon cancer patient.

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Laparoscopic Cholecystectomy in Day Surgery: Our First 120 Cases

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Introduction: The gold standard in the treatment of cholelithiasis (CL) today is represented by the Laparoscopic Cholecystectomy (LC). The advantages over the open method are well known and the short post-operative course is one of the most relevant. In 2004 we started to perform LC in Day Surgery (DS), discharging the patients before 8.00 pm.

Methods: Our protocol for LC in DS includes age up to 65 years, BMI < 35, ASA score I or II and no acute complications of CL. Between June '04 to Jannuary '08, 120 consecutive pts underwent DS LC. They were 47 males and 73 females, age ranging between 15 and 63 years. Pts motivations and home support was also investigated. They were admitted at 07.00 am. A 3-trocar technique was always used. By 2.00 pm a soup is served and pt is allowed to walk. At 4.00 pm serum RBC, total and direct bilirubin, amylase and lipase are checked. At 6.00 pm the patient is discharged.

Result: All the procedures were completed laparoscopically with a mean time of 38 min (18–53), without intra or post op. complications. Only 4 pts (3,33 %) required overnight hospitalization for important PONV.

Discussion: The DS LC is justificated by simplification of the procedure, reduction of management costs even over one-day surgery regimen and also by reduct impact upon pts' lifestyle. Accurate patients selection, physical and psychical, is mandatory.

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New Technology in Laparoscopic Colorectal Surgery: Our Initial Experience with SEAMGUARD (BSG) Bioabsorbable Staple Line Reinforcement for Circular Stapler

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Introduction: At present, laparoscopic colorectal resection is becoming widespread. As in open surgery, anastomotic leakage still represents the major complication and is responsible for serious sepsis, sometimes mortality and a prolonged hospital stay. In the literature the leak rate varies from 1% to more than 30% in rectal resection. Staple line bleeding is another frequent complication. The use of BSG has already been described for lung, bariatric, gastric and, more recently, for colorectal surgery. In our division we used this disposable in laparoscopic gastric surgery with good results. After the introduction of circular BSG, we have performed laparoscopic colorectal anastomosis with this device.

Methods: Between October 2007 and Dicember 2007, we placed the circular BSG in 5 patients undergoing sigmoid (2) and rectal resections (3). All anastomoses were performed laparoscopically. Their integrity was verified by direct vision, inspection of staple "donuts" and air leak test.

Results: The mean follow-up was 9 weeks. No anastomotic leakage and/or bleeding was observed. At 6-week interval, sigmoidoscopy did not show any stenosis.

Conclusions: The early results of our experience with BSG suggest that this device can decrease complication rates but longer follow-up and a larger number of patients are obviously needed to confirm these observations.

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Trattament of Spigelian Hernias with Goretex Dualmesh Corduroy

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Introduction: The Spigelian Hernias (SH) is a rare condition that affects less than 1% of the population with abdominal wall hernias. The hernial orifice is almost always small, with rigid margins, and in a high percentage of cases obstruction or strangulation represent the first clinical manifestations. The treatment of this anatomic defect can be performed by open or laparoscopic hernioplasty. The open approach could require a bigger incision if the identification of the small defect is difficult. In this cases laparoscopy allows to identify and repair the defects faster and easier than open. The intraperitoneal use of GoreTex® Dualmesh Corduroy (GDC) protesis is today in according to litterature safer and efficacy.

Methods: Between January 2006 to January 2008 we performed 13 SH laparoscopic hernioplasty using GDC. There were 8 men and 5 women. The mean age was 47 years. All the mesh were fixed with titanium clips. The mean operative time was 38 minutes and the mean hospital stay was 2,1 days.

Result: No conversion, no intra or postoperative complication occurred. No recurrences, in a minimum of 15 months follow-up, were observed.

Discussion: Laparoscopy, in selected cases and using the adequate meshes, allows an immediate detection and treatment of the wall defects, reducing the post-operative course and the intra and postoperative complications.

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Natural Orifice Translumenal Endoscopic Surgery (NOTES) Tranvaginal Cholecystectomy. Report of Our First Case

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Introduction: NOTES is considered the newest frontier in minimally invasive surgery, using the oropharynx, rectum or vagina as the access to the peritoneal cavity avoiding incisions on the abdominal wall. The advantages of this technique include reduction of postoperative pain, complications of abdominal wall incision, leading to a better aesthetic result with no visible scars.

Methods: A transvaginal Cholecystectomy was performed for the first time in our Surgical Department on March 4th, 2008, we opereted a 41 y.o. woman with symptomatic cholelithiasis. An hybrid technique was used placing 5mm trocar to mantein pneumoperitoneum and to insert harmonic scalpel and clip-applicator. Transvaginal we inserted a 45mm laparoscopic grasper and the colonoscope.

Results: The whole operation took about 60' but the cholecystectomy lasted 10'. The patients was discharged within 24 hours with no pain or vaginal discomfort.

Conclusions: Incision in the vagina had been used for a variety of procedures for decades, and proved safe with no long-term consequences. It may offer earlier benefits than the transgastric route of lack of danger of fistula and peritonitis. Today the indication of NOTES is limited but futher studies regarding instrument

development and physiology of natural orifice surgery are ongoing, possibly bringing solutions for more advanced procedures.

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Risk Factors for Laparoscopic Ventral Hernia Repair Recurrence

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Introduction: Laparoscopic ventral hernia repair is widely used to manage ventral hernias, but predictors of hernia recurrence have been poorly investigated. This retrospective study investigated the influence of common risk factors on hernia recurrence.

Methods: Data from 146 consecutive, unselected patients who underwent laparoscopic ventral hernia repair between 2000 and 2006 were collected. Demographic, clinical and periopeoperative parameters were analysed to identify predictable risk factors for hernia recurrence. Both univariate and multivariate Cox's regression analysis were employed.

Results: The overall recurrence rate was 8% (12 patients) after an average follow-up of 45 months. On univariate analysis, smoking (p=0.01), and previous repair (p<0.00) were significantly different in recurred patients. However, only previous repair was an independent predictor on multivariate Cox's regression analysis (HR 0.096, 95% Cl: 0.025–0.371; p=0.01).

Discussion: LVHR is a safe technique to repair ventral hernias, However, smokers with previous failed repair attempts have a higher risk of recurrence.

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Safety of Laparoscopic Appendicectomy Performed by Residents

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Introduction: Laparoscopic appendicetomy (LA) is becoming routinely performed by Italian surgical residents, but specific outcomes have been poorly investigated, as compared to those carried out by experienced surgeons.

Methods: Between 1999 and 2007, 474 unselected patients underwent surgery for appendicitis in our Division. Of these, 218 (46%) were approached by laparoscopy firstly. Patients operated by Surgical Residents (RS, n°91) were matched with those operated by Experienced Surgeons (ES, n°127). Demographics, perioperative parameters, including conversions and complications were compared among the two groups.

Results: Age, gender and ASA score were all well matched in the two groups. The proportion of urgent operation was higher among RS (86% vs. 72%, p=0.009). The proportion of operations carried out for subacute/incidental or complicated (perforated with abscess) appendicitis was higher among ES, while RS operated more oedhematous/phlegmonous appendicitis (p<0.00). However, the incidence of appendicitis with retrociecal position, drainages left, additional procedures and operative time were very comparable. Conversions to open surgery were more frequent among ES (17% vs. 8%, p=0.04). Postoperative complications, including abscesses, wound infections and other general complications, and length of stay, were also equal.

Discussion: Italian residents have few possibility to gain sufficient skills in complex laparoscopic procedures. However, LA is a safe and feasible operation in the hands of Italian trainees. Interestingly, RS had a lower conversions' rate, probably due to patients' selection.

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Laparoscopic Appendectomy as a Routine Operation for Appendicitis

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Introduction: Laparoscopic appendectomy has become during the last years an operation routinely performed in many surgical departments. A significant number of studies has revealed that laparoscopic appendectomy is a reliable and advantageous technique. The analysis of our cases allows to say that this approach can become common practice for all the surgeons of a surgical unit, in order to perform this operation on all patients even in emergency.

Materials and Methods: From 01/01/05 to 31/12/07 in our Unit we have performed 137 procedures for appendicitis, 105 as emergency and 32 as elective operations: 126 patients were treated with laparoscopic technique and 11 with an "open" approach. Males were 62 and females 75, mean age 24 (6 – 72).

Results: Mean post-operative stay was 3,25 days (1–12 days). In the post-operative period there was no significant complication that required reoperation. In one case we found a peritoneal carcinosis caused by an ovarian cancer, in 6 cases adnexal diseases, in 3 patients Meckel diverticulum; in 2 cases the appendicular abscess was so severe that an ileo-cecal resection was requested.

Discussion: Laparoscopic appendectomy is the first step in laparoscopic training for young surgeons. All 9 surgeons of our equipe are able to perform this procedure that we propose as a routine treatment for appendicitis either in emergency or as elective operation.

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Laparoscopic Total Mesorectal Excision for Cancer of Middle-Lower Rectum: Our Experience

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Background: Actually laparoscopic Total Mesorectal Excision (TME) is performed by surgeons experienced in advanced laparoscopic techniques, with oncologic and surgical outcomes similar to open approach. However, concerns about laparoscopic treatment for rectal cancer are still present with controversial results according to prospective and randomized trials. The aim of this study is to assess the feasibility, safety and outcomes of TME laparoscopically.

Methods: 128 consecutive patients underwent laparoscopic TME for middle-lower rectal cancer in our institution between June 1994 and December 2007. Follow up was performed through clinical evaluation or direct patient contact. The Kaplan-Meier method was employed for survival curves generation.

Results: We performed 128 laparoscopic anterior resection, 15 colo-anal anastomosis for ultra-low rectal cancer, 12 laparoscopic Abdomino-Perineal Resection. Conversion occurred in 3% of cases, in locally advanced tumor. Postoperative mortality and morbidity were respectively 1% and 31.9%, with anastomotic leak of 17.9%. The mean follow-up was 51.8 months (range 12–120). No port-site recurrence was observed. Local recurrence rate was 4,1%, overall survival rate in curatively resections was 70% at 5 years.

Conclusion: Laparoscopic TME is feasible and safe, with surgical and oncologic results at least comparable with conventional surgery.

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Rectal Cancer : 13 Years Results in 189 Cases Operated with Video – Laparoscopic Technique. A Prospective Study

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Background: Laparoscopic resection of the colon-rectum is controversial and any official consensus has defined at present regarding colon-rectal cancer.We report the results of 189 cases of rectal cancer.

Patients and Methods: Between January 1994 and December 2007 we performed 189 rectal resection for cancer, 61 upper, 67 medium and 61 lower rectum. 128 LAR and TME, 15 colo-anal anastomosis, and 12 APR.

Results: The TNM stage division was as follows in 189 cases: Tis 1,5%, stage I 9,9%, stage II 18,3%, stage III 68%, stage IV 2,3%. One case with distal margin invasion requested a second operation for radical surgical treatment. On fixed specimen, the average distal clearance was 3,4 cm and the median of limphnode harvested was 12,8.The median operative time was 350 (range 130–540) minutes. There was one death (0,8%) for an acute miocardial infarction. We experienced 3 intraoperative complications (2,3%): 2 right uretheral lesions and 1 tearing of inferior mesentheric artery; this lesions are repaired laparoscopically in 2 pz. Conversion rate was 4.8% (9/189), mainly for advanced tumor (stage IV), 21 (4%) with symptomatic leakage required a stoma. Pelvic recurrence rate: 3.7% Survival results: 70% at 5 yrs.

Conclusions: The oncological results of mininvasive laparoscopic technique do not differ from those of laparotomy technique.

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The Use of Curved Stapler in Laparoscopic Lower Resection of the Rectum (LRR)

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Introduction: Today in many surgical divisions the resection of the rectum is performed laparoscopically. In this procedure the most difficult part is represented by sectioning of the lower rectum especially in presence of large tumors, narrow male pelvis, and it often requires conversion by a Pfannestiel incision and manual completion of the dissection. We routinely perform LRR by a three to four trocar technique and use for lower rectum section the Contour stapler (CS). Differently from Endo-GIA staplers, this device closes the rectum quite always in a single shot.

Methods: We have experimented an original technique. A 6–7 cm suprapubic midline incision was performed and the CS was placed in abdominal caity through a Lapdisc®. To reduce Gas leak we use a damp lint around the shaft. After the complete preparation of the rectum up to the elevator ani, the stapler is positioned behind the bowel and by simple counter-clokwise motion the rectum is included between the CS jaws.

Result: The technique has been so far used in 28 cases of LRR. 15 patients had undergone previous neo-adjuvant threatment by CHT-RT and in all these cases a "ghost ileostomy" was prepared. No intra or postoperative bleeding occured, only 2 pt. have an anastomotic leaks.

Discussion: This result is very promising and we hope that a modificated design with an circular shaft can semplificate this techniques.

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Laparoscopic Right Hemicolectomy with Caudo-Cranial Dissection. Original Techniques and Result of 94 Consecutive Cases

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Introduction: In many centres laparoscopic right hemicolectomy is usually performed by a medial to lateral dissection. The identification of the correct dissection plane is usually difficult because the 3rd part of the duodenum, an important landmark, cannot be easily identified in fat pts while in slim pts the mesentery of the right flexure is thin and fragile.

Methods: The first surgical step in our technique is identification and section of the origin of the ileo-colic vessels, followed by division the mesentery up to the terminal ileum, which is cutted by EndoGIA stapler. Pulling upwards the terminal ileum the Houston's ligament is opened and a retroperitoneal caudo-cranial dissection of the cecum and ascending colon up to the right flexure is easily performed. After incision of the hepato-gastro-duodenocolic ligament, cranial traction of the specimen allows exposure of the right colic vessels and of the Henle's venous branch. In fat patients, section of the ileocolics vessels can be performed after preparation of the retroperitoneum up to the third part of the duodenum. The ileocolic anastomosis is always performed extracorporeally.

Results: This technique has been used in 94 pts, the average time of operation was 125 min, with no conversions. 4 pts have an anastomotic leak.

Discussion: This technique is feasible, simple and reproducible.

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The Use of Staple Line Reiforcement in Laparoscopic Gastric Surgery: Our Experience with Seamguard

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Introduction: Bioabsorbable Seamguard (BSG) is completely absorbible porous synthetic fibrous structure. This prosthetic device is used as a staple-line reinforcement to minimize the risk of anastomotic leakage and reduce the hemorrage. BSG has been already used with good results in bariatric and thoracic surgery. Laparoscopic gastric surgery main complications are the staple-line leak and/or bleeding.

Methods: Between July 2004 to July 2007 we performed 28 laparoscopic gastric resections using the BSG in 16 males and 12 females with an age ranging from 49 to 86 years. The procedures included 16 gastric wedge resections, 7 partial distal gastrectomies, 5 total gastrectomies.

Results: None intraoperative or perioperative staple line complications were observed. No clinically relevant anastomotic leakage or bleeding were observed during the early postoperative period; in the first 21 patients no stenosis developed at 6 months follow-up. Mean hospital stay was 5.7 days (range 4–8).

Discussion: The use of BSG as a staple-line reinforcement seems safe and effective in preventing anastomotic leakage and bleeding . In literature few studies in porcine model demonstrated that the bursting pressure of the anastomosis is increased of 100% with this device. Low anastomotic complication rate allows hospital stay reduction and may justify the cost of the BSG.

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1,024 Laparoscopic Appendectomies: Data Analysis

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Introduction: Laparoscopy is widely practiced for uncomplicated appendicitis, but its role in the management of complicated appendicitis has not yet been defined. Aim of study is to examine the current indications for laparoscopic appendectomy.

Materials and Methods: From February 1992 to December 2007, 1024 consecutive patients underwent laparoscopic appendectomies in our Department (442 F, 582 M; mean age: 30.2 years, range: 4–84). Surgery was performed by the same group of surgeons with high level of expertise in laparoscopy.

Results: The 39.9% of patients with features of acute appendicitis underwent emergency surgery; in 60.1% of cases the patients underwent elective operation. Mean operative time was 38 min (range 12–95) and mean of hospitalization was 2.5 days (range 1–10). Conversion to open procedure was required for 13 (1.3%) cases, when inflammatory mass in the right iliac fossa was found. Laparoscopy detected appendicitis in 96.5% of cases and no appendicitis in 3.5%. Histology revealed nonperforated, perforated appendicitis and no inflammation in 80.9%, 14.2% and 4.9% respectively. Other pathological findings were observed in 3%. Overall morbidity rate was 2.6%.

Conclusion: Laparoscopy improves diagnostic accuracy for appendicitis and it should be considered as the first-line approach

for all forms of appendectomy when there is an elevated laparoscopic skill.

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Laparoscopic Wedge Resections of Parenchymal Organs: Our Experience with 22 Consecutive Cases

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Introduction: The Laparoscopic wedge resection (LWR) of parenchymal organs (PO) is feasible method of treatment of parenchymal lesions. Bleeding and bile leakage in hepatic wedge resection, are the most common peri and postoperative complications. The improvement of laparoscopic intruments have achived to performe a better hemostasis but it didn't reduced significantely complications rate. Short-term outcome is comparable to that of conventional surgery with the additional benefits derived from minimally invasive therapy.

Methods: Between June 2005 to January 2008, 22 patients with parenchymal lesions underwent to LWR. 16 of these cases were heaptic metastasis of colorectal cancer and 6 were renal cell carcinomas. All parenchymal raw surfaces were treated with fibrine glue alone and in combination with gelatine matrix thrombin or fibrine sponge.

Results: No one conversions were perfomed. Average operative time of surgery was 100 minutes. Mean intraop. blood loss was 220 mL. The overall mean duration of hospital stay was 4,2 days.

Discussion: LWR, seems to be feasible and safe in selected cases of PO lesions. The LWR reduces postoperative pain, peritoneal adhesions, hospital stay and improves cosmetic result. Bleeding and bile leakage remain the most common perioperative complications but its rate can be reduced using advanced laparoscopic instruments and biological devices.

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Surgical Infections (SI) after Laparoscopic Cholecystectomy (LC): Ceftriaxone vs Ceftazidime in Short-Term Antibiotic Prophylaxis

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Introduction: The incidence of SI after LC is reported to be <2%, because of the minimal trauma due to this approach. The need for antibiotic prophylaxis (AP) when performing elective LC may not be as important as it is thought. We report the results of a prospective study of short-term AP in LC, comparing ceftriaxone vs ceftazidime.

Methods: 123 patients randomly placed into 2 groups immediately before LC: A (n = 60) and B (n = 63). Before anesthesia was administered, group A received 1 g i.v. ceftazidime 1 h and group B 1 g i.v. ceftriaxone. In both groups, age, sex, weight, duration of surgery, presence of comorbidity, ASA score, intraoperative gallbladder rupture, episodes of colic within 30 days before surgery, length of postoperative hospital stay, and number of septic complications were recorded. All data were correlated by univariate and multivariate analyses with the onset of septic phenomena.

Results: In group A, 4 cases of wound infection, 2 case of of urinary tract infection were observed; group B, 3 cases of wound infection, 1 case of bronchopneumonia, and 1 cases of urinary tract infection. Comparison of data showed no statistically significant difference between the groups.

Conclusions: In elective LC, AP did not seem to affect the incidence and severity of SI. Ceftriaxone is confirmed as the gold standard in biliary tract surgery, but ceftazidime was equivalent. The umbilicus was the preferred site of infection after the LC. Major complications are usually related to technical pitfalls.

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Laparoscopic Cholecystectomy (LC) in the Elderly Patients (EP): Retropsective Study

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Introduction: Management of biliary disease in the EP has evolved over the last decade. LC is now more commonly performed in this patient population. EP with biliary pathology frequently present with complications of acute disease (biliary pancreatitis, choledocholithiasis, acute cholecystitis). As a result, laparoscopic management in this patient population can frequently be more

challenging than in younger patients. We retrospectively reviewed 67 EP who underwent LC at our institution.

Methods: The patients were divided into 2 groups: A (age 65–79 years; n = 48) and B (age 80–95 years; n = 29). Four-trocar site LC using the open technique were performed in all patients. The demographic data, associated comorbidities, ASA score, post-operative morbidity and length of stay were recorded for each patient.

Results: Advanced age (group B) was associated with a higher mean ASA score and a greater incidence of common bile duct stones, as compared with those of younger age (group A). Mean operative times in group B were 110+/-35 min as compared with 90+/-25 min in group A, a difference that is not significant. The patients of group B had a four-fold higher rate of conversion to open cholecystectomy (3% vs 1%) and a longer mean postoperative hospital stay (3.1 vs 1.7 days). Post-operative complications were more frequent in group B than in patient of group A.

Conclusions: LC in the extremely elderly is safe and well tolerated; however, it is associated with a higher conversion rate, increased morbidity, and a longer hospital stay.

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Role of Laparoscopy in Chronic Abdominal Pain: A Prospective Study on 59 Patients

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Introduction: The role of laparoscopy in chronic abdominal pain (CAP) is well established. In this study we assess the efficacy of laparoscopy in the diagnosis and treatment of CAP.

Materials and Methods: Laparoscopy was performed in 59 patients with CAP. Patients were divided into group A 37 patients with previous abdominal surgery (62.7%); and group B 22 patients without previous abdominal surgery (37.3%).

Patients were assessed after 1, 3 months, then yearly.

Results: Adhesions were lysed in 34 (27 group A, 7 group B, p=0.002), other lesions were identified in 13 cases (4 in group A, 9 in group B); in the remaining 12 cases (6 in group A, 6 in group B) no final diagnosis was reached.

Symptoms improved in 26 patients after the lysis of adhesions (19 group A, 7 group B), in 2 patients that underwent appendicetomy, in 7 patients (63.6%) (3 group A, 4 group B) whose laparoscopy had led to a final diagnosis requiring no concomitant surgery, and also in 6 patients (50%) (5 group A, 1 group B) for whom no final diagnosis was reached. There were 2 complications requiring laparotomy .

Conclusions: Laparoscopy for CAP represents a safe and effective treatment as well as a diagnostic tool. 69.4% of patients benefit from the procedure, also in absence of a diagnosis. The benefit of the laparoscopy otherwise decreased during the follow-up. Many factors and also psychological aspects are involved in CAP.

Phlebology

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Echo-Sclerosis Hemodynamic Conservative (ESEC): A new ambulatory treatment of venous insufficiency

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Introduction: Echo-Sclerosis Hemodynamic Conservative (ESEC) by Bernardini is a mini-invasive, in-office new technique of sclerotherapy that combines the principles of vein hemodynamics and those of ultrasound-guided sclerotherapy.

The originality of ESEC technique is to combine schelotherapy with the conservative and functional approach to venous stasis introduced by Franceschi .

Materials and Methods: The objective of ESEC is the suppression of venous stasis, primary reason of all varicose vein discomforts. This objective is obtained using a functional, conservative strategy that presenves venous drainage to achieve clinic and cosmetic improved outcomes.

ESEC is based on a detailed hemodynamic evalutation of superficial and deep venous systems using Doppler ultrasound equipped with 7.5–13 MHz probe to exactly assess type and location of reflux.

At our institution, over 1400 ESEC procedures have been performed starting from 1989.

Results: All patients have been successfully treated. During the follow-up of 2–14, 34% of cases required a secondary treatment because of hemodynamic or clinical reasons.

Conclusion: ESEC is a valid alternative to the other varicose veins techniques (surgical traditional stripping, radiofrequency ablation, laser, etc.) because able to offer a mini-invasive and easily repeatable treatment for the chronic and progressing varicose desease while ensuring patient comfort and good cosmetic outcome.

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The Biotechnologies in the Treatment of Neuro-Vascular Ulcers of the Lower Limbs – Cultivated Autograft of Skin: Fibroblasts and/or Cheratinocytes –

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Introduction: In Italy, 600,000 patients are affected to ulcers of neuro-vascular origin, 50% of which are represented to venous chronic ulcers, inveterate and painful.

Objective: To verify the results obtained by treating 391 patient affected from ulcers of neuro-vascular origin for a period of 6 years and 10 month.

Materials and Methods: The biotechnologies are based on the biopsy of a small fragment of skin (2–3 cmq). The skin fragments are sent to a specialized laboratory in cellular coltivated membrane, where they are divided into their essential components: dermatocytes and cheratinocytes.

These develop in vitro a layer of tissue, which then will be grafted separately on the surface of the ulcer adequately prepared.

Results: The authors have executed during the last past 5 years and 10 months a clinical experimentation on 391 patients for a total of 867 grafts (389 dermatocytes - 478 cheratinocytes).

A clinical follow-up was perfomed on 307 out of the 391 cases, medially 42.5 months (range 3 months - 6 yrs and 10 months). On the 391 cases treated, we had 88.23 % percent of complete healing (345 ulcers "completely closed"), without any recidive. Data on line with the recent literature, in which is described a percentage of 95% of good clinical results (ulcers partially and completely closed) and stable in the time.

Conclusions: The advantages of this surgical method are of remarkable clinical and social relief: 1 – The proved clinical effectiveness; 2 – The security of the biotechnological procedure; 3 – The long-lasting results in the long term; 4 – A positive relationship between cost and benefits.

We completely agree in asserting that such a procedure is easy and fast in esecution, able to replace the traditional and very more complex methods reported in literature.

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Night Compression Stockings: Preliminary Data

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Introduction: We applied in 18 patients with Chronic Venous Insufficiency (CVI) graduated (18mmHg) or anti-thrombus elastic stockings during night-time. Stockings were well tolerated by patients in the bed, enhanced blood flow velocity and allowed an increase in femoral vein flow (about 138%) persisting >30 minutes after stockings removal as a result of improved venular tone.

Materials and Methods: All the patients (already using elastic stockings) were affected by ankle edema in the evening because of the severity of disease , sedentary lifestyle, type of work activity or use of ineffective stockings.

The small number of cases was due to difficulty in recruiting patients with good compliance and reliability in performing measurements by themselves.

Patients were asked to take away the stockings at the evening and measure the diameter of the ankle at that time and in the following morning. Ankle measurements at the same level were repeated (evening and morning times) after wearing calf elastic stockings during the night. Measurements were recorded and compared.

Results: This preliminary study showed that the use of elastic stockings during the night was efficient for both, patients with mild CVI (CEAP3) in whom edema disappeared with rest and patients with more severe disease (CEAP4–5) who experienced a sizable decrease in ankle edema.

These preliminary results need to be confirmed by larger studies.

Conclusion: Night-time elastic stockings could be useful in decreasing the use of elastic stockings during day and in summer time.

Elastic stockings manufactured with comfortable materials and specifically suited for the night-time should be implemented by industries.

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The Stretching Venous Valvuloplasty: A New Technique

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Many reports show the possibility to restore incompetent venous valves by means of different procedures with positive outcome of 70%. Some procedures reduce the valve diameter by wrapping the valve bulb: these are mainly suitable for deep venous system but didn't show a good performance when applied for the saphenous vein incompetence. These procedures didn't receive large diffusion because of lack of a compliant and effective device.

We present a new technique, that uses a new working principle: the extra-venous traction of the valve wall for stretching the cusps. The aim is to modify the cross section of the vein valve giving an oval shape, with the inter-commissural diameter greater than the previous one. This allows to hold out the cusps free edge and to get them in touch, stopping the backflow and obtaining a restored competence. The final outcome is that the cusps come closer, regain a good reciprocal apposition and will prolapse no more.

The stretching technique makes use of a new extra-venous device, implantable around an incompetent venous valve. It is suitable for the superficial veins as well as for deep veins, but can-

not be used if the cusps are damaged, freezed or not present at ultrasound scanning.

A bench study has been performed showing a good performance of the new technique and the new device. A multicentre clinical trial is needed to verify the safety and efficacy of the proposed technique.

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Colour-Duplex Ultrasound Investigation in Recurrent Varicose Veins: Literature Data and Personal Experience

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There has been long-standing speculation about the mechanism by which veins recur, with poor surgical technique, due to complexity of saphenous femoral junction along with inexeperience of more junior surgeons, historically taking most of the blame. Maybe the real problem is an inadequate pre-operative duplex mapping without focusing the importance of the lower limb haemodynamic. Recently it has demonstrating, comparing CHIVA to Stripping over a long term period, that creating a steady draining system, we have a lower rate of recurrences. Duplex analysis of the recurrences, in the two different groups treated by Stripping or CHIVA allowed us to identify five different haemodynamic patterns of recurrence:

- Type 1 recurrence: sapheno-femoral recurrence.
- Type 2 recurrence: reflux coming from the pelvis, through a venous pathway located or in the groin or in the perineum, with no associated sapheno-femoral reflux.
- Type 3 recurrence: incompetent thigh perforators not present at the time of the first procedure.
- Type 4 recurrence: reflux from the proximal saphenous vein (thigh section) to a varicose tributary.
- Type 5 recurrence: recurrences from varicose veins without any demonstrable escape points or change of compartments.

The maintenance of drainage seems to be a decisive factor in avoiding neo-angiogenesis after varicose vein surgery.

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The Role of Laser in the Treatment of Ulcers of Legs

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Introduction: Venous ulcers of the inferior legs represent the typical complications of the chronic venous insufficiency. Their aetiology remembers the oxydative and metabolic alterations tied up to the presence of toxic substances.

Methods: Therapy foresees some typical protocols that begin with the elimination of the venous reflux improving the outflows and reducing the signs of stasis. The compressive therapy allows then the reduction of the stasis while it is favouring the activities of the venous pumps. Topical medications have shown all of their possibilities increasing the recovery of the skin.

Discussion: Laser energy can help by his typical characteristic of transfer of energy at the ideal wavelength to the stimulation of the collagen. Using an 808 diode laser connected to a rotating scanner it is possible to increase the vascularisation and to stimulate the fund of the ulcer after having eliminated fibrinous layer.

Conclusions: Such therapy doesn't represent the only therapy, but it constitutes one of the more important therapies in the protocols of treatment of these difficult complications, particularly in the skin with sclerodermia.

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The Use of Ultracision in the SEPS Procedure

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Background: Chronic venous insufficiency (CVI) is a progressive disease and a considerable social-health problem with impairement, in the severe stages (C4-C6 according to CEAP classification), of quality of life in affected people. The aim of the surgical treatment is abolishing venous reflux by perforators interruption. To avoid multiple incisions on diseased skin, SEPS has been applied in the treatment of severe CVI. Usually the perforators interruption is carried out with clips.

Our Experience: We perform SEPS with double access using the Space-Maker and, to divide perforators, the Ultracision®. Since April 1999, we treated 160 lower limbs in 153 patients (56 C4, 32 C5 and 72 C6). Only In the first 5 cases we used the clips. At the follow-up (1–124 months): in C4 patients no progression of lypodermatosclerosis and no appearance of ulcers; in C5 patients 2 (6%) recurrences of ulcer; in C6: in 51 pts (71%) complete and lasting healing of the ulcers, in 10 pts (14%) improvement of skin lesions, in 6 pts (8%) no modification, in 5 pts (7%) ulcers recurrence.

Conclusions: SEPS is a safe and effective procedure with early and lasting healing of ulcers. Ultracision, by using mechanical energy, doesn't damage adjacent structures. The mean operative length for Ultracision™-SEPS was 27,2 minutes; the mean operative Clips-SEPS time was 41 minutes. Our experience suggest that the cost of the devices used for the SEPS is largely remunerated by lowering the expense for the comprehensive care of patients.

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Ulcer- X Kit® in the Treatment of Venous Ulcers

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Introduction: Cutaneous ulcers of the lower limbs are the major consequence of the CVI. Elastic-compression represents one of the principal cornerstone of their therapy.

Methods: The study included 30 pat. with 'Ulcer-X kit® versus 30 with bendages. We perform a prospective, randomized, open label clinical multicenter trial study, which compared Ulcer-X kit® versus compression terapy. It's made of two stockings; one must be dressed 24 hours, the second (2° kkl) must be pulled over during the day. The study includes 2 end points: Primary evaluate the clinical praticability, ease to use, effectiveness, safety, cost-efficiency, praticability of ULCER-X® kit as compared with the standard bandage treatment. Secondary evaluate time to complete healing of the ulcer or state of the lesion at 4 months later.

Results: Primary endpoint Ulcer-X kit® was statistically significant about quality of life, tollerability, pain and ease to dress. The medium cost of bandage's materials is € 72 each pat. Secondary endpoint: Ulcer-X kit® healed 83,3 % versus 70% bendages.

Discussion: Optimal compression for venous ulcer therapy must provide: 1)High stiffness producing high pressure peaks during walking; 2) pressure range ≥ 30–40 mmHg; 3) poor loss of pressure after the application; 4) tolerable resting pressure; 5) should stay for one week at least; 6) should be adapted to circumference, edema, walking ability; 7) must be washable and reusable. Ulcer-X kit® satisfy point 2, 3, 4, 5, 6 and 7.

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Hyalosilver Spray®, A Usefull Medication to Use during Re-Epithelializating Phase of Cutaneous Ulcers

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Introduction: Hyalosilver® is a spray medication for topic use which contains Yaluronic Acid (0,2%) and Colloidal Silver (2%). The first is a GAG of the extracellular matrix which improves the natural process of wound healing participating to the formation of granulation tissue. The second has antimicrobial and antibacterial properties, preventing bacterial contamination of the wound.

Methods: In our institute we tested Hyalosilver Spray® in the treatment of cutaneous ulcers of the lower limbs during re-epithelialization phase; wounds not complicated by external infections. Some selected patients used Spray by themselves at home between our hospital dressings.

Results: This product provides a good control of exudates, creating an environment which facilitates the natural process of healing and an effective barrier to microbial penetration. Hyalosilver Spray® remains easily in situ and is not influenced by stretching the edges of the wound.

Discussion: Our study about this product showed good ease of application followed by a simple removal, combined with an excellent ability to heal and control of exogenous bacterial.

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Veloderm®, Our Preliminary Experience in the Treatment of Cutaneous Ulcers

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Introduction: Veloderm® is a biological polimeryc dressing made of cellulose microfibrils. This particular type of cellulose called CRYSTALCELL 77™ is characterized by allow polymerization degree and a high level of crystallinity which enable the product to exploit its performances.

Methods: We have treated in our preliminary experience 10 patients with wounds which involve the loss of the superficial lyers of the skin. Exclusion criteria is the infection of the wound.

Results: Veloderm® adheres to the wound protecting it from germs, reducing pain and creating excellent conditions for the lesion healing. This type of medication must be kept on untill the wound is completely healed. In all patients there was no infection, a good compliance.

Discussion: About our preliminary experience this product has proved ideal for granulation and re-epithelialization of the superficial skin lesions, thanks to its capacity to promote a correct growth of fibroblasts.

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Selective Crossectomy of the Great Saphenous Vein

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Introduction: Our experience wants to keep again the incidences of recidivisms, with 5 years follow-up, on patients operated with technique of selective internal crossectomy, having the importance of collateral veins of junction supplanting the "old" idea that the non radicality is directly proportional of inguinal relapse.

Materials and Methods: From January 2002 to December 2006 are be threated 512 patients (370 F and 142 M). All the patients are been submitted to operation of selective internal crossectomy, in day-surgery and local anaesthesis. Our ambulatory concerned a selected casuistry, with random method, of 150 patients divided in 30 patients for every year considered. Of this

patients group, 102 were females and 48 males, with an average age of about 57. All patients were submitted to a specialistic visit, with anamneses and color doppler ultrasonography venous examination to the lower limbs.

Results: On 150 patients controlled with color doppler ultrasonography has been seen only 1 inguinal relapse case (0,6% of examinated) own to a tactical mistake of operator; in fact to the patient, was left the saphena accessory vein, that leads as common trunk together with the external iliac circumflex vein. This mistake was made not in the surgery, but in the mapping before the operation.

Conclusions: Then, based on the clinic experience done on examined 150 patients, we can observe like the internal crossectomy of selective kind, saving the tributary veins coming from the top, revealed an efficacious therapy, giving results of undoubtable validity.

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Venous Ulcers: Critical Approach to the Surgical Treatments

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First step while dealing with surgical treatments of venous ulcers – rather than focusing on their technical aspects– must be pointing on the role, purposes and indications of the treatment itself.

Our task is therefore treating the venous stasis, the reflux and the collateral anastomosis, right after checking if the loss of substance is determinated by variations of deep circulation, superficial circulation, perforant vessels, or a combined occurring of those.

Surgical options: Ablative Treatments – Conservative Treatments – Reconstructive Treatments.

Approaches: Traditional Surgery – Endoscopic – Endovascular. The main purpose must be the deep and superficial or perforants refluxes correction. In this last case, a selective approach should be run through the choice of incontinent perforants, distinguishing between returning and refluxing vessels, during systole or diastole.

Options: Emodinamic surgery without ablation of saphenous trunk: simple crossectomy or crossectomy with phlebectomy, CHIVA.

- Ablative Threatments: short stripping, long stripping, stripping of the small saphenous vein, EVS, EVLT.
- Ablation of Incompetent Perforator Veins and Varicectomy (Saphenous and Extrasaphenous Collateral branches).
- Venous Reflux treatments:
- Muller's Phlebectomy
- TRIVEX Phlebectomy
- VheliHoS Vein-Occlusion

Only the 8–10 % of the patients shows long reflux affecting the whole saphenous starting from the terminal valve, with venous dilation from inguen to malleolus. That is the reason why a conservative approach can be justified.

In conclusion, it seems to be clear that a single surgical treatment -suitable for every condition- is not yet available.

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Venous Ulcers: Treatment with Sulodexide, Preliminary Report

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Introduction: Authors describe their experience in treatment of venous trophic ulcers of lower limbs with Sulodexide systemic and topic administration. Sulodexide exerts profibrinolitic and antithrombotic effects, thus improving microcirculation, enhancing capillary permeability, decreasing Fibrinogen plasmatic levels: that in fact promotes ulcers recovery by shortening healing processes , as also demonstrated in literature by randomized controlled studies (E.B.M.).

Methods: Authors selected a group of 40 patients with venous trophic ulcers of lower limbs; exclusion criteria were ongoing oral anticoagulant therapy, severe comorbidity, pregnancy. All patients have previously been studied by arterial and venous Eco-Color-Doppler of lower limbs and by coagulation system functionality assessment. Ulcers have been previously measured and treated by local surgical debridement, advanced medications and elastic compression. Patients have been divided into 2 groups: one group of 20 patients has been administered Sulodexide at a dose of 1 ph i.m. once daily for a 14 days period, then 1 capsule twice daily for 2 months; control group of 20 patients was treated only with surgical debridement, advanced medications and elastic compression.

Discussion: Primary endpoint is ulcer healing within a 2 months period, secondary endpoint is healing within 3 months. Preliminary results seem to be encouraging and pull for routinary use of that drug, combined with common therapeutical techniques i.e. advanced medications, elastic compression and prophylactic measures concerning patient lifestyle.

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Laser Treatment of the Small Saphenous Vein: Personal Experience and Comparision with Other Endovascular Techniques and Traditionally Surgery

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Introduction: Thermic laser ablation is an endovascular technique recently developted as an alternative to the traditional surgery (crossectomy and stripping) and to other mininvasive procedures (Radiofrequency and Scleromousse) for the treatment of chronic vein insufficiency (CVI); the role and outcomes of laser therapy in small saphenous vein (SSV) reflux are not yet well defined. This study analises the results of the personal experience and compares them with the available data in letterature.

Materials and Methods: During the period between January 2003 and January 2007, 240 patients (158 female and 46 male) affected by symptomatic CVI underwent laser procedures for a corretive treatment of SSV reflux and of the superficial varicose veins in the calf. In 229 SSV ELVeS (Endo Laser Vein System) with local anestesia was used. Combined tecniques were possible in particular cases.

Results: In all cases the immediate occlusion of the treated vein was obtained and none proximal or distal thrombosis was observed perioperatively; none skin burns or other kind of complications happened. Mean follow-up was about 16 months: during this period 98.7% of treated veins remained occluded; only three cases of distal deep vein thombosis and other three of supeficial thrombosis occurred, successfully treated with Low Molecular Weight Heparin. Exposed to Quol questionary, the most part of the patients defined very well the results of the procedure.

Conclusions: Laser surgery in SSV reflux seems to be an efficient and safe alternative to the traditional surgery and to the other endovascular methods. During our experience we obtained good results in both clinical and esthetic outcomes with low rate of complications during both short and long-term follow up. Further studies are necessary to confirm these data.

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Duplex Ultrasound Changes of the Greater Saphenous Veins after Endosaphenous Laser Occlusion by 808 Nm Wavelength

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Introduction: Endosaphenous laser irradiation is employed in the treatment of greater saphenous vein insufficiency with various methods, with and without surgical interruption. However, its mode of action and indications are not yet clear.

Objective: To verify the mode of action of endosaphenous laser by duplex ultrasound follow up in 44 limbs with the support of histological observations of 8 cases.

Methods: 182 affected limbs were selected with the aid of duplex ultrasound examination (C.E.A.P. 2–6). Saphenofemoral incompetence was subjected to surgical interruption. A Diode 808 nm laser (Eufoton-Trieste, Italy) was employed. A variable pull-back velocity from 1 to 3 mm/sec, power 12 to 15 Watt, energy of approximately 30–40 J/cm, were used. In 8 limbs the venous fragments were studied under light microscopy at 5 m' and after 1 and 2 months. In 44 cases Duplex ultrasound and clinical examination were performed from 7 days to 1,2,6,12 months.

Results: No neovascularization nor thrombus extension were detected at the the groin. Variously organized thrombi containing necrotic inclusions and patent areas were observed into the vein lumen. The progressive decrease of vein diameter and thrombus fibrotic transformation up to the hypotrophic venous disappearance at 12 months were followed up detecting 18.8% not occluded, 22.7% recanalized short segments, 13.6% postoperative phlebitis and 4.5% recurrences. Non-occlusions and phlebitis prevailed in the larger veins ($P<0.01$).

Conclusions: The healing process is based on vein thrombosis, fibrosis and atrophy. Thrombus extension into the deep veins, recurrent reflux by non occlusion or recanalization, should be prevented by saphenofemoral surgical interruption and monitored by Duplex examination. The 808 nm. endosaphenous laser should be preferably applied to veins of less than 10 mm in diameter.

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Recurrent Varicose Veins: Sonography-Based Examination of 126 Patients

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Objective: The objective of this study was to assess the frequency and the EchocolorDoppler patterns of varicose recurrence after ligation of the sapheno-femoral and/or sapheno-popliteal junction with additional stripping of the incompetent saphenous vein in a population of outpatient afferent to our Doppler Ultrasound laboratory.

Methods: From January 2005 to December 2006 we enrolled 126 patients operated years before for great and/or small saphenous vein incompetence. After clinical examination all the patients has been submitted to a Doppler ultrasound scanning. The deep, superficial and perforator vein systems as well as their accessories and tributaries were examined. The site of ligation, the tight, the leg and the popliteal region were carefully screened longitudinal and transversal to search any signs of recurrences. A form based on the CEAP and REVAS classification was used and the data were entered in a customized database.

Results: The mean age of the patients was 65 years and 83% were women. Most of them had visible varicose veins, pain and swelling (73.4%) but only 2.5% had skin damage. Only 10,7% of them were asymptomatic. The sapheno-femoral junction (75.6%) and the perforating veins of the leg (43%) were the areas most often involved by recurrent reflux. At the groin, neovascularization was more frequently observed (43%) than the presence of an incompetent saphenous stump (32.6%).

Conclusions: Varicose veins recurrences can be observed not only after technically incorrect primary procedure but also after operations performed by experienced venous surgeon according to a correct surgical technique.

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Foam Sclerotherapy of Varicose Veins: Consensus Statements and Recommendations

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Introduction: With duplex-guide sclero-therapy and foam sclerotherapy, modified methods of sclerotherapy came into use revitalizing interest in this method of treating varicose vein based on the injection of a sclerosant. Foam is made from detergent-type sclerosants already established as safe and effective in conventional liquid sclerotherapy.

Materials and Methods: A questionnaire covering different areas of foam sclerotherapy was sent to experts who have published or presented data, participated in clinical trials, or otherwise contributed to sclerotherapy with extemporary (self-made) foam. The answers were then analyzed, and topics with converging or divergent opinions were identified. After the meeting, a draft consensus document was generated and sent to all participants for discussion and approval.

Results: The use of sclerosing foam is an appropriate procedure in the therapy of varicose veins. It is a powerful tools in experts hands and is in general more effective than a use of a liquid. In principle all vein calibers are suitable for foam sclerotherapy. Foam gives a better outcome in larger vein calibers and recurrent varicose veins. Controindications for foam sclerotherapy are the same as for classic liquid sclerotherapy.

Conclusion: The final document reflects the experts' opinion with the aim of defining principles for a safe and effective use of sclerosing foam and for its practical application. Foam sclerotherapy allows a skilled practitioner to treat larger veins including saphenous trunks.

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Radiofrequency Endovenous Obliteration of the Saphenous Vein: Own 2-Years Experience

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Introduction: Radiofrequency endovenous obliteration (RFO) of the greater saphenous vein (GSV) has been described as an emerging endovascular alternative to ligation and stripping in the treatment of varicose veins.

Materials and Methods: Between October 2005 and September 2007, thirty-nine limbs in thirty-two patients with symptomatic varicose veins and GSV incompetence were treated with RFO, through an endoluminal catheter inserted in local, tumescent anesthesia. Intraoperative ultrasound was used.

Clinical and ultrasound follow-up was performed at 1 week, and at 3, 12, 24 months.

Discussion: A total of 39 patients with 32 GSVs received RFO of the GSV. In 7 patients (21.8%) bilateral treatment was done.

By ultrasound examination performed immediately after the operation and at 1 week after treatment, complete occlusion of the saphenous vein was obtained in all cases. Duplex scans were available for 26 limbs (66.7%) at 3 months, for 15 (38%) at 12 months and for 7 (17.9%) at 24 months. Thirty-one of treated legs achieved complete closure of the SFJ and GSV. Seven legs had an open GSV without reflux. Only one leg had an open and refluxing GSV. No patient had thermal skin injury, 18 legs had purpura less than 2 weeks and 4 legs an indurated fibrous cord lasting for up to 6 months post-treatment. Only two patients had transient thigh paresthesias.

Conclusions: RFO has been shown to be easily accomplished and efficacious throughout the 24-month-follow-up period, reducing postoperative pain with faster return to normal activities compared with vein stripping.

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Color Duplex-Scan Evaluation of Cross Reflux and Recurrence

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Aims: We evaluated the reflux source of saphenous-femoral cross (OSF) in a group of patients visited to the Phlebological Center of the University of Siena, and registered the presence of groin recurrence after different surgical correction.

Materials and Methods: We performed a color duplex-scan exam evaluating the presence of reflux at the OSF and its source, classifying it in: ostial, derived by collateral vein at the cross area or by a perforating vein at the thigh, so we recovered the kind of surgical correction performed, and the presence of recurrence.

Results: From November 2007 to April 2008 we visited 1265 patients with IVC problems, 77,3% women and 22,7% men. The prevalence of OSF reflux was 41,5% in the female group, while 42,3% in the male group. The source of reflux was in 83,2% ostial, 12,3% derived by collateral vein and 4,5% derived by perforating vein at the thigh. The 35,7% of patients with saphenous pathology performed a surgical correction of reflux.

Conclusion: The first step in the color-duplex scan exam is pointed out the source of saphenous reflux, so to choice the best surgical correction. The post-surgery controls showed a recurrence of saphenectomy about 20%, as reported by Literature. Intesting is the percentage of recurrence after second look with recross sec. Lu technique, which attested around 39%. This could explain a genetic implication.

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Endosaphenous Laser Treatment (TLES) of the Chronic Venous Insufficiency

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Aims: We evaluated the results of endosaphenous laser treatment (TLES) in a group of patients visited to the Phlebological Center of the University of Siena, with chronic venous insufficiency (IVC).

Methods: From December 2001 to March 2008, 188 eligible patients (143 women; mean age 50.5 years, range 22–79) were treated with TLES for venous insufficiency. All patients were symptomatic, and the majority (58%) had class 2 or higher clinical disease (CEAP classification). We have used an endo-laser venous system kit with a 810–980 nm diode.

Results: The great 176 (93,6%), short 5 (2,7%), and accessory 7 (3,7%) saphenous veins were ablated, achieving a 95.3% clinical success rate. Postoperative complications were few (mild induration and ecchymosis) and well tolerated. Major complications have not been detected. After 5 years, the total occlusion rate of saphenous trunks has been 68,5%. Of the 31,4% recanalized target veins, 25,7% were asymptomatic.

Conclusions: This experience with TLES based on preoperative, perioperative and postoperative duplex control, with patients satisfaction at mid/long-term. In terms of reduced postoperative pain, shorter sick leave, a faster resumption of the normal activities, and, in particular, the total absence of DVT, we can conclude that TLES is a good solution for all patients with anatomic and hemodinamic patterns for saphenous vein surgery.

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Crossectomy and Foam Sclerotherapy in the Treatment of the Chronic Venous Insufficiency

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Aims: We evaluated the results of crossectomy and foam-sclerotherapy in a group of patients visited to the Phlebological Center of the University of Siena, with chronic venous insufficiency (IVC).

Methods: From January 2001 to March 2008, 53 eligible patients (40 women; mean age 52 years, range 23–81) were treated with crossectomy and foam-sclerotherapy of distal saphenic log with injections of polidocanol foam, for a total of 63 limbs treated. All patients were symptomatic, and the majority (60%) had class 2 or higher clinical disease (CEAP classification).

Results: The great 19 (30.1%), short 38 (60.3%), and accessory 6 (9.6%) saphenous veins were ablated in the immediate postoperative period. Postoperative complications were few and well tolerated. Deep venous thrombosis (DVT) evaluated with duplex ultrasound it has been taken place in 2 patients (3.2%). After 5 years, the total occlusion rate of saphenous trunks has been 75.6%, 24,4% recanalized and asymptomatic.

Conclusions: This experience with crossectomy and foam-sclerotherapy based on preoperative, and postoperative duplex control. Crossectomy and foam sclerotherapy offers advantages of low cost, quick patient recovery, with patients satisfaction at mid/long-term, aesthetically and functionally; as such, it is an important tool for modern vein treatment.

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Endovenous Laser Therapy to Treat the Internal Saphenous Vein (IVS) Reflux: Our Experience

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Background: EndoVenous Laser Therapy (EVTL) is a mininvasive methods to treat the saphenous veins reflux. We report results of our initial experience.

Methods: In 2006 we have treated with EVTL 48 patients affected with chronic venous insufficiency of the internal saphenous vein. Laser energy was administered endovenusly. Postoperative duplex scanning was made. After operation has been applied to all patients a post-operative elastic compressive stocking.

Results: In the post-operative time every patient had pain on thigh, relieved whit analgesics. Postoperative duplex scanning showed a thrombotic complication in 1 limb (2%), with protrusion of thrombus in the common femoral vein, this patient was underwent to anticoagulation. No pulmonary embolism. Follow-up to 7 days, 30 days, 6 months and 1 year. Stocking has been removed after 7 days. 12 (25%) patients had little haematomas, which disappeared in 8–10 days. We haven't observed any other skin lesions. Occlusion was in 46 (96%) ISV, recanalization occurred in 2 (4%) to 30 days, to 1 year follow-up these results was confirmed.

Conclusions: After treatment whit EVTL, VSI occlusion was observed in 96%, whit correction of haemodynamic flaws and improvement of clinical symptoms. Is important routine postoperative duplex scanning in all patient, to evaluate thrombotic complication, occurred in 1 (2%) case of our experience.

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Ultrasound Duplex Scanning Evaluation of Ascending Thromboflebitis to Decide Emergency Crossectomy

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The ascending thromboflebitis of the internal saphenous vein (ISV) can spread to the deep vein circulation through the saphenous-femoral junction with dramatic risk of pulmonary embolism.

Methods: From 2001 to 2007 we have observed 140 patients with ascending thrombophlebitis of ISV. 119 (85%) IVS was clinical turgid and painful until third medium of tight. Ultrasuound compression positive to 3–5 cm from sapheno-femoral junction in 36 patients (24%) and in 114 patients (76%) about to third medium of tight, no involvement of the sapheno-femoral junction or deep veins. 36 patients with proximal thrombosis were submitted to emergency crossectomy. Intraoperative ultrasound was performed to evaluate the real extension of the thrombus to be sure that thrombus had not reached the femoral vein in the meantime. 114 patients with more distal extension of thrombosis were treated with LMWH, elastic compression and walking.

Results: Duplex scanning showed proximal saphenous thrombosis in 36 (24%) patients, intraoperative hasn't showed further extension of thrombotic process to the femoral vein. Any progression of the thrombus nor clinical evidence for pulmonary embolism occurred to follow up to 7, 30, and 90 days.

Conclusions: Ultrasound duplex scanning in ascending thrombosis is necessary, because it allows us to get precise information about placing and extension of the thrombosis to choose different therapeutic strategies like emergency high ligature of saphenous-femoral junction which represent a safe, simple and efficient procedure to prevent the spreading of the thrombus in proximal and in deep-veins direction.

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Radiofrequency Obliteration to Treat the Great Saphenous Vein Insufficiency: Long-Term Results

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Background: Radiofrequency (RF) ablation of the Great Saphenous Vein (GSV) without high ligation, with thermal heating of the vein wall, represent a mininvasive procedure, has been used an alternative to conventional surgery, to treat the GSV reflux. We report the long-term results of our experience.

Methods: From 2000 to 2007 198 patients/202 GSV were treated whit VNUS Closure System technology. Preoperative ultrasound examination was performed to evaluate saphenous reflux, incompetence of preterminal-valve and competence of terminal-valve. Were also studied saphenous diameter between 5 and 14 mm, vein distance from skin than 5 mm, regular venous caliber and course. Intraoperative ultrasound examination was made to control the catheter position and after procedures to confirm vein occlusion. Clinical and duplex ultrasound follow-up was performed 1-week, 3 and 6 months, by 1 and 2 years until 5 years.

Results: GSV persistent occlusion and reflux-free was documented in 98% at 1 and 6 months, 91% at 1 year, 85% at 2,3,4 and 5 years follow-up. None case thrombosis or thermal injury was observed, parestesia persisting in 1,2% at 1 year and 0,6% at 5 year follow-up.

Conclusion: RF treatment causes permanent closure of GSV, showing lasting over time efficacy, but without the morbidity and longer convalescence associated with conventional surgical vein ligation and stripping.

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Saphenectomy with Junction Preservation: Randomized Study with 5 Years Follow Up"

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Background: The inguinal flush ligation with tributaries ligature far from the femoral vein is the standard procedure to treat varicose veins of the GSV. Recanalization of missed little veins, or previous limphatic reflux or others unknown factors are the origin of the so called "neoangiogenesis" in 50%.

Aim of this study is to show that the inguinal dissection can be avoided in more than 90% of cases.

Methods: 124 varicose legs were randomized in two groups: (A) flush ligation with inguinal dissection (61 cases) and (B) with GSV ligation 2 cm. below the SFJ (61 cases). In all cases saphenectomy was performed (ulktrashiort, short or long) plus extended phlebectomies. Inclusion criteria were: varicose vein disease with SFJ incompetence, normal SSV and absence of other refluxes. All cases were echographically mapped from the same surgeon and digitally recordered.

Results: The follow up included an echo guided study of the groin every year for five yrs. 99% of patients were detected at the end point. Any case who presented inguinal reflux was recordered as positive for recurrence.

Conclusions: In conclusion 122 legs were detected at the end of the study. Previous reports at 12 and 24 months showed no difference between the groups, while actually the difference is significant with 20% recurrence versus 8% of the non crossectomy group.

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Percutaneous Endovenous Laser Thermoablation of Incompetent Saphenous Veins

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Background: Endovascular LASER venous thermoablation allows the abolition of blood reflux in incompetent saphenous veins. Several studies have been published presenting arguable results. We retrospectively evaluated our experience with this technique in a selected population.

Methods: From January 2006 to April 2008 eight hundred patients were operated on for varicose veins. Candidates for LASER venous thermoablation were selected if ideally fit for this technique, because of anatomical, dimensional and functional saphenous vein characteristics.

Results: Seventy-five patients (9,4%) underwent LASER venous thermoablation: 71 (94,6%) with insufficiency of the greater saphenous vein (GSV) and four of the lesser saphenous vein (LSV). Mean age was 48 years; females were 85,3%. Fifty-eight patients (77,3%) belonged to CEAP class C2. The vein was accessed under local anesthesia with exposure of the vessel, for the first 12 cases, and percutaneously in the remaining 61 (83,6%). The ablation was achieved under mild sedation. The procedure was completed successfully in 97,3% and in 2 cases it was converted into a vein stripping. Mean operative time was 32,7 min. All patients could walk 30 minutes after the procedure and then demitted within six hours. No patient referred postoperative pain or discomfort. Patients were controlled at 1 week, 1 month, six months then yearly (mean F. -up = 6,5 mo.). Three asymptomatic segmentary partial recanalizations (4,1%) were observed.

Conclusion: Endovascular LASER venous thermoablation is a quick, safe and effective technique for the treatment of saphenous insufficiency, has a minimal invasiveness and discomfort and a considerably positive effect on social security charge, bringing a fast recovery to normal activities.

General Surgery

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Self-Expandable Metallic Stent (SEMS) for Treatment of Malignant Colorectal Strictures: Our Experience

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Background: Intrinsic obstruction caused by primary or recurrent adenocarcinoma and extrinsic invasion/compression due to pelvic malignancies represent the main causes for malignant colorectal obstruction. Most of the patients with acute or chronic large bowel obstruction are often in poor general condition,facing high risks as surgical candidates. SEMS allow to perform a rapid decompression of colonic obstruction reducing operative procedures of 23% and number of colostomies from 43% to 7%,with a low rate of morbidity and mortality. SEMS are useful as palliation in patient with advanced non-resectable carcinoma or with extremely high surgical risk and as a *bridge to surgery* in those patients with resectable disease (allowing the completion of staging investigation and administration of any neoadjuvant chemo-/radiotherapy.

Methods: From December 2007 to February 2008 in our Unit,two patients underwent colonic stenting:a 80 y.o. man,affected of obstructive sigma neoplasia at IV stage and cardiac and pul-

monary failure,and a 72 y.o. woman with a radiological and histopathological diagnosis of endometrial adenocarcinoma relapse infiltrating the left ureter and the sigma with secondary hydronephrosis and obstructive symptoms.Both patients received WallFlex™colonic stent with a 25 mm stent body and 30 mm proximal flare.The stent's length was 12 cm and working length of the delivery system was 135 cm.Stenting was performed under endoscopic and fluoroscopic guidance.During and at the end of the procedure watersoluble contrast was injected to rule out the occurrence of a perforation.Following clinical and radiological confirmation of decompression.Patients had a plain abdominal radiograph 24–48h later to confirm full expansion and ensure bowel decompression.

Results: In both patients successful decompression,defined as complete relief of bowel obstruction as judged by clinical symptoms and radiographic observation,was achieved.No precocious or posthumous complications were observed.The first patient died 1 month later for disease progression;the second one is undergoing the II CHT cycle.

Conclusions: SEMSs are useful in both intrinsic and extrinsic colorectal malignancies, allowing a rapid decompression and reducing the number of emergency surgical procedures.

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Hepato-Biliary and Pancreatic Surgery at "Annunziata" Hospital in Cosenza: Early Experience

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In 2007, November, at public hospital "Annunziata" in Cosenza, a new Department of Hepato-biliary-pancreatic surgery and Transplant, with a total number of beds equal to eighteen, three of them reserved to transplanted patients. At the moment, about the transplantation activity, waiting for the authorization for liver transplant, we performed nine kidney transplants in the period between 2007, December and 2008 March. Including the previous 94 transplants performed since 1996, we account for a total of 103 kidney transplants. Aim of this paper is to report our early surgical experience in Cosenza in the hepato-biliary-pancreatic surgery field.

Patients: In the period between 2007, November 5 and 2008, March 29 we performed 275 programmed operations of general surgery (included plastic surgery, mammary and proctologic surgery, since there are three specific simple units inside the Department).

Further, forty-six patients undergone hepato-biliary-pancreatic surgery. Mean age was 57,5 yrs (range 36–79). In details, we performed 31 laparoscopic and 3 laparotomic cholecystectomies, 5 duodenocefalopancreasectomy, 3 Roux hepaticodigiunostomy for obstructive jaundice and 23 liver resections (1 associated to cholecystectomy performed in videolaparoscopy, 2 with right colon resection and 2 with left colon resection, for metastatic colon neoplasia, and 1 associated to hepatic-digiunostomy for gallbladder cancer).

The main indication to liver resective surgery has been suggested for both primitive neoplasia on cirrotic and not cirrotic liver and for metastasis.

Results: The major number of operations were represented by hepatic resections. No severe post-operative complications were observed. At the moment the surgical follow-up is too short to allow-us any long-term consideration.

Conclusions: The foundation of a hepato-biliary-pancreatic surgery department in the "Annunziata" hospital represents an absolute innovation not only for the city of Cosenza but for the Calabria region. In fact, no similar structures exist in this region, committed to a such specific activity. Considering the increasing need of treatment of the patients suffering hepato-biliary-pancreatic diseases, particularly tumoral diseases, we believe that this department is bound to further growth, encouraged from promising results obtained since now.

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Diverticolitis Complicated by Aeroportia and Mesenteric-Portal Thrombosis: A Case Report

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Introduction: Colon diverticula are acquired hernias of mucosal and under-mucosal layer through muscular layer originated where the *vasa recta* penetrate the colon wall. In the 95% of cases they are localized in the recto-sigma and the permanence of endogenous bacteria can induce erosions or impairment of mucosal permeability with subsequent bacteria translocation in the blood flow.

Case Report: A 54 yrs old woman, obese (B.M.I. >30) moved from another hospital, was referred to our observation with fever, thrombocytopenia, Blumberg slightly positive in the lower abdominal quadrants and evidence of microscopic lung emboli, as showed by angiographic tomography, and treated with antiaggregant drugs. Negative story for diverticulosis. Four days after the admission, the patient shows severe signs of sepsis and peritoneal sufferance. A second tomography showed a gas-induced distension of Porta vein, just at the confluence between superior mesenteric and lienal vein. The patient underwent Hartman operation with finding of diverticolitis without any evidence of intestinal perforation and bacterial-induced inflammation of inferior mesenteric vein.

We performed a total colon resection for necrosis of colostomy and evidence of ischemic colitis. In the early post-operative period a further tomography showed a complete splenic-portal-mesenteric thrombosis. In the outcome, multi organ failure (MOF) and death.

Conclusions: This is a rare case of diverticolitis complicated by aeroportia, with subsequent splenic-portal-mesenteric thrombosis.

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Whipple Operation Associated to Extended Right Emicolectomy for Neoplastic Infiltration of Middle Colic Vein: A Case Report

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Introduction: In the western countries the pancreatic tumor represents the 5° neoplastic cause of death in adult population after lung, colon, liver and mammary cancer. It affects people aging 35–70 yrs, with a male/female ratio equal to 1,7:1. The 5-yrs survival is about 5% both for delayed diagnosis (due to scarce clinical picture) and high percentage of local relapse and metastasis also after radical surgery.

Case Report: A 62 yrs old man was referred with tomographic diagnosis of "cystic neoplasia of pancreas head". No involvement of vascular tree was showed. After intraoperative lesion evaluation we decide to perform a duodenal and proximal pancreasectomy (Wipple operation). During the isolation of surgical specimen, we found an infiltration of middle colic vein and then a right emicolectomy was required in order to respect the criteria of radical surgery. The histological exam showed "mucillous papillary adenocarcinoma" of the pancreas' head, well differentiated, infiltrating the duodenal muscular layer and involving peripancreatic tissue (pT3-N0-Mx G1). No complication in the post operative outcome.

Conclusions: Despite usually the surgery is not indicated in case of vascular infiltration, we decided to extend the surgical resection rather than perform only a palliative surgery, considering the young age of the patient and the good clinical status in basal conditions.

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Staged Surgery with Enteral Nutrition in Crohn's Disease

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BG: Compared to patients with non inflammatory diseases, serious postoperative complications develop more frequently in CD. They include wound infections anastomotic leakage intrabdominal abscess septicemia and enterocutaneous fistula due to anastomotic breakdown. The increased rate of complications depends on several factors including intestinal obstruction preexisting septic complications impariednutrional status the use of immunosuppressives and longterm high-dose steroid therapy. Therefore one important issue in the management of CD patients is avoid emergent surgery. Although the role of enteral nutrition is controversial, a preoperative several weeks enteral nutrition treatment may allow to withdrawal of immunosuppressives, tapering steroids and improving nutrional status in CD patients. P.M.: Fiftytwo consecutive CD patients were staged for delayed surgery following hospitalitation for complications of CD recurrent intestinal obstruction, abdominal mass fistulas. All patients started enteral nutrition via NG/NJ tube. A semielemetal was used with full regimen enteral nutrition program was reached in eight days and were scheduled for surgery after five/six weeks.

Conclusions: Role of enteral nutrition in the treatment of Acute CD remain unclear, nevertheless, the strategy to stage surgery with preoperative enteral nutrition resulted in few postoperative complications.

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Value of a Protective Stoma (Ileostomy versus Colostomy) in Low Anterior Resections for Rectal Cancer

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Introductions: Anastomotic leakage is a major problem in colorectal surgery and in particolar in operations for low rectal cancer; the present study investigates the question whether a protective stoma (ileo o colo) can reduce the anastomotic leakage rate; we also performed a restospective study to compare the two procedures in a group of patients operated on electively for rectal cancer.

Methods: This retrospective study included 335 patients who underwent curetive surgery from 1999 to 2007 archieved by low (149) and ultra low (186) anterior resection; in this last group, 103 had a loop colostomy and 89 a loop ileostomy to defunction a low anastomosis. The two groups were similar with respect to age, obesity, tumor stage, and timing of closure (2–6 months). 163 stoma were closed. All the stoma-related complications that occurred after construction and after closure of the stoma were recorded.

Results: Symptomatic leakage 8%, subocclusion 0.6%, haemorragia 2.3%, reoperations 0.6%, exitus 1.3%. About stoma, after construction, the morbidity rate was significantly higher following loop colostomy (19%) than after loop ileostomy (14%); after closure the complication rate was significantly higher in the colostomy group (24%) than in the ileostomy group (18%).

Conclusions: The results of this study showed that a diverting stoma does not reduce postoperative anastomotic leak rate; it reduces the otherwise catastrophic effects of an anastomotic leak; in our experience, the stoma-related morbidity were significantly lower after loop ileostomy than after loop colostomy, this suggests

that loop ileostomy is the best procedure for defunctioning colorectal anastomoses electively.

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New Operative Timing in the Acute Cholecystitis . Treatment in Postponed Emergency

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Background: The treatment of acute cholecystitis have been till now universally codified according a timing that indicates the opportunity of an operation within 72 hrs from the out breaking of the symptom or in alternative, postponing the operation in a second moment and in a state of quiescence. The mini-invasive surgery logic has permitted (at least in our experience) to reach an agreement on this "surgical dogma", operating successfully even after 72hrs with benefits to the clinical situation without inflicting any extra risks to the patient.

Study Design: We took into consideration 100 cases of acute cholecystitis under our observation and submitted to each one of them an emergency postponed lapar-cholecystectomia operation followed with histological indagation. We have evaluated the micro morphologic profile of 100 cholecystectomies with an acute clinical diagnosis, and we have considered the technical-mechanical aspect of the traditional surgery compared with the mini-invasive one supported by the fundamental anatomic pathologic contribute and proposed a reformulation of the surgical moment for that pathology.

Results: This technical innovation introduced with the diffusion of the video laparoscopy has revealed to be the possibility to reduce the surface of impact tool on the inflammatory tissue in the measure of 50–80%; such thesis is supported by the famous math rule of the proportionality inverse where given 3 variable.

Only in one case we had to operate because of the accidental partial lesion of the main biliary duct. The average surgical times have been 91,54', the period in bed post operation of 4,7 days with a rate of complications of 1% due to main incomplete biliary lesions. The reason of our operative choice beyond the temporal limit conventially intended is based on the importance of the coagulative act that becomes the main manoeuvre associated to the dissection with tools that have a reduced impact surface. The evaluation of the clinical diagnosis respect the anatomy pathological one has highlighted a discrepancy in particular on the definition of acuteness on the absence of formers with a real prelevance of the clinical on the microscope related to a series of factors often relative to the subjective interpretations of the clinical.

He have used a math formula of the inverse proportion to demonstrate the importance of the technical and time choice. We have proposed a division in 4 classes of the acute phlogosis phenomenon of the cholecystitis in which we have described a multitude number of anatomy-pathology variables observed and described in literature.

Conclusion: The break respect a traditional prudential surgery which considered the limit of 72hrs insuperable to justify the acute cholecystectomy, has been successfully demonstrated in our case study of 100 cholecystectomies operated in video laparoscopy.

We have evaluated the reasons that have allowed the dilatation of that time in security to be attributed both to the method, which is well adjustable to the anatomic obstacles during the running of this morbid form thanks to the accurate visual resolution, and to the fine tools used, which are adjustable to the coagulative dissection in surgery in accordance to the histologic neoangiogenetics.

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Gallstone Ileus

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Introduction: Gallstone ileus is a rare complication of gallstone disease; it represents 1–4% of all intestinal obstruction cases.

The main etiologic mechanism is the presence of a bilio-enteric fistula. Cholecistoenteric fistulae occur in less than 1% of patients with gallstone.

Case Report: An 83 years old woman was admitted complaining acute abdominal pain, vomiting and mechanical obstruction.

She reported a past history of hypertension, recent angina, diverticular disease and cholelithiasis.

A CT-scan reported aerobilia, gastric and duodenum dilatation and a gallstone impacted just after the Treiz ligament. Another CT and a gastroscopy confirmed the diagnosis.

An explorative laparotomy was performed: we found a 4–5 cm gallstone impacted next to the Treiz ligament, then we executed an enterolithotomy.

Discussion: Reisner and Cohen found that the most common gallstone impact locations are the terminal portion of the ileus and the ileo-cecal valve, because of narrow anatomic diameter and little peristaltic activity; yet, the least frequent locations of impact are the jejunum and duodenum before Treiz ligament.

According to literature, enterolithotomy is the most used surgical technique, whereas enterolithotomy associated to cholecistectomy and fistulectomy is indicated only in selected cases.

Clinical presentation depends on impact site and generally includes abdominal pain, nausea and vomiting. In some cases it is possible to have hematemesis due to mucosal erosion.

The gold-standard investigation technique is CT-scan.

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Surgical Options in the Treatment of Gastric Gists

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Introduction: Surgical therapy for gastric GIST should be optimized to achieve a negative pathologic surgical margin, while limiting the extent of gastric resection. Since the various clinical presentation that should exhibit gastric GISTs, this should be an interesting challenge for surgeon. In facts, gastric GISTs should present as small, intraluminal lesions arising from the greater curvature, small pedunculated extraluminal tumors, lesions located near the esophago-gastric junction, or even giant lesions occupying the whole gastric body or the entire abdominal cavity. Furthermore, the malignant potential of these neoplasms remains unknown until a correct pathological examination can be made (and this occur often after surgery).

Methods: The Authors present their personal experience in the treatment of these tumors, focusing on the different surgical options, primarly depending on their presentation: total or subtotal gastrectomy, wedge resections, tumor enucleation, mini-invasive access.

Results: Surgical results, need for adjuvant therapy and survival rates are reported, considering the different malignant potential of each type of neoplasm.

Conclusions: When feasible, surgical R0 resection remain the only curative treatment, while adjuvant treatments (conventional or targeted therapy with use of kit-inhibitors) could be effective in non-resectable or metastatic diseases.

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Pre-Peritoneal Sutureless Polysoft Repair

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Since recurrence rate have been reduced to a few per cent with mesh repairs, outcome research in groin hernia repair has recently focused on chronic pain. Chronic pain adversely affects daily life for 5–10 % of patients.

The laparoscopic approach seems to reduce the risk of chronic pain.

Non-fixation mesh technique may also reduce the risk of chronic pain after open surgery, possibly by reducing nerve damage.

The PolySoft Hernia Patch® (Bard) combines advantages of an open anterior approach and a posterior placement and so Chronic pain can be reduced.

It is a soft polipropilene mesh with a memory ring that, once the patch is placed, helps ensure the patch will spring open and maintain its shape.

The use of Polysoft Hernia Patch® is indicated in indirect L3 and direct M2-M3 (EHS classification).

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Sentinel Node Evaluation in Colon Cancer Resections. Preliminary Results of a National Multicenter Study (SN-Giscor)

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Background: Sentinel node (SN) mapping in colon cancer aims to examine more precisely lymphnodes (LN) with highest metastatic involvement probability. This study shows preliminary results of a prospective ongoing national multicenter study (SN-GISCoR) on SN evaluation in early stage colon cancer.

Method: From Jan. '06 to Feb. '08, 90 patients (46 male) were enrolled. Exclusion criteria were advanced disease, rectal cancer, previous colonic resection. In 57 patients the procedure was performed laparoscopically. Lymphatic mapping was realized by injection of 1–3 ml of Patent Blue V dye (SALF®) subserosally around the tumor. SN were examined with a multi level section method. Immunohistochemistry staining reserved to doubtful cases.

Result: 1952 LN were examined with a median of 20 LN retrieved per patient. SN detection rate was 95.5%. 24 patients (26.6%) had LN metastases and in 7 (29.3%) SN was the only positive LN. There were 4 (16.6%) false negative. In 4 cases (7%) lymphadenectomy was extended because the evidence of SN in a unconventional site. SN mapping accuracy was 92.2% and negative predictive value was 84.2%. Duration of the procedure was 10 min. as average.

Conclusion: Lymphatic mapping during colon resections for cancer is feasible, with high detection rate and high accuracy. This preliminary results encourage the application of SN mapping to improve colon cancer staging.

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Extraintestinal GIST

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Introduction: Stromal tumors growing outside the gastrointestinal tract are rare. They account for less than 10% of the overall group of GISTs.

Materials and Methods: An 81 year-old woman was admitted with hypogastric mass. Her conditions were good, despite a low hemoglobin value (6.6 g/dl). A CT-Scan described a huge ret-

roperitoneal formation (18 cm) displacing bowel, stomach, portal vein and upper mesenteric vessels.

A laparotomy with mass-excision was performed; it was necessary to execute a distal gastric resection and a partial colectomy because of large contact areas with the mass.

Postoperative course was uneventful; 6 months follow-up was negative for recurrence.

The histological examination reported 100% positivity for c-kit and CD-34, focal positivity for smooth muscle actin. Moreover the mass presented a > 10/50 HPF mitoses rate. Specimen border resulted disease-free.

Discussion: Extra-intestinal GISTs are thought to arise from the intestinal outer muscular layer, losing their anatomic connection with the origin point after some time.

Neoplastic cells appear to be similar to Cajal cells, which are known to have pacemaker activity.

Like "classic" GISTs, they always show c-kit positivity and, from a biological point of view, they seem to behave like "normal" GISTs[3].

They are often incidentally detected; the usual clinical presentation is a mass-effect and, sometimes, anemia.

The gold-standard treatment is surgical excision; it's recommended to leave at least 2 cm of free borders, since GISTs show a very low sensibility to radio and chemo-treatments. Lymphadenectomy is not indicated.

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Laparoscopic Total Mesorectal Excision with Intraoperative Radiotherapy

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Background: Intraoperative radiation therapy (IORT) has been used successfully in the treatment of rectal malignancies as an adjuvant therapy to surgery. Indication for its use are locally advanced tumors of the distal rectum and local recurrences.

Methods: We describe a series of 8 patients affected by advanced low rectal cancer. The multimodal treatment included neoadjuvant radiochemotherapy and laparosocpic TME with IORT.

Results: Mean operative time (surgery + irradiation) was 210 minuts (range 180 to 260). Intraoperative boost were applied in the operative room using a mobile linear acceleration (Novac7); collimator was introduce into the abdomen trought sovrapubic minilaparotomy created for specimen extraction. A divertic loop was created in all patients. Patients were discareged in 5–8 postoperative days. No major complication were encountered. Under follow-up we've had 4 asiymptomatic anastomotic failure. Restoration of bowel continuity was in 30–60 days.

Conclusions: IORT is safe and feasibile during laparoscopic surgery for distal rectal cancer.

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I-GBY (Implantable Gastric Bypass): A Novel Experimental Method for Endoluminal Bariatric Treatment of Morbid Obesity

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Background: Bariatric surgery is nowadays the gold standard therapy for Morbid Obesity to achieve a long term weight loss. Despite some disadvantages and limitations as non-reversibility and invasiveness carry the need for development of innovative methods.

Material and Methods: The purpose of our study is to show the preliminary results with the I-GBY, a new totally reversible device and technique for bariatric surgery. It is an experimental procedure in the emerging field of NOTES (Natural Orifice Transluminal Endoscopic Surgery), that combines the skills and techniques of flexible endoscopy with minimally invasive surgery. The I-GBY is an implant connecting the esophagus to a gastrojejunal anastomosis, fully endoscopically created. It consists of a proximal silicone tube reinforced with a polyethylene expandable esophageal stent, a silicone body and a distal tube to be allocated in the anastomized jejunum. Additional sleeves allow gastroscopy and to divert partially or totally the food passage from the natural route. It was tested in ex-vivo and in-vivo animal trials.

Results: The implantable gastric bypass, fixed with a reversible technique, was found in place intact after an observational period of ten days. The implant allowed for a passage of food throughout the duration of the trial without modifying the physiological anatomy of the gastrointestinal tract. Reflux was avoided by an anti-reflux valve placed in the body of the implant. The esophageal and gastrointestinal mucosa were found in good condition at the necropsy.

Conclusions: On the basis of our preliminary experimental results we propose the idea of an implantable gastric bypass as an alternative method for the future treatment of Morbid Obesity.

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The Vector Project – Endoluminal Microrobotic Pill for Active Gastrointestinal Endoscopy

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Introduction: Cancer causes 12 millions of death each years in the world, it is the second leading causes of death in economically developed countries. (1)

Gastrointestinal (GI) cancer are among the most significant killer in Western countries, with colon cancer raging among the top 3 causes of death for both genders. (2)

The colon cancer screening has shown an important reduction of cancer compared with reference population when adenomatous polyps are removed. (3)

The VECTOR project aims at investigating and developing a miniaturised self propelling robotic pill for advanced diagnostic and therapeutic interventions in the entire gastrointestinal tract.

The project involves 19 European and South Korean partners.

It has been substantially funded by the European Commission with an amount of 9.500.000 Euros.

Material and Method: Several prototypes with different specific functions for diagnosis and therapy has been developed and tested in ex- and in-vivo trials.

We performed a number of tests, starting with ex vivo phantom trial, regarding the capability of the capsule to navigate through all the different section of the GI tract.

Later, we experimented our device through in vivo animal trial, and healthy volunteer observational investigation.

Results: The experimental assessment of prototypes has shown that microrobotic total GI endoscopy is feasible in one procedure.

Space creation by liquid ingestion improve the image quality and at the same time it allows capsule movement through changing of test person's position.

On the basis of the preliminary experimental results we may assert that microrobotic smart capsules might enable a new generation of diagnostic and therapeutic endoscopic interventions.

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Clinical Outcome of Primary and Postoperative Visceral Perforations

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Background: Peritonitis secondary to primary and postoperative gut perforation is still one of the commonest surgical emergencies in Italy and is associated with an high risk of morbidity and mortality. The present study examines the incidence and clinical outcome of patients with peritonitis operated on in our Surgical Unit.

Methods: In this retrospective study, 105 patients with peritonitis from visceral perforation (females 51, males 54) operated on between 2001 and 2007 were studied. Several data including clinical presentation, operative findings and postoperative course were analyzed.

Results: In our series we found 55 primary (52%) and 50 postoperative (48%) peritonitis. The main causes of primary peritonitis were: peptic ulcer perforation (13%), neoplasms (6%), diverticular disease (7%), traumatic disease (5%), ischemic disease (7%), foreing bodies (2%), iatrogenic causes (2%), others (10%). The sites of perforation were: stomach-duodenum in 32.5% of the cases, jejunum-ileum in 27.5%, proximal colon in 15% and distal colon in 25%. The overall mortality rate was 27%. An high mortality was observed in gastric and duodenal perforations (31.8%), and a lower mortality in proximal colon perforations (16.7%). Mortality rates in relation to the different causes of perforation were: neoplastic disease (37.5%), postoperative perforation (32.5%), trauma (20%), peptic disease (10%). Age of patients was the most important factor influencing mortality; the mortality rate reached 62.5% in patients over 75 years, but it was only 5.7% in patients younger than 60 years.

Conclusion: Visceral perforations are a frequent occurrence in general surgery. In our experience, about an half of cases were secondary to abdominal surgery and were associated with an high risk of mortality. CT multilayer scan can be particularly useful in addressing the diagnosis and treatment especially in postoperative, traumatic or diverticular perforations. Age of patients is the main factor associated with postoperative mortality.

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Prospective Trial Comparing Milligan-Morgan Haemorroidectomy Performed by Conventional Instrument, Harmonic Scalpel and Ligasuretm: Evaluation of Post Operative Pain and Complications

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Introduction: In western countries at least 50% of population is affected by haemorroids. Milligan-Morgan (MM) haemorroidectomy is the most used technique. This prospective study values postoperative pain, early and late complications and the return to work and daily life.

Methods: The study includes 62 patients. Patients were divided into 3 groups: MM operation (15) with traditional technique, Harmonic Scalpel (HS) haemorroidectomy (27), Ligasure™ haemorroidectomy (L) (20).

The primary outcomes measured pain score (from 0 to 10 for 3 days) and analgesic requirement. Secondary outcomes were operating time, bloodloss, hospital stay, early and late complications.

Results: Postoperative pain score and analgesic requirement was less in HS group (mean 2,5 vs 5 TT and 3,5 L). One patient showed bloodloss (TT). Operative time was less in L group (mean 20 min vs 26,4 min HS and 27 min TT). Hospital stay and late complications were similar in the 3 groups. The number of patients that return to normal activity within the first postoperative week was higher in HS group (37% vs 35% L and 29 % TT).

Conclusions: The use of harmonic scalpel to perform Milligan-Morgan haemorroidectomy compared with conventional instruments and Ligasure™, reduce postoperative pain, time to healing and time to return to normal activity.

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Evaluation of Urinary and Sexual Function in Male Patients after Anterior Resection of the Rectum (ARR) for Rectal Cancer

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Purpose: Male sexual and urinary dysfunctions after ARR are important complications. Total mesorectal excision (TMX) with autonomic nerve-sparing technique has been introduced in order to avoid such complications, preserving oncologic radicality. The aim of this study was to assess safeness of this technique in terms of sexual, urinary and voiding function.

Materials and Methods: We retrospectively compared two homogeneous groups of male patients. The first group (19M) underwent traditional ARR, the second group (11M) ARR with autonomic nerve-sparing technique. Data on postoperative sexual and urinary dysfunction, were obtained after detailed interviews.

Results: 12 patients (63,15%) of the first group developed postoperative impotence while only 3 patients (27%) in the second group treated with nerve-sparing technique showed impotence. In the first group 12 patients (63,15%) developed ejaculatory dysfunction, 3 (27%) in the second group. In the first group 4 (21%) reported urinary incontinence, only 1 (9%) in the nerve-sparing group.

Conclusions: Our data demonstrate a direct relationship between sacrifice of specific nerve structures and consequent urinary or sexual dysfunction. Pelvic plexus preservation is necessary to maintain erectile potency and both, hypogastric and pelvic plexus preservation, are necessary to maintain ejaculation function and orgasm. Nerve preservation does not compromise radicality in TMX. The nerve-sparing technique seems to have good results in terms of morbidity and functional outcome, and should be considered like a standard safety surgical procedure for rectal cancer.

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The Utilization of Transanal Endoscopic Microsurgery (TEM) in the Treatment of Rectal Neoplasms: Our Experience

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Introduction: TEM is nowadays indicated as radical surgical treatment for benign neoplastic lesions of the subperitoneal rectum which are not endoscopically removable. It is also indicated in the treatment of malign neoplasms in case of in situ adenocarcinomas (ADK) or "early colorectal cancer".

Materials and Methods: We operated 30 patients with rectal neoplasm using TEM. At preoperative histological analysis the neoplasms were classified as followes: 1 low grade and 14 moderate/high grade dysplasia adenoma, 1 carcinoid, 5 in situ ADK, 9 T1 ADK. The lesions were situated at 4 to 15 cm from the anal verge. The 15 benign lesions have been treated by mucosectomy while the 15 malign lesions underwent full-thickness excision.

Results: We experienced no complications or conversions to other procedure and no operative mortality. All patients had minimal postoperative pain and rapid functional restore. At postoperative histological examination 3 of 9 T1 ADK were reclassified so in these cases the method was not radical. Two of them resulted to be T2 ADK which were successively subjected to anterior resection and abdominoperineal excision (APE). The third case resulted to be a T3 ADK and the patient refused APE so in this case TEM has to be considered as a palliative procedure. During follow up only one recurrence in the T3 ADK was observed and was not subjected to any further treatment.

Conclusions: Our experience showed TEM to be a safe procedure and that it should be considered as an elective method if there are existing indications. Recently it has been suggested to use TEM in case of T2 N0 ADK after neoadjuvant radiotherapy.

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Comparison of Different Staplers in Low Anterior Resection of the Rectum (LARR)

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Introduction: LARR with double stapler technique has become a widely diffused method. Several staplers are available for section of the rectum but not all of them are of easy handling in a small space like the pelvis. The aim of this study was to compare the results obtained during the use of 3 different kinds of staplers for rectal section.

Materials and Methods: In this retrospective study we included 48 patients (36M,12F), who between 2002 and 2007 underwent LARR with total mesorectal excision for adenocarcinoma. In all cases the section of the rectum was performed at the level of the pelvic floor. In 21 cases we used the Contour™ (Ethicon) stapler, in 15 Roticulator™ (Auto Suture) and in 12 Proximate™ Linear Stapler (Ethicon). In all cases the colorectal anastomosis was performed with CEEA™ (Auto Suture). We compared the results regarding anastomotik leakage (AL), using one of the three different staplers.

Results: We did not observe any intraoperative complication. During the immediate postoperative period we reoperated 16,6% (n2) of the patients in Proximate™ group, while respectively 6,6% (n1) and 0% of the patients in Roticulator™ and Contour™ group needed a reoperation for AL. Furthermore we observed 3 other cases of AL, one for each stapler used, which were treated conservatively.

Conclusions: The exact execution of rectal section is mandatory for a safe colorectal anastomosis with circular stapler. All staplers used guarantied satisfactory results, but in our experience Contour™ is of easier handling especially in patients with small pelvis, thus it might reduce AL although we do not have significant statistical data.

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Adenomatosi

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We report the case of a 40 year-old female with gallstones, duodenal ulcer and a history of 15 years of oral contraception evaluated for further diagnosis of multiple focal liver lesions (bilobar, > 10 lesions); laboratory findings were normal. Diagnostic procedures showed no primary malignancy as possible reason for metastasis and all further imaging procedures did not help in diagnosis and lead to inconsistent results. Percutaneous liver core-biopsy showed aspecific liver steatosis. Diagnostic laparoscopy with cholecystectomy and wedge resection of 2nd liver segment revealed liver adenomatosis. Liver adenomatosis is a rare clinical entity with the same features of isolated liver adenoma but with multiple lesions and a definite risk for hemorrhage due to rupture and malignant transformation. This case shows that there is no need to use different methods of medical imaging redundantly. A total resection of one lesion is generally necessary to characterize the lesion and a diagnostic laparoscopy should therefore be anticipated in case of negative or inconclusive percutaneous core-biopsy. Further management depends on the number, size and location of the lesions, going from close follow-up to orthotopic liver transplantation.

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Successful Treatment of Extensive Splanchnic Arterial and Portal Vein Thrombosis Associated with Ulcerative Colitis

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Arterial thrombosis of the splanchnic region associated with IBD is a very rare event, and may represent a challenging complication since it tends to be misinterpreted. We present the case of 62-year-old female with pancolonic ulcerative colitis complicated by an extensive arterial thrombosis involving the aorta, the celiac trunk, the hepatic, gastric and splenic arteries, the superior mesenteric artery (SMA), the portal and the splenic veins. The therapeutic strategy was the following: the patient underwent selective SMA angiogram showing a thrombus starting at the origin and extending 8 cm into the SMA and into two ileal branches. A catheter was left in the SMA and tissue plasminogen activator (TPA) was started with a 4 mg bolus followed by a 1mg/hour infusion. A repeat angiogram after 12 hours of TPA showed complete dissolution of the SMA thrombosis including the terminal ileal branches. The patient subsequently underwent total proctocolectomy and ileostomy, splenectomy and distal pancreatectomy. The patient recovered and she was discharged to a rehabilitation center on oral anticoagulation therapy. The treatment of our patient was ultimately successful, however, different treatment options could have been possible. For this reason, we reviewed the literature on arterial thrombosis of the splanchnic region associated with IBD.

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Laparoscopic Living Donor Nephrectomy

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Laparoscopic living donor nephrectomy is now the preferred approach for living donor renal transplantation. A 46 years old female admitted to the hospital to donate the left kidney to her husband, who suffering from chronic renal failure due to started dialysis in the next few months . Chest X-ray, abdominal CT scan and routine blood test did not demonstrate any concomitant diseases or anatomical abnormalities. She was submitted to psychological evaluation, that did not show any contraindications to donation. The patient was placed in right lateral decubitus and four trocars were used. The ureter and gonadic vessels where isolated and up to the bladder. Isolation and ligature of the left adrenal vein was carried out after partial spleen mobilization. The left renal vein and artery were fully isolated; the kidney was then fully mobilized by detaching the Gerota's fascia. At this point 5 cm sovra-pubic incision was performed and a large retrieval bag inserted. The left gonadic vessels and ureter were clipped and divided; the kidney was "pre"-inserted into the bag and only at this point the artery and vein were divided by means of Endo-Gia with vascular load. The kind was quickly removed and placed in ice and conservative solution, to be prepared for the transplant: total warm ischemia time was 150 seconds. Postoperative course was regular uneventful and patient was on postoperative day 4.

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Treatment of Left Colonic Acute Malignant Obstruction with Self –Expandable Metal Stents: Personal Experience

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Background: Acute obstruction is a frequent complication of left-sided colonic neoplasm. Emergency surgery in these cases carries high morbidity and mortality and requires a 2-steps procedure, including colostomy positioning . In this study we report our recent experience, to evaluate the effectiveness and safety of a self expanding metal stent (SEMS) both as a bridge to surgery or a temporary or definitive palliation, in the treatment of left-sided malignant colorectal obstruction.

Material and Methods: From June 2007 to February 2008, 8 consecutive patients with malignant colorectal obstruction located in the left colon underwent the positioning of SEMS.

Main outcome measures were the success rate in endoluminal stent placement and the efficacy in decompressing the obstruction avoiding colostomy .

Results: Successful stent placement was obtained in all patients, achieving immediate decompression of their obstruction. We do not observe morbidity or mortality due to stent placement.

Among the treated patient the SEMS positioning was the definitive palliative treatment in two cases with advanced metastatic disease and critical conditions: one died at one month for liver insufficiency. In one case, a patient with liver metastasis, SEMS positioning represented a temporary palliative treatment, that resolving obstruction, avoided colostomy and allowed neoadiuvant chemotherapy and curative surgery. In the others five cases the SEMS positioninig was a bridge to elective surgery meanly at 12 days after stent placement.

Conclusion: In our experience SEMS placement is safe, effective and should be considered as initial non operative management in all patients seen with malignant left sided large bowel obstruction in absence of peritonitis.

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Role of Fecal Diversion in the Surgical Managment of Fournier Gangrene: Our Experience and Litterature Review

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Purpose of our work, is to determine and standardize role of fecal diversion in the treatment of Fournier's Gangrene. We report our results on treating two cases of Fournier's Gangrene by using colostomy along with open drainage, compared to a Literature review of the late 10 years. The patients observed had at presentation symptoms of severe septic shock requiring resuscitation, associated to the evidence on local examination of remarkable swelling , redness and sloughing extended from the genitalia area to the perianal area and the upper thigh.

Both were treated after resuscitation in emergency with incision, debridement and drainage of all necrotic tissue, associated with loop colostomy. Postoperative treatment included daily cleaning of the open wound and intravenous infusion of broad spectrum antibiotics. Mean at 40 days from primary surgery, both patients resolved the sepsis and underwent complete recovery of the Gangrene. Subsequently patients were submitted to plastic surgery, to reconstruct the cutaneous defect of the perineal area and genitalia, and to colostomy closure, and successfully discarged.

Fournier's Gangrene is still a severe disease, with high mortality rate: early recognition of the disease and aggressive surgical treatment are the mainstay of the management, to improve wound healing and increase patients survival, but a standardization in

treatment lack. Literature review suggest that colostomy creation is debated and not considered a standard. In our experience early creation of diverting colostomy appears to favour survival and must be recommended as standard treatment of Fournier's Gangrene extended from the genitalia to the perianal area.

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Role of Hyaluronic Acid and Polypropilene Mesh in the Prevention of Peritoneal Adhesions in Ventral Hernia Repair. Experimental Study

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Purpose: The aim of this study was to investigate the effects of hyaluronic acid on the prevention of postoperative peritoneal adhesion in ventral hernia repair.

Methods: Forty pigs were inclused in this study and divided in four groups. In the first group a polypropylene mesh was placed intraperitoneally while in the second group the mesh was impregnated on the peritoneous face with hyaluronic acid. In the third group a Hertra 0 mesh was placed intraperitoneally and in the fourth group the Hertra 0 mesh was impregnated on the peritoneous face with hyaluronic acid. After 3 and 6 months the animals were reoperated on the assess quantity and quality of the adhesions with the modified clinical Diamond score and with the hystologic fibronectin study about prosthetic fibrosis.

Results: There were fewer intraperitoneal adhesions and they were more labile in the case of Hertra 0 mesh and in the group with hyaluronic acid, especially in the control after 6 months. There was no modification about mesh diameter in the Hertra 0 group.

Conclusions: Hertra 0 mesh and hyaluronic acid reduces both quantity and consistency of adhesions and keeps good stability . Reduced costs of this solution offer interesting clinical applications.

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A Case of Unsuspected Crohn's Disease in Severe Diverticulitis Complicated by Sigmoido-Cecal Fistula Treated by Laparoscopy

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A 48 year old man complained 2 weeks watery diarrhoea, weakness and fever associated to moderated abdominal pain. At admission abdominal X-ray showed a distended colon, associated to several air-fluid levels at the cecum and small bowel. Routine blood tests demonstrated leucocytosis (16900/mm3). The patient was fastened, a naso-gastric tube inserted and total parenteral nutrition started. US and CT-scan demonstrated the presence of diverticular disease and of an abscess of the sigmoid colon. Emergency laparoscopy was carried out and the presence of para-colic abscess associated to sigmoid cecal fistula was revealed. Laparoscopic left hemicolectomy and ileo-cecal resection, with ileo-colic anastomosis performed through the mini-laparotomy were completed. . The final pathological findings revealed the presence of multiple diverticula, complicated by perforated acute diverticulitis and Crohn's disease. The post-operative course was unremarkable and the patient was discharged after eight days. Laparoscopy is now considered the treatment of choice for diverticular disease and in selected cases also in acute settings. Simultaneous presence of acute diverticulitis and Crohn's disease is extremely rare and our experience demonstrated that they can be safely treated by minimally invasive approach.

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Self-Expanding Metal Stents for Colorectal Malignant Ostruction, A Single Center Experience

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Introduction: Acute left-side colonic obstruction is a surgical emergency whose management is controversial. Colonic stents potentially offer effective palliation for those with bowel obstruction attributable to incurable malignancy, and a "bridge to surgery" for those in whom emergency surgery would necessitate a stoma.

Methods: All cases of colonic stent insertion occurring between 2005 and 2007 for an obstructing malignant lesion of the left-sided colon or rectum were prospectively collected.

Results: During the study period, 26 patients (11 men and 15 woman, with a mean age of 70, range 31–94 years) with malignant obstruction underwent placement of SEMS. In 23 patients the stents were placed as a "bridge to surgery", whereas

in 3 patients the stents were placed for palliation. Technical success was achieved in all patients; clinical success, in 23 (88.5%) patients. In the palliation group no complication was reported. In the "bridge to surgery" group complications occurred in 3 of 23 patients (13 percent): stent migration in one patient and perforation in the other two. The three perforations that occurred during stent placement were retreated by two emergency Hartmann operation and one subtotal colectomy. All underwent elective single-stage operations with no death.

Conclusion: The use of SEMS in malignant colonic obstruction is a safe and effective procedure with low mortality and morbility.

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Locally Advanced Rectal Cancer (LARC): from Heald to Heal? A Single Center Experience

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Aim: Neoadjuvant chemoradiation therapy (CRT) is dramatically changing surgical approach to locally advanced rectal cancer (LARC). The purpose of this study is to evaluate these changes and outcomes in our experience.

Methods: Sixty-eight consecutive LARC patients (29 males and 39 females, median age 63 ys) were treated by preoperative CRT plus surgery from January 1st 2000 to December 31st 2006. Medical comorbidity, surgery, morbidity, mortality and histological outcomes, including local recurrence, distant metastasis, pathological response rate, disease-specific, overall and disease-free survival were here analyzed. Statistical analysis was performed using χ^2, student test, Kaplan–Meier curves and Cox models for survival analysis.

Results: A total of 53 low anterior resections, 11 abdominoperineal resections, 3 Hartmann procedures and 1 local excision were performed. The overall surgical morbidity rate was 23.5%; 6 pts (8.8%) showed an anastomotic leakage. The postoperative mortality rate was 2.9% (2 pts). Pathological results to CRT showed TRG1 (pCR) on 16 pts (23.5%). Five-year disease-specific, overall and disease-free survival rates were 83.3%, 82.0% and 79.1%, respectively. The recurrence rate was 13.2% (9 pts). On multivariate analysis nodal downstaging (HR 0.17; CI 95%: 0.03–0.93; p=0.04) resulted as significantly valuable for long-term survival.

Conclusions: Although the excellent outcomes after neoadjuvant CRT, surgery still remains the standard of care in LARC patients. Nevertheless, in the next future both bio-molecular markers and imaging techniques as MRI and PET-CT might help us to predict those complete response patients to be submitted to either local excision or non-operative treatment.

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Utilization of F.A.S.T. Ultrasonography for the Trauma Patient

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Introduction: Focused Assessment with Sonography for Trauma (F.A.S.T.) has now become an extension of the physical examination of the trauma patient.

Is a rapid bedside examination obtained in the emergency room , is an adjunct to the ATLS primary survey and therefore follows the performance of the ABCs as suggested by the guide lines of the Advaced Trauma Life Support of the American College of Surgeons.

Matherials and Methods: In our department of emergency from January 2007 till January 2008, we have evaluated with the F.A.S.T. ultrasonography 43 injuried patients (mean age 48 years old, 20 female patients, 23 male patients) with closed abdominal trauma.

Standard FAST assessment has been performed using the ESAOTE Mylab 50 machine with a curvilinear 3 – 5 Mhz probe.

The normotensive patients has been evaluated also with a CT scan (38 patients 18 female and 20 male) and the other with a laparoscopic and laparotomic view (5 patients, 2 female and 3 male).

Results: The F.A.S.T. evaluation has been positive in 8 patients and negative in the other 35 patients. The sensibility, specificity and accurancy has been respectively 75%, 97.6%, and 93.1%.

A strictly correlation could be seen between F.A.S.T., laparoscopy or Laparotomy and CT exams ($p<0.05$).

Conclusions: F.A.S.T. examinations has become a fundamental step in the evaluation of the trauma patients. Performed in the trauma room by properly trained and credentialed staff, it allows the timely diagnosis of potentially life-threatening haemorrhage and is a decision-making tool to help determine the need for transfer to the operating room.

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Indications, Techniques and Limits of Liver Hanging Maneuver: Beaujon Experience

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Liver hanging maneuver (HM) was firstly described by Belghiti et al to facilitate anterior approach in major hepatectomies. It consists in passing a tape along the avascular space between liver and cava vein and suspending the liver during parenchymal transection.

Since its publication many technical variation were described and actually it can be utilized for most of liver resections and during orthotopic and living donor liver transplantation. The anterior approach avoids some risks due to liver mobilization: bleeding, tumor manipulation and hemodinamic instability. HM combined with this technique allows vascular control at the deeper parenchymal plane and guides the direction of anatomic parenchymal transection.

The blind retrohepatic dissection required by HM has been proved to be safe by several anatomic studies and the only absolute contraindication for this maneuver is tumor infiltration to the retrohepatic avascular space.

We report our experience of more than 250 MH performed during the last 8 years. This maneuver resulted feasible in 94% of cases with only 4% of minor bleeding stopped spontaneously. Cirrhosis, large tumor, preoperative radiologic treatments did not influence its feasibility.

According to our experience, HM is easily achievable without risk of the major bleeding during the retrohepatic dissection.

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Stapled Transanal Rectal Resection (STARR) in the Treatment of the Obstructed Defecation Syndrome (ODS): Our Experience with TRANSTAR

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Introduction: Obstructed defaecation syndrome occurs in about 7% of adult population, especially in women on fifty years of age. ODS is related to pelvic floor dysfunction, functional outlet obstruction (lock of relaxation of pelvic floor muscles), mechanical outlet obstruction (rectal intussusception, external prolapse and enterocele) and dissipation of force vector (rectocele, discending perineum syndrome and/or total rectal prolapse). Today the introduction of a new stapler the CONTOUR TRANSTAR has led to a new approach of ODS.

Methods: From June 2007 to January 2008 we performed 47 consecutive STARR with Transtar stapler for ODS. All pts. were evaluated with RX defechography and anorectal manometry. Eight patients had undergone to preoperative pelvic floor rehabilitation with biofeedback.

Results: Symptom improvement was observed in all cases. 74% of the pts. reduced the laxatives and enema use. Digitation was not any longer necessary in all women. The main complications included 7 initial incontinence, 2 persistent pelvic pain, 1 anastomotic stenosis and 1 rectovaginal fistula that required surgical repair without colostomy.

Conclusions: The TRANSTAR procedure seems to be the ideal treatment for ODS when the rectal prolapse with recto-rectalis or recto-anal intussusception are present. Preoperatory study including RX defechography and anorectal manometry are mandatory.

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Sentinel Node Positivity Rates with and Without Frozen Section for Breast Cancer

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Introduction: Sentinel lymph node biopsy (SLNB) is the procedure of choice to detect breast cancer axillary metastases.

Intraoperative sentinel lymph node (SLN) examination by frozen section (FS) minimizes delayed axillary dissections. But FS can under diagnose small metastases.

This study was designed to assess the nodal positivity rates between SLNs undergoing FS analysis compared with those SLNs undergoing permanent section (PS) only.

Methods: We performed a study in 202 patients with invasive breast cancer undergoing SLNB from January 2006 to November 2007.

We calculated the frequency of node positivity among SLNB subjected to both FS and PS versus PS alone.

Results: A total of 101 patients underwent FS and PS of their SLNB, whereas only PS was performed in 81 patients.

Of the 202 patients in the study, 51 patients (25,2%) had a SLNB positive for metastases.

Of 101 patients underwent to FS and PS, 23 patients (19%) had a SLNB positive to FS, whereas 13 patients had a SLNB positive for metastases to next PS. The 23 patients with SLNB positive for metastases underwent complete axillary dissection during the same surgery.

Of the 81 patients who underwent PS alone, 15 (18,5%) had a SLNB positive. These patients underwent axillary dissection in a second operation.

Conclusions: Although FS may have a lower sensitivity for detecting metastases compared with next PS, intraoperative FS offers the advantage of less delayed axillary dissection.

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Pressure Ulcers in Neurological Chronic Patients: Our Experience

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Introduction: Pressure ulcers are a common complication of neurological chronic diseases. They can lead to medically sig-

nificant problems such as infections and have high surgery costs, with a hospitalisation rate comprised between 3% and 12% verificare. We examine the development of pressure ulcers in adults in a Neurological Rehabilitation Unit.

Methods: Between January 2006 and June 2007 we followed up 23 patients with: ictus (13 cases), medullar tumours (5 cases), meningeal tumours (3 cases), bullet medullar lesion (1 case), and tetraplegia (1 case). At the first evaluation, according to Shea classification, the wounds were: stage I (4 patients), stage II (3 patients), stage III (15 patients), and stage IV (1 patient). The average hospitalization time was 168 days. The treatment provided was: change of decubitus every 4–6 hours (stage I); irrigation with physiological solution and application of hydro-colloidal medications (stage II); surgical or enzymatic debridement (stage III).

Results: We observed: an immediate improvement of the clinical condition in the lesions at stage I; the complete recovery in a medium time of 18 days in the ulcers at stage II and of 54 days in14 patients with lesions at stage III. Two patients, 1 at stage III and 1 at stage IV, needed skin grafts.

Conclusion: In neurological chronic patients it is essential to evaluate: cause of morbidity, immobility, co-morbid medical conditions, and prior history of ulcers, hygienic-alimentary factors, age and stage of the ulcers. It is important to try appropriate treatment. The treatment provided reduced recovery and hospitalization time and costs.

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Diabetic Foot: Unsuitable Admission to Emergency Care Unit

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Introduction: The prevalence of diabetes is increasing particularly in the developing world. It has a significant impact on the medical costs (12–15% of health care resources). The diabetic foot is one of the most devastating chronic complications and its management remains a problem. Often diabetic foot patients are admitted in the Emergency Care Unit, in an unsuitable way.

Methods: The study involved 13 diabetic foot patients (11 males and 2 females), admitted to our Emergency Care Unit between January 2007 and November 2007. The mean patient age was 70 years and the mean glycaemic level was 199 mg/dl. Ten of them had ulcerative lesions in heel seats and in front part of the foot; in three cases they had: necrosis of the II finger on the right foot, eschar of the III and IV finger on the right foot and gangrene on left leg.

Results: The admission to hospital was necessary in 6 cases (4 in Internal Medicine Unit and 2 in General Surgery). The patients who did not have an emergency admission were discharged and addressed towards surgical or diabetes structures.

Conclusions: The sectorial organization of our healthcare system induces patients to address to the emergency services in an independent way, because no collaborative care protocols between the general doctor and diabetes services exist. This leads to unsuitable admissions, with increasing costs for the healthcare system. A staged diabetes foot management program significantly reduced emergency department access and hospital utilization in a public hospital.

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Quality of Life and Socioeconomic Variables Before and after Kidney Transplantation: Results from a Longitudinal Study

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Introduction: In the last decade, quality of life and patient satisfaction have been judged as important indicators of quality of medical care. Recently advances in renal transplantation have increased dramatically. The major goal of transplantation is the achievement of the maximum quality and quality of life, whilst minimizing the costs of care.

Materials and Methods: This study was conduced from June 2007 to January 2008. We investigated a selected et of socioeconomic variables and quality of life in 75 kidney transplant recipients admitted to and followed up at the department of nephrology in the province of Messina (Italy). An evaluation questionnaire, consisted of 30 questions, was sent to all patients (46 were male and 29 female, mean age 53.3). In 72 cases the transplant was due to renal insufficiency (acute and chronic glomerulonephritis: 14, hypertension: 11, systemic disease: 31, polycystic disease: 12, nephritis: 4), in 3 cases to obstructive uropathies. The hemodialytic treatment before transplant ranged between 1–156 months (Mean 48). Comorbidity was present in 62 patients and was: hypertension, diabetes, thyreopathy, arrhythmia and infections of B and C viruses. Symptoms of depression were referred as frequently in 14.7% and sporadic in 25.3% during hemodialysis.

Results and Conclusion: Benefits of kidney transplantation were documented by means of satisfaction and quality of life assessments in 63% of male and 57 % of female. In our evaluation 52% of male patients and 44% of female are engaged in popularization of the donation growing.

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Pancreatic Cystic Tumors: A Single Institution Series

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Introduction: Pancreatic cystic tumors comprise 5–10 % of all exocrine pancreatic tumors. This is a very heterogeneous group of tumors with an extremely diverse clinical behaviour, but characterized by the common feature of a micro- macrocystic pathological pattern.

Materials and Methods: From 1999 to 2007 we observed 30 cases of pancreatic cystic tumors. Among them 19 were submitted to surgery while 11 have been introduced to a strict follow-up schedule.

Pathology reports of the resected ones were as follows: 5 CAS, 1 serous cystoadenocarcinoma, 3 CAM, 6 mucinous cystoadenocarcinoma, 3 IPMN and 1 solid pseudopapillary tumor.

The majority of them (10) was located in the body-tail of pancreas, 7 cases were in the head and only 2 involved the entire gland. We performed a duodenocephalopancreatectomy in 6 cases, a distal spleno-pancreatectomy in 7, a spleen sparing distal pancreatectomy in 2 and total pancreatectomy in 4 cases.

All patients were followed up with a mean time span of 21.1 months (range 6–53). One patient with a mucinous cystoadenoma and a coexistent pancreatic adenocarcinoma died 10 months after surgery. The remaining 18 patients are all presently alive and disease free.

Discussion: Pancreatic cystic tumors are not a single clinical entity but share common features which make them different from all the other pancreatic tumors. The main issue regarding their treatment is a correct preoperative diagnosis. Such a proper diagnosis in presently possible only in 20–40% of cases and can guide the surgeon to appropriately select those patients who need an operation.

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24H pHmetric Evaluation of GERD after Laparoscopic Nissen-Rossetti Fundoplication: 1 Year Follow Up

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Introduction: Laparoscopic Nissen Fundoplication is the gold standard for surgical treatment of GERD. Results 1 year after Nissen-Rossetti Fundoplication is reported.

Material and Methods: 92 N-R performed, underwent to a pre and postoperative work-up including symptom quest, barium meal, endoscopy and 24-h pH-metry. 64 patients were considered. 92% of treated patients was asymptomatic.

Results: 24-h pH-metry was positive in 3 cases: total number of reflux episodes decreased from 40,00 ± 4,5 to 8,79 ± 2,3; the duration of longest episode decreased from 98,73 mins to 11,50 mins; the percentage of time with esophageal pH<4 was 1,8% ± 0,7 for total time, 1,4% ± 1,3 for supine time and 1,88% ± 0,6 for erect time; DeMeester & Johnson's Score decreased from 79,4 ± 1,0 to 13,2 ± 3,1; endoscopy with histological samples evidenced a strong improvement of esophagitis, a stationary aspect of Barrett's Esophagus in 1 patients, a complete regression in 2 patients; 17 patients complained dysphagia spontaneously relieved within 1 month; there was no need of reintervention, only one patient recurred to PPI therapy and one to benzodiazepine administration, however 95% of patients were completely satisfied by surgical results.

Conclusion: Based on our personal experience, laparoscopic N-R Fundoplication can totally control acid reflux after 1 year with relatively few complications and a high degree of patient satisfaction.

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Multivisceral Resections in Locally Advanced Colorectal Carcinoma. Analysis of Predictive Associated Factors

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Introduction: Multivisceral Resections (RMV) tries to obtain a curative result in colorectal cancer that is locally advanced in 10–20%. RMV are severe for post-operative morbidity and surgical risk and even if with radical purpose (R0) is possible just for selected cases. Aim of this study is the evaluation of biological, humoral and clinical factors that can be predictive for prognosis and for survival.

Methods: Between Jan 98 and Dec 2006, 15 patients affected by locally advanced cancer are compared with population of 19 patients subjected to standard resections for colorectal cancer (Duke B, C). Every patient has been checked with periodic 6 months controls for 3 years of follow-up.

Results: Three years survival was 33% in patients subjected to RMV.Post-surgical mortality (<30 days) was 6.6%. Longer surgical times, higher number of trasfusions and high values of CEA, CA 19.9 , total bilirubin, are statistically associated to the group of patients subjected to RMV.

Discussion: Identification of predictive factors can choose the patients that can take advantage of MVR surgery, that, for local colorectal advanced cancer, seems correct to obtain an estimated radical oncological result.

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Resurgery after Left Colon Resection

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Introduction: The major cause of reoperation after left colon surgery is the anastomotic failure, followed by the wound infection, adherential syndrome, and hemorrhage. Aim of study is to analyse the risk factors and the outcome of patients underwent resurgery for left colon disease.

Materials and Methods: From 1997 to 2006, 244 patients (91 females and 153 males; mean age 66 years, range 21–88) underwent left colon surgery. In 81 (33.2%) of these cases, surgery was performed in emergency. Left hemicolectomy (53.7%), anterior resection (16.4%), sigma resection (11.5%), total colectomy (8.2%), and colorectal recanalization after Hartmann's procedure (10.2%) were performed.

Results: A total of 12 (4,9%) patients required re-surgery due to anastomotic dehiscence: 4/12 patients were over 70-years-old; 8/12 had malignancy; 4/12 showed pulmonary disease, 2/12 obesity and hypoalbuminemia, respectively, and 1/12 corticosteroid-treatement. In 6/12 cases, the first operation was performed in emergency,in 4/12 for bowel obstruction.Intraoperative blood transfusion and ultralow anastomosis were performed in 4 and 3/12 cases, respectively.Mortality rate was of 16.7%.

Conclusions: Pulmonary disease, hypoalbuminemia, hemorrhage and malignancy are the most frequent risk factors for reoperation after left colon surgery in this series. Loop-ileostomy should be considered in at-risk patients.

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Use of Bovine Pericardial Patch (*Tutomesh-H*®, Advancor) for Contaminated or Infected Incisional Hernia Repair. Report of 5 Cases

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Introduction: Abdominal wall defects repair in potentially contaminated or infected fields with synthetic meshes exposes to a higher risk of prosthesis infection. Aim of this study is to assess the outcome in a patients' series undergone pericardium bovine patch implantation in contaminated or infectied field.

Patients and Methods: We report 5 cases (M/F 2/3, mean age 60, range 37–78 years) requiring incisional hernia repair in contaminated or infected field. Multiple enterocutaneous fistulas, anasthomotic dehiscence, caesarean section, infection of previous prosthesis, radical cystectomy (*Bricker* method) were the indications to the procedure. All patients underwent onlay Chevrel implantation.

Results: Morbidity consisted in one wound infection, and one postoperative lung oedema. The patient undergone radical cystectomy had anastomothic dehiscence with urinous peritonitis after 6 days. He was reoperated with an umbilico-pubic access without infection of the bioprostheses. No patient had hernia recurrence after 7, 4, 3, 2 and 1 months.

Conclusions: Pericardium bovine patch is a biomaterial that can be preferred in abdominal wall repair in the presence of several loco-regional disease with minimal foreign-body reaction, adequate strength, and biocompatibility. Advantages of bovine pericardium meshes are native tissue ingrowth and lesser adhesion formation vs synthetic meshes.

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Principles and Preliminary Experience of a New Tissue Sealing Device in Laparoscopic Colonic Surgery

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Background: The most recent advancement in electrosurgery has been the introduction of vessel sealing technology. The latest advance in electrosurgery is the introduction of a new termal device that causes simultaneous hemostatic saeling and cutting and minimizes force by delivering energy as high current and low voltage output.

We recently we performed several thyroidal operations, traditional or minimally invasive, using a device that simultaneously make use heat and pressure for denaturing, welding and cutting tissue, without passage of electricity through them; during the last period we have used the termal device in colic surgery especially in the right colonic resection.

Methods: In our experience we have performed two right colonic resection for carcinoma with thermal device called TLS 3; the TLS 3 was used in the liberation of the ascending colon from and for the section of the right colic artery and vein.

Results: We have not had complication intra and post-operative and the characteristics of the stay in hospital have been analogous to right colonic open resection; the patients were dismissed in VII post-operative day. Operative time was inferior in comparison with traditional procedure.

Conclusions: In our experience, thermocautery has proved safe and effective to reduce operative time; is safe and effective in dissection and haemostasis, improve coagulation, seals large vessels, short operative time especially if resection is performed by experienced surgeons.

Although TLS 3 has been used in two procedures (meagre number for being able to express judgments) the results obtained has been encouraging.

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Mild Acute Biliary Pancreatitis: Validity of the Magnetic Resonance Cholangio-Pancreatography (MRCP) Before the Videolaparocholecystectomy (VLC)

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Introduction: The therapeutic ERCP before the VLC in the patients with moderate-severe acute biliary pancreatitis (ABP) is a well recognized practice; the necessity of ERCP in the patients with mild acute biliary pancreatitis is not well defined.

Objectives: Aim of the study: to evaluate the usefulness of the MRCP before the VLC in patients with mild ABP.

Methods: In the period 2003–2006, twenty-five patients were submitted to a MRCP (15 females, 10 males, mean age 62 years, range 32–75) with mild ABP (Glasgow's criteria) without increase of the cholestasis tests (direct bilirubin, alkaline phosphatase, gamma-GT) and absence of choledocholithiasis at ultrasonography. During a follow-up period of 15–60 days after the VLC, the presence of jaundice or relapse of ABP were evaluated in all patients by means of clinical/laboratory/instrumental examinations.

Results: Six patients had choledocholithiasis (stones/sand/sludge) at the MRCP and they were submitted to an ERCP, stones removal and after to the VLC; 19 patients with a negative MRCP were submitted to the VLC. All the 25 patients did not have jaundice or relapse of the ABP during the follow-up period.

Conclusions: The MRCP was an accurate investigation for the preoperatory diagnosis of choledocholithiasis; so, it is an important procedure for patients with mild ABP, avoiding the ERCP.

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Mininvasive Treatment of the Severe Acute Biliary Pancreatitis

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Objective: Severe acute biliary pancreatitis (SABP) is about 20% of all the pancreatitis. The aim of the study was to define a mininvasive approach of the SABP: the removal of the Vater's papilla obstacle for the biliary flow, the treatment of the peripancreatic fluid gatherings and of the gallstones.

Methods and Procedures: In the period 1999–2007, 198 patients were treated: 172 mild/moderate acute biliary pancreatitis (ABP), 26 severe. Among the SABP, CT-scan revealed 18 necrotizing cases, and 8 cases with pancreatic edema. Within 72 hours an ERCP/ES was programmed in all patients and successfully executed in 16 cases. CT-scan guided percutaneous drainage was performed for 1 infected peripancreatic gathering and 2 intrahepatic ones; another infected gathering was drained by means laparotomic access. Cholecystectomy for lithiasis was executed within 30 days: laparoscopic in 24 patients, laparotomic in 2.

Results: In relation with the ERCP/ES, there were 4 post-ERCP pancreatitis (15.4%), failure of the procedure in 3 cases (11.5%) and no cholangitis, hemorrages or duodenal perforations; the percutaneous drainage showed no morbidity with resolution within 10 days; the cholecystectomy did not have major morbidity. One patient (3.8%) died in 20th day because of DIC.

Conclusions: The mininvasive approach of the SABP was an efficacious and safe therapeutic program.

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The Semi-Open First Umbilical Trocar Access Technique in Laparoscopic Surgery. Easy and Safe

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Background: First access in laparoscopy is still the cause of troubles and of a small percentage of visceral and vascular injuries. Residents and surgeons-in-training often have doubts about which technique is safer and "friendlier". Semi-Open Technique (SO) for the first umbilical trocar access was originally described in 2002. We report our retrospective analysis using SO that shows its safety and easiness.

Methods: In the period January 2003 – November 2007, 300 unselected patients, including obese ones (BMI > 30) were treated with a laparoscopy beginning with a peri-umbilical approach using SO. We usually prefer to enter the cavity with a Veress needle of 1.9 mm and STEP cannula . There were 112 males and 188 females with an age ranging from 16 to 82 years. The procedure was performed in 260 cases by an expert laparoscopic surgeon and in 40 cases by residents or surgeons without expertise in laparoscopy.

Results: We experienced no injuries of the viscera or vessels (0%). The mean time to enter in the abdomen was 180 seconds, including obeses. We only converted the procedure into Hasson in two female patients who had just been operated for gynaecological problems, with a lower median incision involving umbilicus, and 6 patients affected humbilical hernia with a final conversion rate of 2.6 %.

Conclusions: After our experience with the SO we believe that every surgeon who tries it will experience safety of the Hasson and comfort of the Veress .

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Raro Caso Di Adenocalcinoma Nel Tratto Digiunale

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Jejunum tumours not associated with neuro-endocrine tumours, are little frequent and their rarity, specificity and endoscope inaccessibility, determine delayed or erroneous diagnosis.In May 2006 we visited a white women (65 years old) with abdominal pain some days before, biliary vomit, no fever, without peritoneal irritation signs.During hospitalization, symptomatology was alternated with vomit and pain, but ever by occlusion signs. Abdominal x ray, gastrograph study, ultrasounds and tumour markers (Ca 125, Ca 19.9, Ca15.3, CEA, alfaFP) did not shown pathological signs. Colonoscopy shown sigmoid colon diverticulitis and the presence of sessile polypus about 30 cm from the anal line. Histopathological diagnosis was of "tubular adenoma" with minor dysplasia. Because of persistent pain and vomit we chose explorative laparoscopy. Opening peritoneal cavity shown stomach and duodenum ecstasy and tumour of first part of jejunum. Tumour resection was performed in segmental small intestine 14 cm long. Intestinal reconstruction was performed with lateral-lateral anastomosis because of inequality calliper of residual stump. Definitive histological examination confirmed the presence of moderately differentiated jejunum adenocarcinoma (G2), infiltrating and ulcerative growth. 9 nodes were isolated from mesenteric fat. Four of these were metastases -(pT3 pN1 MO –Ro).

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Anal Buschke-Lowenstein Tumors and Hpv-Related Lesions At Risk of Progression. Clinical Management in Relation to Viral and Host Factors

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Introduction: Giant Condyloma Acuminatum (GCA), known as Buschke-Lowenstein Tumor (BLT), is characterized by multiple, confluent condylomatous lesions in the anal area and occasional transformation to squamous cell carcinoma. It is caused by HPV types 6, 11 and 16. HPV 6, usually associated with benign lesions, is considered possibly carcinogenic to humans. Clinical management and treatment of BLT has not been defined yet. We evaluate the clinical course of GCA in relation to treatment modalities, patients' characteristics, and type of associated HPV sequences.

Materials and Methods: Anatomo-clinical data, treatment modalities and follow-up were recorded and analysed in relation to host and viral variables. Histology, immunohistochemistry and molecular analyses for HPV search and typing were performed.

Results: 16 patients (14 males, 2 females; median age 41,8 years, range 19–66) affected by GCA and treated in 3 different Italian institutions are included. Invasive or in situ carcinoma was present in 5 patients (31.2%), anal intraepithelial neoplasia (AIN, grades 1–3) in 3, condyloma without dysplasia in the remaining 8. All patients underwent radical resection. Recurrence occurred in 4/16 (25%), 1 patient died of cachexia 36 months after surgical procedure. HPV sequences were present in all the samples of the 15 evaluable patients; types 6 or 11 were found in 9 cases, type 16 was present in the remaining 6 cases. A statistically significant association was found between presence of HPV type 16 and both malignancy and recurrence.

Conclusions: Surgical radical resection was associated with a favourable clinical course among patients. Search and typing of HPV sequences is of prognostic importance and should be included in the diagnostic work-up of patients affected by GCA.

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Nutritional Gastrostomy: Indications and Laparoscopic Technique

Vettoretto Nereo, Giovanetti Maurizio

Surgical gastrostomy still encompasses a range of indications whenever percutaneous endoscopic gastrostomy (PEG) is not feasible. Traditional surgery to decompress or to permit enteral feeding is generally exploited through a median xifo-umbilical incision (Witzel gastrostomy). Laparoscopic surgery can offer a valid alternative with advantages concerning pain, wound infection and operative time; the use of stoma button, moreover, offers an excellent patient compliance especially in those subjects(immunodepressed, high surgical-risk) who may make the most of minimally invasive approach. The technique we suggest has been used in pediatric patients, but still few studies have tested its feasibility in adult patients in which PEG is not indicated. We tested its application also in complications of PEG (i.e. parietal detachment with gastro-peritoneal fistula or closure of a gastrostomy passage after accidental removal of a button). Three trocars are used, one (in epigastrium) will work as insertion site for the ostomy button. The stomach is suspended by two transparietal stitches, and the anterior gastric wall between the stitches is perforated with a monopolar hook: the trocar is then removed and a button is inserted through the two serial openings, the balloon is inflated and the two stitches tighted. Endoscopic control ends the procedure. Four patients have been treated, two for neo-

plastic intransitable oesophagus and two for PEG complications. Operative time has been lower than 40 min. All patients have been dismissed before day three without medical nor surgical complications.

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Huge Primary Retroperitoneal Mucinous Cystadenoma of Borderline Malignancy Mimicking an Ovarian Mass

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Background: Primary retroperitoneal mucinous cystadenoma (PRMC) is a rare tumor, 48 cases have been reported in international literature. Patients age ranges from 17 to 86 years (median, 42.3 years) and the size of the cystis ranges from of 5–35 cm (median, 16.1 cm). The histogenisis of these tumours, its biological behaviour and the optimal management strategy remain at a speculative level.

Case Report: A 35-year-old women was referred at our unit complaining continuous pain localized in the abdominal-pelvic region. Physical examination revealed a large soft mass palpable on her right abdomen and a mild tenderness over the umbelical line. Transabdominal ultrasound and CT scan confirmed the presence of a large mass. Tumour markers were in normal range. At laparotomy, a cystic mass of nearly 30 cm size was identified in the retroperitoneum area. The mass did not have any anatomical connection with the other organs. The uterus and both ovaries were macroscopically normal and therefore not resected. The cystic mass was completely dissected from the retroperitoneum. The patient did not undergo any adjuvant chemotherapy.

Conclusion: Primary mucinous cystic tumors of the retroperitoneum was correctly diagnosed only at the time of surgery. Preoperative investigations were not able to give informations about the tumor site. In spite of the short follow-up (two years), her favourable course supports the hypothesis that primary retroperitoneal mucinous cystadenoma may be treated in the same manner as a primary ovarian tumor of the same grade and comparable stage.

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TVT-O vs. TVT-S in the Treatment of Stress Urinary Incontinence: Complications and Early Follow-Up

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Objective: To compare TVT-O and TVT-Secure for the treament of female stress urinary incontinence.

Materials and Methods: 76 women with SUI underwent TVT-O (56) or TVT-Secure (20) procedures. Preoperative workups included a gynecological and obstetric history, clinical examination, Impact Incontinence Quality of Life questionnaire, self-evaluation of incontinence using VAS, 1-h pad test, pelvic ultrasound, cough and Valsalva stress test at physiological maximum bladder capacity and uroflowmetry. Urethral hypermobility was assessed by the Q-tip test. Evalution of prolapses was performed using the Pop-Q system. Patients were reassessed one, three and six months after the procedures.

Results: All TVT-S were perfomed using the hammock approach. Mean operative time was 12.3 ± 2.5 minutes (TVT-O) and 7.5 ± 1.2 (TVT-S) ($p < 0.01$). Mean time to first spontaneous bladder voiding, time to discharge and time to return to active daily activites were similar in the two groups. At the six months follow-up control, objective and subjective evaluation of postoperative incontinence sympomts showed two failures (3.6%) and three residual leakage (5.3%) in the TVT-O. No treatment failure was observed and one residual leakage (5%) were observed in the TVT-S group. Complication rates were 10.7% (6/56) in the TVT-O group and 5% (1/20) in the TVT-S group. The overall satisfaction rates were high in both groups.

Conclusions: TVT-O and TVT-S seem to be equally effective in treating stress urinary incontinence with similar impact on hospital stay lengths and return to active daily activites. TVT-S seems to have shorter operative times and complication rates.

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Endocervicoscopy

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Study Objective: To determine sensitivity and specificity of endocervicoscopy to study endocervical lesions not visualized at colposcopic examination.

Design: Retrospective-study.

Setting: Department of Gynaecology and Obstetrics and Pathophysiology of Human Reproduction of the University of Naples "Federico II".

Patient(s): Ninety-five patients with cytologic diagnosis of high squamous intra-epithelial lesion (H-SIL); 38 patients with negative colposcopic diagnosis and 57 patients with unsatisfactory colposcopy.

Intervention(s): patients underwent endocervicoscopy, which was performed with vaginoscopic approach using a 4 mm continuous flow office hysteroscope with a 30° grade optic and an incorporate 5 Fr working channel at a pressure ranging between 30 and 50 mmHg. Target biopsy with Grasping forceps or orientated curettage with Novak of cervical canal when needed. All patients were performed cold knife cervical conization after endocervicoscopy.

Measurements and Main Results: Endocervicoscopic diagnoses were consistent with pathological evaluation of cervical tissue obtained by conisation in 88% cases with only four false negative cases (4/95=4.2%).

Conclusions: Endocervicoscopy with target biopsy allows for an accurate outpatient evaluation of endocervical canal. This could be useful to perform a more precise, targeted and conservative cervical surgery. This is of paramount importance considering that most cervical preneoplastic lesions occur in fertile women, who want to preserve their reproductive capacity.

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Evaluation of Cervical Involvement in Endometrial Carcinoma: A Comparison Between Three Different Techniques

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Study Objective: To determine the diagnostic accuracy of transvaginal ultrasonography, hysteroscopy and magnetic resonance imaging in detecting cervical involvement in endometrial cancer.

Design: Retrospective-study.

Setting: Department of Gynaecology and Obstetrics and Pathophysiology of Human Reproduction of the University of Naples "Federico II".

Patient(s): Fifty-three patients with histological diagnosis of endometrial carcinoma.

Intervention(s): All patients underwent preoperative evaluation of cervical invasion by transvaginal ultrasound, hysteroscopy (performed using a 4mm continuous flow office hysteroscope with a 30° grade optic and an incorporate 5 Fr working channel for eventual biopsy) and MRI. Fifty-two patients were scheduled for a radical hysterectomy, while one patients was inoperable.

Measurements and Main Results: Data regarding sensitivity, specificity, as well as positive and negative predictive value of the three diagnostic methods were compared considering the final pathological evaluation as gold standard. Cervical involvement evaluated by hysteroscopy demonstrated a sensitivity of 86% and specificity of 89.4% with positive predictive value (PPV) of 75% and a negative predictive value (NPV) of 94%. Transvaginal ultrasound showed a low sensitivity (14%) and NPV (76%) but a high specificity (100%) and PPV (100%).

Our data show that specificity, sensitivity and NPV of MRI in detecting cervical involvement. are comparable to transvaginal sonography. However, PPV(67%) of MRI was inferior to those of TV-ultrasound and hysteroscopy.

Conclusions: Office hysteroscopy is a safe and effective method for the evaluation of cervical involvement in women affected by endometrial carcinoma. The chance to perform a target biopsy during the same examination increases the diagnostic accuracy of hysteroscopy.

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New Frontiers of Office Operative Hysteroscopy

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Background: Up to 90s, gynaecologists performed hysteroscopy in the office setting only for diagnostic purposes while operative procedures were always carried out within the operating room theatre by means of resectoscope. Recent technical advancements pertaining to the design and manufacture of hysteroscopes, the change of the distension medium as well as the advent of bipolar technology have made it possible to perform even operative procedures in the outpatient setting without the need for cervical dilatation or anaesthesia.

Methods: To describe the treatment by office operative hysteroscopy of hematometra, uterine and vaginal septa, vaginal polyp, adenomyosis as well as other uterine cystic neoformations. All the procedures have been performed under outpatient regimen, with vaginoscopic approach. The Office Continous Flow Operative Hysteroscope with 5-Fr grasping forceps and scissors or the three types of bipolar flexible electrodes have been used for the procedures.

Results: All the procedures described herein have been carried out safely and successfully, with high patients' acceptability and minimal discomfort. The success of the procedures have been confirmed by the resolution of symptomatology as well as by a follow up instrumental examination.

Conclusions: In the present paper we have demonstrated that even rare pathological conditions which have traditionally represented a great challenge for the gynaecologist can be treated safely and effectively by outpatient hysteroscopy. This should further increase and promote the acceptability and spreading of office operative hysteroscopy.

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Anatomic Impediments at Office Hysteroscopy: "Tips and Tricks" for a Successful Procedure

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Background: Cervical stenosis and pain represent the reasons of failure of office hysteroscopy in 86.4%-100% of cases. The so called "cervical stenosis" includes a variety of cervical anomalies, from subjective impression of narrowing to a completely obliterated internal (ICO) or external (ECO) cervical orifice.

Objects: The aim of our study is to describe "tips and tricks" for overpassing anatomic impediments at office hysteroscopy.

Discussion: The use of hysteroscopes with a oval profile, vaginoscopic approach, mechanical instruments and radially incision represent the main tricks to achieve a safe and effective procedure with minimal patients' discomfort. The development of minihysteroscopes with a oval profile guarantees a perfect correlation between the instrument and the anatomy of the ICO, which has usually a tranverse main axis of 4–5 mm.. As a matter of fact a simple rotation of the scope on the endo-camera by 90° aligns the main axis of the hysteroscope with the axis of the ICO. The vaginoscopic approach avoids the use of speculum which could hamper operator's latero-lateral or sagittal movements necessary to overcome cervical stenosis; in addition, the magnification of endoscopic view during vaginal distension allows for the use of 5-Fr or 7-Fr instruments in case of OUE stenosis.

Moderate or severe cervical stenosis may be treated by hysteroscopic flexible instruments, such as grasping forceps and scissors**,** through which the fibrous tissue can be streched or cut respectively. The resection of severe stenosis of ECO may be also performed through a radially incision using Twizzle bipolar electrode.

Conclusion: The development of small diameter hysteroscopes with oval profile and working channels through which mechanical and bipolar instruments can be inserted has made it feasible the treatment of the main anatomical impediments in outpatient regimen thus reducing the rate of failed hysteroscopies.

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Hysteroscopic Resection of Uterine Leiomyosarcoma: a Case Report and Literature Review

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Introduction: Uterine sarcomas are uncommon tumors that account for less than 3% of all female genital tract malignancies. Abnormal uterine bleeding is the most common presenting symptom of uterine sarcomas and diagnosis is often made incidentally at the time of myomectomy or hysterectomy for presumed benign condition.

Case Report: A 41-year-old woman referred to our unit for recurrent abnormal uterine bleeding. A vaginoscopic hysteroscopy was performed by means of a 4-mm continuous-flow operative office hysteroscope with a 2.9-mm rod lens. A normal-appearing G1 myoma of nearly 4.5 cm was detected on the anterior wall of the uterus. Taking into account the age of the patient and her desire for future fertility, a hysteroscopic myomectomy preceded by a 3-month preoperative treatment with gonadotropin-releasing hormone-analogues was scheduled. Hysteroscopic resection of the myoma was performed by means of a continuous flow 8- to 9-mm resectoscope. The histological diagnosis revealed a leiomyosarcoma. Following such diagnosis, the patient underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy, pelvic lymphadenectomy, and peritoneal washings. Pathologic examination revealed the presence of a 2.2-mm, residual intramural tumour. The patient received 6 courses of adjuvant chemotherapy. At 3 years of follow-up the patient is still recurrence free.

Discussion: According to our experience and the available literature reviewed, the removal of the whole myomatosus lesion, even if its appearance suggests a typical submucosal myoma, represents the only method to definitively rule out the presence of sarcomatous tissue.

Maxillofacial Surgery

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Central Odontogenic Fibroma (FOC): A Case Report

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Introduction: The Central Odontogenic Fibroma is the most frequent variant of Odontogenic Fibroma, rare shape of Odontogenic Tumors (1,5%). Usually this lesion is asymptomatic. These tumors like other neoplasm may appear only by radiologic findings that show a radiolucency or mixed radiodensity area. The true diagnosis can be obtained just after histological analysis. The surgical treatment is generally definitive and can avoid the important complications, such as, fracture of bone's interesting segment.

Methods: The authors , show a case report of fourty year old afro-american woman that came to our observation for the presence of an espansive mandibular neoformation, of approximately four cm, accidentally diagnosed after radiological exames carried out due to dental problematics. The radiological aspect placed in evidence the presence of different plurilobulate osteolitics areas ,similar to an Ameloblastoma's radiographic aspect. In absence of a true diagnosis, a coservative method of treatment was used (asportation and curettage of bone cavity).

Results: Histologic analisis put down for FOC, so the adopted treatment has guaranteed complete morfofunctional restoriation without post-operatory complications.

Discussion: In this case report the radiologic aspect, the dimensions, the localizations, the anagrafic dates of the patient, initially suggested an Ameloblastoma. These characteristics being common to others odontogenic maxilla-mandibular lesions, had led the authors to choose initially, a conservative treatment, reserving radical surgery just in case of malignous or locally aggressive lesion diagnosis. The histological exam of FOC has justified the adopted treatment.

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Endoscopic Treatment and Management of Frontalethmoidal Mucopyocele with Orbital Extension: A Case Report

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Introduction: The Frontoethmoidal mucocele with Orbital Extension, is a multiple etiologic lesion (traumatic, inflammatory, neoplastic, iatrogenic or idiopatic) that provokes sinus ostium obstruction, leading to the formation of a mucus membrane sack. Once infected the fluid, is called mucopyocele. Different complications can arise without treatment: bone wall erosion, fractures, invasion of the cranic and orbitary cavities whit abscess formation, meningitis or orbitary cellulyte.

Method: In this Case Report the Authors present the clinical case of a fifty-years old woman that came in to the emergency room with acute clinic symptom: esoftalmic and with right-eye hypomobility, pain, diplopic, without alteration of optical nerve functionality. With TC and RM exames, an extended monolateral mass at the basemant on the right orbit and perifocal bones profile deformation was identified. As a result of these characteristics an Endoscopic Surgery treatment was chosen .

Results: The patient is currently free of any clinical symptoms, she has completely reacquired visual function, without intra or post surgical complications.

Discussions: The mucopyocele can interest every paranasal sinus. In this Case Report, we analysed the treatment of the Frontoethmoidal Mucopyocele with endonasal endoscopic surgery that permitted to avoid Coronal surgery, which is considered more invasive, along with a higher probability of complications (liquorrea) and eventual aesthetic problems. The case proposed, evidences the necessity of modern surgeon to include is their capabilities those of alternative surgery techniques that are much more efficient.

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Frontal Sinus Fractures: Which Kind of Treatment?

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Introduction: Frontal sinus fractures are relatively uncommon maxillofacial injuries, representing only 5–15% of all maxillofacial trauma; several different procedures are feasible, therefore optimal treatement algorithm is still controversial according to possible intracranial and ophthalmologic complications.

Methods: From January 2003 to January 2008 in maxillofacial surgery department of Sant' Anna Hospital in Como, sixteen patients affected by frontal sinus fracture were treated. Execution's

duration, intraoperatory complications, post-operatory sequels, morphologic and functional results were analyzed from a clinical and radiological point of view.

Results: In all cases we obtained a good anatomic results, without any aesthetical and functional complications.

Discussion: The principles of the surgical management of frontal sinus fractures are based on adequate exposure, minimal brain reaction and rigid fixation of fractures. Fractures involving the anterior wall of the frontal sinus, without dislocation or minimally dislocated are submit to a conservative management.

Dislocated fractures involving the anterior wall, without any intracranial complications or sinus obstruction, are submit to a surgical management on the basis of cosmesis. In need of nasofrontal duct obliteration it is usually managed by autologous calvarial bone and fat from abdomen. Complex and displaced anterior and posterior wall fractures have an higher risk of dural tear and are treated by cranialization and isolation of the sinus contents from the nasal cavity with a vascularized pericranial flap.

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Treatment of the Atrophic Maxilla: Two Different Approaches

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Aims: The aim of the present study is to compare the efficacy of autologous bone multiple harvesting versus single harvesting in the surgery of the severe atrophic maxilla, in term of post-operative morbidity and resorption of bone grafts.

Material and Methods: Ten patients, affected of severe atrophic maxilla - class V-, were divided in 2 groups (A and B) and treated by the means of a combined onlay bone grafting and bilateral sinus lift elevation procedure. Clinical and radiographic (Rx-OPT and CT Dentascan) examinations were performed at T_0 to evaluate the bone defects and to programme surgical treatment. In the study group A the harvesting site was the anterior iliac crest and calvaria, while in the control group only anterior iliac crest. All patients were recalled at 1 week, 2 weeks, 1 month, 3 months and 4 months for a clinical and anamnestic evaluation of the donor site's post-operative complications and for a radiographic control of the bone graft.

Results: Postoperative clinical evaluation showed no significative complication in group A while in group B were reported some complications at least for an average of two weeks. Radiographic evaluation after 4 months showed a little grade of resorption of the grafts harvesting from iliac crest (group B), a minimum or no resorption of calvaria harvesting (group A).

Conclusion: In the reconstruction of the severe atrophic maxilla (class V), a multiple harvesting reduces both post-operative complication rates and resorption rates.

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Endoscopic Endonasal Approach vs Transfacial Approch for the Medial Orbital Wall Fracture

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The incidence of medial wall fractures is between 42.8 percent and 81.7 percent in clinical studies.

This fracture is often followed by post-traumatic enophthalmos and other complications like diplopia.

So the best approach is the reduction of the medial orbital fracture to prevent the complications.

The authors described several access routes for the treatment of this fracture, such as a transcutaneous approach, and an endoscopic endonasal approach.

In the period from 2003 to 2007, 21 patients with orbital medial walls fractures arrived at the Departement of Maxillofacial Surgery, University of Rome La Sapienza. Of these 21 patients affected of a medial orbital fracture: 9 cases of both floor and medial walls and 12 cases of isolated medial wall.

Of the 9 patients with both floor and medial walls fractures, everyone underwent only floor reduction by a transcutaneous sub-palpebral approach; of the 12 patients with isolated medial wall fracture, 2 had no treatment and 8 underwent medial wall reduction by a transcutaneous sub-palpebral approach; 2 patients treated by endoscopic approach.

In conclusion, endoscopic endonasal surgery can be considered a good alternative for the reduction of medial orbital wall fractures.

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Nasal Correction in Craniofacial Syndromes

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Most craniofacial malformations are characterized by morphologic and functional alterations involving maxilla, the orbits and the nose. Some of these deformities involving the nasal pyramid are secondary to maxillary and orbital malformations, whilst others are primary due to the nose. The septal and nasal correction represents a fundamental step in the craniofacial syndromes therapy to obtain a functional and aesthetic recovery and a social rehabilitation of these patients. We reviewed the clinico-radiologic and photographic documentation of patients affected by craniofacial malformations treated in the Maxillofacial Surgery Department of Policlinico Umberto I of Rome. Rhinoplasty in craniofacial syndromic patients is very challenging for the surgeon because of the contemporaneous involvement of cartilage, bone and soft tissue of the nose. However, this is an essential ancillary procedure to be

executed with the correction of orbital and maxillary deformities, to obtain an appropriate facial morphology in order to improve the quality of life and social rehabilitation of these patients.

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Reconstruction of Facial Gunshot Injuriy

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Introduction: The severity of injury resulting from facial gunshot wounds varies according to the caliber of the weapon used and to the distance from wich the patient is shot. The timing of surgical reconstruction is very controversial. There are different philosophies about the management of facial gunshot wounds: someone advocate early aggressive intervention for one-stage reconstruction of all involved structures, others advocate a nonoperative management or conservative approch. Aim of this study is to propose our management to facial gunshot wounds.

Methods: A total of 4 patients were considered between 2005 and 2007. Patients including criteria were: all maxillo-facial wounds derived by a single gunshot; gunshot not determinate a primary brain involvement; no others concomitant body injuries were present.

Results: One patient died after surgical treatment; two cases were solved with a double surgical step; last one was treated only with a free-flap.

Discussion: From the point of view of the Author, every cases has a different surgical approch to follow, the surgeon before operate, after the primary stabilization of the patient, should study the case with clinical and all the radiographic examination he can benefits, understanding if aesthetic and functional reconstruction can be reatch in a 1 stage surgical approch or if the aesthetic result must be delayed in another surgical stage.

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Latissimus Dorsi and Gracilis Muscle in Reanimation Facial Nerve

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Introduction: The reanimation of facial paralysis is an intervention that differs from neurovascular free-muscle transfer for treatment of established facial paralysis resulting from conditions such as congenital dysfunction, unresolved Bell palsy, Hunt syndrome, or intracranial morbidity, with difficulties including selection of recipient vessels and nerves, and requirements for soft-tissue augmentation. When bilateral paralysis and paresis preclude use of the controlateral facial nerve, the authors' preferred donor nerve for reinnervation of free muscle transfer is a branch of the trigeminal nerve, the ipsilateral nerve to the masseter.

Methods: Authors introduce the clinical case of a young patient suffering from Moebius Syndrome, a congenital bilateral palsy of the sixth and seventh cranial nerves. It results a total absence of facial expression and a severe strabismus, who underwent a bilateral reanimation of the VII c. n. with microvascular gracilis free flap in the Department of Maxillo-Facial surgery of "Sapienza" University of Rome. They performed two operations with an interval of time of nine months in order to restore bilaterally the facial expressions and especially the ability to smile.

Results: After a period of 6 months we recorded a satisfactory functional results and the patient became able to smile. The ultimate goal in the treatment of facial palsy is the restoration of voluntary and spontaneous movement to the paralyzed side of the face, symmetrical to the normal side.

Discussion: Microneurovascular free muscle transfer is a standardized procedure for the treatment of established or long-standing facial paralysis. However, there is no general agreement about which is the best muscular free flap to use. In this clinical case we have chosen microvascular gracilis free flap. The reasons of this choice were: thinness of the flap, reduction of operative time and possibility of working in double equipe, good aesthetical and functional outcomes of donor site. In cases with long established unilateral facial paralysis we report a refined technique utilizing one-stage microvascular free transfer of the latissimus dorsi muscle. Its thoracodorsal nerve is crossed through the upper lip and sutured to the contralateral intact facial nerve branches.

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Iliac Crest Flap: Donor Site Morbidity

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Objectives: In the past decade composite microsurgical free flaps underwent great improvements as reconstructive procedures of wide and complex bony defects.

Composite free flaps are widely used as reconstructive options in oncologic, malformative, and pre-prosthetic surgery. Iliac crest, represents a flap of choice in head reconstructive surgery.

Methods: The Authors present a retrospective analysis of their experience with composite iliac crest free flaps in the reconstruction of the maxillo-facial region. The indications and use of the iliac crest flap are discussed together with the complications and a review of the literature.

Results: The results of the retrospective analysis show that the complications associated to iliac crest flap harvesting are: chronic pain; sensory loss; paresthesia; haematoma; seroma; gait disturbance; instability of the sacroiliac joints; pathologic fracture; contour defect; regional scar.

Discussion: Composite iliac crest transfer has an established role in head reconstructive surgery. The functional and aesthetic results of iliac crest flap are widely reported in literature. However, few studies describe the donor site complications and morbidity.

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Surgical Treatment of Clear Giant Cell Granuloma: A Case Report

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Introduction: Clear giant cell granuloma was classified by WHO in 2005 as an idiopathic benign intraosseus lesion rarely aggressive that occurs almost exclusively in jaws. Introduced for the first time by Jaffè in 1953, it occurs most frequently in young people (age<30) with a little predilection for female. Istologically it consists in an osteolytic proliferation of fibrous tissue haemorrhage and haemosiderin deposits, presence of osteoclast like giant cells and reactive bone formation. Differential diagnosis has to be made with other ostelytic both unicistic and multicistic neoformations of jaws (odontigenic tumor; fibrous dysplasia; cysts ect.)

Method: A 59 years-old woman presented to our department in may 2007 with a swelling in the right side of the face causing obliteration of nasolabial fold since eight months. At TC exam it presented like an osteolytic and expansive formation that spread up from the lateral wall of nose untill anterior wall of maxillary sinus. Intraoral biopsy performed revealed clear giants cell granuloma. Surgical removal of neoformation with preservation of important structure was performed.

Results: The patient had not intra or post surgical complications. A follow up at seven months excluded any relapse.

Discussion: Clear giant cell granuloma is a non-neoplastic proliferative lesion of unknown etiology. It's basic to make a correct differential diagnosis with other radiolucent lesions of jaw to define the best therapeutic approach. Differential diagnosis is principally based on a good clinical, radiological and histopatological exama because many radiolucent lesions are clinically and radiologically similar each other.

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Morphing in Orthognathic Surgery

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Introduction: In the last years the request of orthognathic surgery for aesthetic purpose is increased. The research makes up several diagnostic instruments that help the surgeon for the planning of surgical treatment to get the best aesthetic results. Authors compare the validity of Laser Scan and Nemoceph software in the study of soft tissues and their role in the planning of orthognathic surgery.

Methods: We compared two groups of patients admitted for orthognathic surgery . In the first group the morphing was made using Nemoceph, in the second one with Laser Scan.

Results: In the first and in the second group of patients no great differences were found between morphing and surgical results.

Discussion: This study shows that, in the planning of surgical treatment, both Laser Scan and Nemoceph software are very usefull for the surgeon. The biggest difference is in the preoperative planning time that is longer in the simulation with Laser Scan. However is better to use Laser Scan morphing in complex surgical case such as asimmetry of face because of its 3D imaging. Otherwise Authors concluded that both Nemoceph software and Laser Scan helps the surgeon during the preliminary conversation with the patients, because, used before the surgery, it avoiding false expectations for patients-self.

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Our Experience in Treatment of Primary Condilar Hyperplasia

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Condylar hyperplasia is a pathology characterized by monolateral abnormal growth of the condyle. This condition may occur as primitive or secondary. The primitive disease is characterized by an idiopathic anomalous growth of condylar cartilage that leads to the constitution of a hyperplasic condyle that develops both vertically and horizontally.

The secondary disease instead may be considered as the consequence of an adaptation of condylar cartilage to occlusal or cervico-facial anomalies with the final goal of ensuring a good relation with the cranial base.

Mixed conditions exists too.

The aim of the work is to analyze primitive condylar hyperplasia phenotype through the mechanisms that affect facial growth, evaluate pathogenetic factors and to realize a therapeutic protocol for the malformation.

A total number of 10 patients have been analyzed through the comparison of patient's portraits and x-rays. Pre surgical and post surgical measurements of skeletal bone have been performed. A functional evaluation of patients was realized too.

Oncologic Surgery

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Epidoxorubicin, Etoposide and Cisplatin (EEP) in Neoadjuvant Setting for Locally Advanced Resectable Gastric Cancer: 7-Year Survival Results of a Phase II Study

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Background: Perioperative chemotherapy is considered an effective treatment option for pts with locally advanced gastric cancer (LAGC). We report the results after a 7-year f-up of a study aimed to evaluate a perioperative chemotherapy protocol in a group of LAGC pts.

Methods: Between Feb-1996 and May-2000, 24 pts with LAGC underwent D2-gastrectomy after 3 cycles of chemotherapy (Epirubicin, Etoposide, Cisplatinum). Three further cycles of chemotherapy were planned after surgery. Differences among groups were evaluated by $\chi 2$ test. Univariate and multivariate survival analyses were performed.

Results: Twenty-four pts received preoperative chemotherapy and underwent surgery. Seventeen out of 24 pts (71%) receveid postoperative treatment. The main toxicity was grade 3–4 neutropenia. R0 resection was achieved in 83.3% of pts. No complete pathological response was documented,but a T-downstaging was obtained in 10/24 pts (41.7%). Median survival was 40 months and 7-year survival rate was 46%. At univariate and multivariate analysis, R0 resection and tumor diameter were the most important prognostic factors.

Conclusions: Our results confirm a survival benefit for LAGC pts treated by perioperative chemotherapy and D2-gastrectomy in comparison with surgical treatment alone.The high rate and the prognostic impact of R0 resection stressed the role of preoperative rather than postoperative therapy.

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Ratio of Metastatic Lymph Nodes for Gastric Cancer: Comparison between TRM and TNM Staging Systems

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Purpose: To analyze the prognostic significance of the staging system based on ratio of metastatic lymph nodes (TRM) as compared with TNM staging system in patients with node positive, non metastatic gastric cancer (GC), regardless of the extension of node dissection.

Methods: We reviewed the data of 219 patients who underwent potentially curative gastrectomy for node positive GC between Jan-1992 and Dec-06.N ratio (NR) categories were determined by the best cut-off approach (NR1, 1%-15%; NR2, 16%-40%; NR3, >40%). We selected 5 TRM classes by using K-means cluster analysis to obtain prognostically homogeneous subgroups. To compare the prognostic power of TRM vs TNM system we plotted the mortality rate against new TRM classes as well as against TNM classes.

Results: After a median f-up of 24 months,the 5-year survival of TRM groups was 100% for TR1, 67.6% for TR2, 31.2% for TR3, 15.5% for TR4 and 0% for TR5 ($p<0.0001$); the 5-year survival of TNM classes was 83.3% for IB, 72.1% for II, 42.9% for IIIA, 25.0% for IIIB and 11.8% for IV ($p<0.0001$).When the 5 TRM stages were plotted against mortality rate no overlapping was observed,while an evident overlapping was observed when the 5 TNM subsets were plotted against mortality rate.

Conclusion: The staging system based on NR is a simple and reproducible tool to stratify gastric cancer patients with higher prognostic power than current systems.

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Age Related Co-Morbidities in Colorectal Cancer Patients: Surgical Problems and Prognostic Impact

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Aim: Colorectal Cancer (CRC) incidence increases with aging. The aim of the study was to analyse the relationship between preexisting diseases and other clinicopathological features in elderly population affected by CRC with perioperative surgical outcome and survival.

Patients and Method: Between 1999 and 2006 270 consecutive patients were operated on for CRC at our Institute. Clinical, pathological and surgical data in two groups of patients

(A <70 years old, n=146; B ≥70 years old, n=124) were compared. Comorbidities, postoperative complications, mortality rate and 5-year survival in both groups of patients were analyzed, with special reference to patients resected with curative intent (R0).

Results: An R0 resection was achieved in 112 and 98 patients respectively in group A and B. Following surgical resection, we observed a low rate of postoperative complications with 19 out of 146 (13%) cases in group A and 25 out of 124 (20.2%) in group B (P=0.078). Mortality rate was significantly higher in elderly group with respect to younger group, 4% vs 0% respectively (P=0.020). Regarding hospitalization and other clinical or pathological findings, there were no differences between the two groups. Patients over 70 years have a high rate of cardiovascular pre-existing diseases (P=0.0001). Cardiovascular diseases increased significantly the risk of developing postoperative complications in both groups, while diabetes mellitus and digestive diseases only in younger population. Younger and older patients resected with curative intent (R0) have 76.8% and 56.7% 5-year overall survival rates respectively (P=0.0006). Tumor-related survival rates, on the contrary, were not significantly different between the two groups (85.7% vs 76.1%; P=0.352).

Conclusions: In both young and elderly population, comorbidities should be considered a risk factor for postoperative complications. However, postoperative mortality seems to be a prerogative of elderly people, particularly those affected by cardiovascular diseases. High long-term survival rates are observed even in elderly patients, particularly after resective surgery. In elderly patients a careful preoperative evaluation of cardiovascular and pulmonary pre-existing diseases and an adeguate peri- and postoperative management are needed.

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Assessment of Microsatellite Instability in Familial Gastric Cancer

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Background: Classically, gastric cancer (GC) appears as sporadic form, nonetheless recently a very high familial aggregation rates have been recently described in high incidence areas. Microsatellite instability (MSI) is recognized as an important molecular pathway in gastric tumor. The aim of this study was to assess the frequency of MSI in GC with familial aggregation.

Methods: Five quasimonomorphic mononucleotide repeats (BAT-26, BAT-25, NR-24, NR-21 and NR-27) were analyzed in 250 GC patients and analyzed with respect to family history.

Results: Seventy-five patients (30%) had at least one first-degree family member affected by GC and MSI was identified in 63 patients (25.2%). MSI was significantly more frequent in patients with familial aggregation for GC (38.7% vs. 19.4%; P=0.001). Even stratifying according to Lauren histotype, a significant association between MSI status and familial aggregation for GC was observed in intestinal as well as non–intestinal Lauren histotype. A similar frequency of MSI was observed in families with history of GC only or in families with members with colon cancer (P=0.96). Conversely, in families with history of lung cancer the frequency of MSI cases was significantly lower (5.6%) (P=0.007).

Conclusions: MSI occurs in GC with familial aggregation, especially in families with members affected with gastric cancer as sole neoplasia or with colon cancer. The same in not verified in families with lung cancer. These data suggests that the first two types of families share common ethiological factors in contrast to GC families with involvement of lung cancer.

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Cause of Non Frequenty Hematoperitoneum: Breaking of Luteal Cyst of Corpus Luteum

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The ovarian cyst rapresent pathology most frequent observe in the annexas; they are distingueshed in folliculis cysts, luteal cysts, luteal cysts of corpus luteum.

Their evolution pass through three essential moments:

- Obliteration for quick cicatrization of the stigma Graafian follicle;
- Hematic pouring and central softening;
- Increase of intracavitary fluid that interrupt with constitution of the fibrous tissue.

Case Report: The patient reported pain to inferior quadrants of the abdomen, nausea and vomit,occlusion of the alvus.

Unexpectedly it had clear worsening with the increase of pain and the establishing of hypopiesia and hyperpyrexia.

It was documented a moderate anemia and a high increase of the leucocytosis.

To ultrasonography: presence of injury hypoecogenic of 3 cm, to ovary sx and presence of abounding free fluid.

The operation: the left ovarium occupied by a big cyst, rimose in surface from which driped hematic fluid.

Discussion and Conclusions: In the second phase of the menstrual cycle, occur functional –anatomy changes that bring at the formation of gravidic corpus luteum or menstrual corpus luteum.

The luteal cysts represent the result of the cystic evolution of the corpus luteum.

They are cysts characterized by an intense endocrine activity and which can produce frequently a surplus of steroids.

They can be cause of bleeding, often of slight entity but also imposing; these rapresent a frequent and dangerous complication, especially in women subjected to anticoagulant treatment; infact it determine a raise of intracystic pressure with consequent breaking and hematoperitoneum, therefore needed emergency operation like.

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Laparoscopic Hyperthermic Intraperitoneal Chemotherapy is Safe and Effective for the Treatment of Debilitating Malignant Ascites Secondary to Unresectable Peritoneal Carcinomatosis

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Aim: To assess the role of laparoscopic hyperthermic intraperitoneal chemotherapy (HIPEC) to treat debilitating malignant ascites through the analysis of published series.

Methods: All the studies published in the English-language international literature reporting the use of laparoscopy for HIPEC were analyzed. The following data were collected for each article: number of patients, aims of the procedure, primary malignancy, mortality and morbidity linked to the procedure, clinical success in the palliation of ascites.

Results: Four retrospective studies, encompassing a total of 31 patients have been published to date. Laparoscopic HIPEC was performed with neo-adjuvant purpose in 5 patients, and with adjuvant aim in 5 other patients. Peritoneal carcinomatosis was completely resected (5 cases) or not found at the time of laparoscopy (5 cases) in the 10 patients undergoing laparoscopic HIPEC with curative purpose. In 21 patients laparoscopic HIPEC was performed with the specific purpose of treating debilitating malignant ascites from peritoneal carcinomatosis. Peritoneal carcinomatosis was originated by gastric cancer (10 cases), colorectal cancer (3 cases), ovarian cancer (3 cases), breast cancer (3 cases) and peritoneal mesothelioma (2 cases). No death related to the procedure was recorded. Three complications were observed (9.6%). Only one minor complication (delayed gastric empting) was recorded among the 21 patients in whom laparoscopic HIPEC was performed for debilitating malignant ascites (4.7%). Clinical palliation of malignant ascites was achieved in 20 patients of the 21 undergoing laparoscopic HIPEC (success rate: 95.2%).

Conclusion: laparoscopic HIPEC appears to be useful to treat debilitating malignant ascites secondary to unresectable peritoneal carcinomatosis. Data in the literature show that the procedure is safe and effective with a high rate of success with no mortality and a low morbidity.

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Nodal Localizations from Merkel Cell Carcinoma with No Identifiable Cutaneous Primary Site. A Single Center Multidisciplinary Experience

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Background: Merkel Cell Carcinoma (MCC) is an aggressive cutaneous neuroendocrine carcinoma. The disease is rare and only few cases present with no apparent primary lesion but with lymph node localization.

Spontaneous regression of the primary cutaneous lesion has been documented in 10–20% of cases.

Aims: Determine the outcomes of patients with MCC with no obvious primary lesions who were treated with curative intent and multimodality approach.

Methods: Between October 1995 and January 2008, 83 patients with MCC have been treated at the European Institute of Oncology of Milan (IEO). Of these, 22 patients were affected of MCC with lymph node localization but with no identifiable primary lesion. We evaluated the additive role of FDG PET- scan and somatostatin receptor scintigraphy, the time to progression and the overall survival (OS).

Results: Sixteen patients had inguinal, four axillary, and two laterocervical disease. Patients had follow-up for a median of 2.0 years.

Ten patients did not undergo to lymphadenectomy. Five of them received chemo-radiotherapy, four chemotherapy and one radiotherapy.

Ten patients received lymphadenectomy, in six cases followed by chemo-radiotherapy, four by chemotherapy.

OS was 21 months. Six patients (all with lymphadenectomy) are now alive and disease-free.

Locoregional control was 30%.

Conclusions: This group of patient affected by MCC has need of an aggressive multimodality treatment. FDG-PET scan is effective in the staging and follow-up. Lymphadenectomy seems to prolong survival, but not in all cases. This suggests the importance of a multidisciplinary approach.

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Hemorrage after Pancreaticoduodenectomy in Patients with Vascular Anomalies

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Introduction: Hemorrhage after pancreaticoduodenectomy (PD) occur in 2–8% of case (mortality 18–45%). Moreover celiac axis stenosis and other anomalies are found in 2–24% of cases. In these patients during PD, division of the gastroduodenal artery from de common hepatic artery may cause acute ischemia of the liver and an arterial reconstruction could be necessary.

Patients: 3 out 50 patients undergone PD had massive hemorrhages. Two of theme had vascular anomalies (1 celiac axis stenosis, 1 a double hepatic artery with the gastroduodenal artery arising from left hepatic artery). In the first we performed a vascular reconstruction between gastroduodenal and hepatic artery.

Results: The cause of bleeding was a pseudoaneurysm dischovered by CT scan in all cases. In the first patient an endovascular occlusion of hepatic artery was performed with development of hepatic ischemia. In the second patient an endovascular covered stent was placed in the left hepatic artery and in the last the pancreatic pseudoaneurysm was embolizated.

Conclusions: Formation of pseudoaneurysm and arterial bleeding after PD could be related to the pancreatic fistulas and also of vascular anastomosis realized to treat vascular anomalies. While hemorrhage in the early time period should prompt urgent exploration, in the late period angiographic treatment should be attempted in stable patients.

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Detection of Occult Colorectal Hepatic Metastases (OCHM) Using Duplex Colour Doppler Sonography (DCDS): Prospective Study

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Introduction: Conventional imaging modalities, computed tomography (CT) and ultrasound (US), are unable to detect occult or small liver metastases because of limited resolution and contrast differentiation. Previous studies have shown that overt intrahepatic tumours are associated with subtle changes in liver perfusion. DCDShas the ability to measure liver blood-flow directly.

Methods: This prospective study assessed the predictive value of DCDS in the early detection of OCHM. The Doppler perfusion index (DPI), defined as the ratio of hepatic arterial to total liver blood flow, was calculated in 25 patients submitted to precedent surgery for colorectal cancer (CC group) and in 30 healthy controls. All patients of CC group were followed up at 3-month intervals with US and at annual abdomen CT.

Results: No statistically significant differences in age, body surface area, cross-sectional area of the common hepatic artery, and congestion index of the common hepatic artery and portal vein were observed between control subjects and patients of CC group. During follow-up, 4 patients of CC group with anabnormally high DPI at the time and after of apparently curative primary colon resection haddeveloped liver metastases, that were detected with CT, US, and surgery.

Conclusion: This preliminay results supports the theory that patients with OCHM had early alteration in liver perfusion with incresed DPI. The study suggest that DCDS measurement of the DPI is the most sensitive technique in early detection of OCHM. All studies should attempt to define normal liver on the basis of follow-up results rather than those of laparotomy.

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Laparoscopy (LAP) in the Identification of Peritoneal Carcinomatosis (PC) from Colorectal Cancer (CC): Retrospective Analysis

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Introduction: PC is a frequent terminal evolution from CC; at the time of diagnosis affects approximately 10% of the patients. Medical oncologists and surgeons had considered it to be an untreatable condition for its unfavorable prognosis (median survival of 6–9 months). The preoperative staging of the CC uses some modern imaging techniques (IT), that, despite the elevated sensibility, still introduces a meaningful limit in the diagnosis of the PC.

Methods: The aim of this study was to evaluate the real effectiveness of LAP in the staging of CC which were considered resectable at preoperative examinations and in particular in the detection of PC not evidenced with traditional IT. A series of 27 patients submitted to LAP for CC is retrospectively analyzed.

Result: All the patients were preoperatively examined with IT and the suspicion of a PC has been formulated in the 11% of the cases (3/27 of patients). During LAP washing and peritoneal biopsy was performed in all the patients. The diagnostic and therapeutic choices were subsequently done on the basis of intraoperative results. The PC has been documented through the explorative LAP in the 25% of the cases (7/27 of patients, 3 macroscopic and 4 microscopic); accordingly therapeutic approach was modified in 14% of cases, as a result of the detection of PC which were not evidenced with preoperative IT.

Conclusions: LAP performed in patients with CC allows the detection of PC not previously evidenced through preoperative IT, thus modifying the therapeutic approach (curative or palliative).

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Laparoscopic (LAP) Versus Open (OPEN) Surgery in the Elderly Patient (EP) with Colorectal Cancer (CC): Retrospective Analisis

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Introduction: EP have a high incidence of CC, which may be associated with increased morbidity and mortality due to complex comorbidity and diminished cardiopulmonary reserves. The aims of this study were to compare the outcomes of LAP with those observed in OPEN in EP with CC (aged over 65 years).

Methods: 29 EP with CC, who underwent LAP (group A), were evaluated and compared with 11 controls treated by OPEN (group B) in the same period (2003–2007); all were evaluated with respect to the ASA classification, surgery-related complications, and postoperative recovery.

Results: No surgery-related death was observed in the A and B group. No pneumoperitoneum-related complications and conversion to traditional surgery were observed in the group A. With the increase in patients age, increased ASA classification was observed. No significant differences were observed in gender, Dukes' staging, types of procedures, in terms of mean operation time or hospital stay between group A and B. The overall morbidity in the group A was significantly less than that of the group B. Mean blood loss, time to flatus passage, and time to semi-liquid diet in the group A were significantly shorter than those of the group B.

Conclusions: LAP is a safe option for EP with CC and is associated with more favorable short-term outcomes in terms of earlier return of bowel function, earlier resumption of diet, and shorter hospital stay. It is also associated with less cardiopulmonary morbidity, which is an important complication after colon surgery in the elderly.

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Laparoscopic Left Hemicolectomy (LLH) for Colorectal Cancer (CC) in Obese (OB) and Nonobese (NOB) Patients

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Introduction: Obesity is a modern-day phenomenon that is increasing throughout the world. Obese patients carry a higher risk of wound and cardiopulmonary complications along with a higher incidence of comorbidity, all of which have the potential to affect outcome after a variety of surgical procedures. The data regarding outcomes after laparoscopic colectomy in OB and NOB are limited. The aim of the present study was to provide data to establish whether the LLH for CC in the OB represents a risk or, rather, a benefit for the patient.

Methods: The study included 27 consecutive patients who underwent LLH for CC. The patients were divided into two groups: 11 OB (body mass index [BMI] > 30) and 26 NOB (BMI <30). Patient characteristics, operative details, and postoperative outcomes were compared and analyzed.

Results Patient characteristics, including age, sex, ASA status, and disease stage, were not different between OB and NOB. Operating time was significantly longer in OB than in NOB. However, there was no significant difference between OB and NOB in time to first flatus, time to solid diet, length of postoperative hospital stay, or frequency of major and minor postoperative complications. There were no conversions to conventional open surgery and no perioperative deaths.

Conclusion The only difference between our two study groups was that LLH required a longer operating time in OB; morbidity and length of hospital stay were not increased. Thus, we believe that LLH is likely to become the treatment of choice for obese patients with CC.

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Laparoscopic Abdominoperineal Resection (LAPR) in Very Low Rectal Cancer (VLRC): Cases Report

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Introduction: Abdominoperineal resection is still the standard surgical treatment of anorectal cancers close to the dentate line; laparoscopic procedure has gained favor in the last decade and several issues have reported encouraging results: still, the use of laparoscopy remains open to debate. The main concern is the

risk of port-site metastasis and neoplastic dissemination. A longer follow-up period is required to evaluate the long-term efficacy of the procedure and its impact on survival.

Methods: The Authors report 4 cases of VLRC treated with LAPR. The abdominal phase of the operation was performed only through 4 small laparoscopic incisions. The perineal phase and the stoma were performed using traditional technique. The charts of patients were reviewed retrospectively; outcomes were evaluated considering surgical procedure, short and long-term results and survival.

Results: Mean operating time was 235 min. The length of hospital stay was 11,4 days. The mean number of nodes collected was 14 and the distal margin was 3,8 cm on average. There were no post-operative deaths. In the follow up no pelvic recurrence and port site metastasis was observed.

Conclusions: The outcomes of this report suggest that LAPR in VLRC is a reliable procedure, operating time and length of hospital stay were acceptable. Oncologic principles were respected: length of specimen, distal margin and number of nodes retrieved were quite acceptable. Pelvic recurrence frequency was nil. Long term results were comparable with those of other series. The method appears feasible and oncologically correct; however, further trials are needed to evaluate long-term results.

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A New Technique: Combination Isolated Limb Perfusion and Electrochemotherapy for Inoperable Melanoma in-Transit Metastases and Locally Advanced Squamous Cell Carcinoma of the Extremities

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Background: Hyperthermic isolated limb perfusion with melphalan and tumour necrosis factor-α is an effective treatment option for patients with extensive in-transit melanoma metastases and locally advanced non-melanomatous tumours of the extremities. Electrochemotherapy involves electroporation to potentiate the cytotoxicity of poorly permeant chemotherapy to palliate cutaneous and subcutaneous metastases of different histologies. The aim of this clinical analysis was to determine whether the combination of these two treatments were associated with increased toxicity and to evaluate the possible synergistic effect of isolated limb perfusion and electrochemotherapy in achieving locoregional control in patients with extensive in-transit melanoma metastases of the limbs or locally advanced extremity squamous cell carcinoma.

Patients: Ten patients with inoperable melanoma in-transit metastases or locally advanced squamous cell carcinoma of the limbs underwent hyperthermic isolated limb perfusion with melphalan and tumour necrosis factor-α and simultaneous electrochemotherapy with bleomycin in a prospective series at the European Institute of Oncology between January and August 2007.

Results: At a median follow-up of 10 months the overall response was 70%, with 40% complete response, 30% partial response and 10% no change. Local toxicity was mild to moderate in most cases and no systemic toxicity was observed. Two patients had progressive disease at their last follow-up.

Conclusion: Simultaneous isolated limb perfusion and electrochemotherapy for patients with extensive melanoma in-transit metastases or locally advanced squamous cell carcinoma of the extremities is a novel oncological approach with a toxicity profile comparable to isolated limb perfusion alone. Future randomized studies would be required to better determine the efficacy of this combined treatment modality.

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SNB for High-Risk Non-Anogenital Cutaneous Squamous Cell Carcinoma

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Introduction: Certain patients with Cutaneous Squamous Cell Carcinoma (SCC) have much higher rates of regional nodal metastases. SCC usually metastasizes through lymphatics with regional nodal metastases developing before distant metastases. Current management of regional nodes for SCC is controversial. This study aims to further validate Sentinel Node Biopsy (SNB) for SCC and the outcome of these patients following SNB.

Methods: 20 patients with SCC who underwent SNB between 1998–2007 were retrospectively reviewed. High-risk tumours included those greater than 2cm or grade 1 differentiation, and recurrent or ulcerating tumours. Patients with clinical or radiological evidence of nodal metastases were excluded. SNB was performed following lymphoscintigraphy and blue dye injection.

Results: The mean age of patients was 72.1 years. Median follow-up from SNB was 24 months. Tumour location included the head and neck (n = 11), extremities (n = 9), and trunk (n = 1). One patient had a positive sentinel node. This patient then developed regional recurrence 13 months after a negative neck dissection and is alive with progressive disease after 31 months. Two patients developed regional recurrence after negative SNB (1 is alive and disease-free, the other died of progressive disease). Of the remaining patients, 15 are alive and disease-free, 1 died of another malignancy and 1 was lost to follow-up.

Conclusion: This study shows SNB for high-risk SCC is feasible and allows early detection and treatment of nodal metastases. Currently SNB for SCC is not standard and requires further investigation to determine which patients would benefit from SNB.

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Colonic Localization of Myxoid Liposarcoma: Case Report

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Introduction: Myxoid liposarcoma approximately constitutes 20% of all mesenchymal malignancies preferably occurring in adults with prevalent localization in arts even if there are rare intra-abdominal locations: only 3 cases reported in the literature. We present a case of myxoid liposarcoma with colic localization outlining a diagnostic and therapeutic procedure through a literature's review.

Case Report: We observed a 37 year-old man in January 2007 because of colic pain in the middle abdomen, dyspepsia and constipation.

The CT with contrast agent showed a capsulated solid mass with net margins, lobules and adipose tissue component compressing and displacing small bowel. After incision we found a polypoid mass of 24 cm with extraluminal development arising from right colon. Total mass, terminal ileum and right colon were excised; an ileo-colic anastomosis was performed. According to the literature it was not practised any adjuvant treatment. After one year the patient presented a local peritoneal recurrences surgically excised.

Conclusions: The diagnostic process is not yet well defined. Only surgery and histologic examination are able to clarify lesion's nature. Also surgical treatment is not yet well established, although many authors suggest a total excision of lesion without reference to lymphadenectomy. As for the role of chemotherapy only one case was reported in the literature; myxoid liposarcoma is considered an histotype with intermediate degree of malignancy therefore it should be considered a potential malignant neoplasm and chemotherapy would be justified. Total surgical resection with or without adjuvant radio-chemiotherapy could have a strong impact on the prognosis and follow-up.

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Transanal Endoscopic Microsurgery (TEM) Joined to a Laparoscopic Colectomy for Colorectal Synchronous Lesions

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Background: In preoperative colorectal cancer it is frequent to find synchronous neoplastic lesions. Among these, 3% are other cancers, 33–35% are villous adenomas. Most of colorectal adenomas can be treated endoscopically, in 5% of cases they also need surgical treatment.

Materials and Method: From January 1995 to March 2008 in our Institution we treated 5 patients with rectal lesions by Transanal Endoscopic Microsurgery (TEM) joined to a laparoscopic colectomy for the presence of synchronous lesions. We performed Transanal Endoscopic Microsurgery for rectal cancer associated with a laparoscopic right emicolectomy for a voluminous villous adenoma (1 patient); a laparoscopic right emicolectomy for a T2 cancer associated with Transanal Endoscopic Microsurgery (TEM) for a rectal villous adenoma (2 patients); the remaining 2 patients underwent a Transanal Endoscopic Microsurgery associated with a left laparoscopic colectomy, to make easier the circular stapler transit.

Results and Conclusions: The use of this multimodal and mininvasive approach allowed the rectum preservation and a less invasive surgery.

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The Neoplastic Perforations of the Colorectum

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Perforation occurs as a complication in 3–9% of the patients affected by colorectal cancer, and in 12–19% of those affected by obstructing colorectal cancer. The most common perforation site is localized approximally by the cancer. In the case of distal colonic or rectal occlusion a diastatic perforation of the cecum can occur. Perforation can cause a local or diffuse peritonitis, although a diffuse peritonitis is more frequent. In most of cases the diagnosis is carried out by an explorative laparotomy. The aim of surgical treatment is, besides the acute abdomen resolution, the radical resection of the neoplastic intestinal segment. It is very important to perform an immediate resection of the tumour in order to remove the septical process as soon as possible, so avoiding peritoneal contamination by the neoplastic cells, which can spread from the perforation site. In this study we describe our experience in the treatment of neoplastic perforation of the colon. The most frequent treatment was the neoplastic one-step resection with the performing of colostomy; even if we seldom restored intestinal continuity immediately, an ileostomy was always performed. The obtained results show that the patients affected by the same cancer stage with neoplastic colonic perforation, present a worst prognosis than those patients with no complicated colorectal tumours and those with a neoplastic obstruction of colorectum alone.

Conclusion: According to literature, we can state that, whenever it is technically possible, the tumour must always be resected although it is still controversial whether to restore intestinal continuity immediately or not.

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Virtual Colonscopy in the Obstructing Colorectal Cancer

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Background: Incomplete endoscopic examination of the colon occurs in 5–10% of patients. It is due to obstructing cancer, excessive length of the colon, anatomical anomalies or adhesions. Virtual colonoscopy can explore the colic lumen with high specificity and sensitivity.

Materials and Method: From January 2005 to March 2008 we treated 31 patients with obstructing colorectal cancer not enabling a complete colonoscopy. All patients underwent a virtual colonoscopy, which revealed the presence of synchronous lesions (16%): pedunculated polyp (2 cases), sessile polyp (2 case), right colonic vegetating lesion (1 case).

Results: In all 31 patients we performed a follow-up colonoscopy after three months from the surgical treatment. No other endoluminal lesions were found, confirming the results of virtual colonoscopy. In our experience virtual colonoscopy presented 100% of sensitivity and specificity.

Conclusion: In a selected group of patients with insurmountable obstructing colonic lesions, virtual colonoscopy is a safe and non invasive method to evaluate the whole colon, avoiding possible surgical reintervention due to the finding of synchronous neoplastic lesions at postoperative follow-up endoscopy.

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Analysis of a 10 Years Experience Results in the Treatment of Pseudomixoma Peritonei by Cytoreduction, Peritonectomy and Semi-Closed Hyperthermic Antiblastic Peritoneal Perfusion (HIPEC)

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Purpose: Survival and disease-free interval in the treatment of pseudomixoma peritonei (PMP) by cytoreduction, peritonectomy, and hyperthermic antiblastic peritoneal perfusion (HIPEC). Our experience.

Materials and Methods: We performed 356 Operation for "Peritoneal Carcinomatosis", with 230 HIPEC. We operated 84 patients affected from PMP: 28 debulking without HIPEC, 3 cytoreduction associated to EPIC and 54 peritonectomies, cytoreduction and HIPEC by semi-closed technique. About those 54 patients PMP arose from appendicular adenocarcinoma in 38 patients (69,8%), from appendicular adenoma in 15 patients (28,3%), and from ovarian myxoid adenocarcinoma in 1 patient (1,8%).

Results: 11 patients (20,7%) presented major perioperative complications. No perioperative mortality registered. The 10 years survival, evaluated by Kaplan-Meyer survival analysis is of 81,8%, with a disease-free survival of 80% at 5 years and of 70% at 10 years. 41 patients (77,3%) are NED to a F.U. with a range of 1–120 months (mean 43 months). We performed unyvariate analysis, considering the PCI score, the completeness of cytoreduction (CC score), the pathological features of tumor and the preoperative systemic chemotherapy. The only statistically significative parameter was preoperative chemotherapy (p: 0,004).

Conclusion: About PMP, by now, no other treatment seems to be as effective as aggressive cytoreduction plus HIPEC. In a lot of cases, patients observed were treated only by surgical debulking without HIPEC because of ileum infiltration due to multiple previous non radical operations. The impact of preoperative chemotherapy, in our opinion, is due to a major aggressiveness of tumor in the patients treated.

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Preoperative Predictive Factors of Malignancy in Patients Affected by Main Duct/Combined Intraductal Papillary Mucinous Neoplasm of the Pancreas

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Introduction: Prognostic factors and natural history of Intraductal Papillary Mucinous Neoplasm (IPMN) have not been well defined. Although it is clear that overall IPMN has a more favourable prognosis than ductal carcinoma, some cases have a poor outcome due to the malignant potential. The differentiation of malignant IPMN from benign IPMN remains unclear. The aim of our study is to evaluate the role of clinicopathological features as preoperative predictive factors of malignancy in patients affected by main duct/combined IPMN.

Methods: We enrolled 22 patients affected by main duct/combined IPMN and underwent to radical pancreatic resection. In 14 cases, the evaluation of CEA and Ca 19–9 levels in pancreatic juice was performed. The clinicopathological features and pancreatic juice analysis were correlated with histological findings.

Results: 86.4% of the patients were symptomatic. The histological findings revealed an IPMN adenoma in 2 patients (9.1%), an IPMN borderline in 5 patients (22.7%), and IPMN carcinoma in situ in 1 case (4.6%) and IPMN carcinoma in 14 patients (63.6%). The presence of mural nodules (80.0% in malignant vs 28.6% in benign, p=0.02) and the size of the neoplasm (42 mm in malignant vs 14 mm in benign, p=0.03) were the only statistically significant predictive factors of malignancy. The levels of serum and pancreatic juice of CEA and Ca 19–9 were not statistically different in the cases of benign IPMN respected to malignant form.

Conclusions: Our findings suggest that tumor size and mural nodule were predictive factors for diagnosis of malignancy in patients affected by main duct/combined IPMN.

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Mucocele of Pneumatized Anterior Clinoid Process: A Case Report

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Introduction: Mucocele of pneumatized anterior clinoid process is rare and can be complicated by optic nerve dysfunction. We present a case of a misdiagnosed anterior clinoid process mucocele (ACPM) treated by transnasal endoscopic approach one month after visual loss had occurred.

Case Report: In October 2007, a 53-year-old woman was referred to the Ophthalmologic Departement of another hospital for a left sudden visual loss. CT and MR highlighted inflammatory tissue in left posterior ethmoid. The patient was treated with antibiotics and steroids; a diagnosis of left retro-bulbar optic neuritis was rendered. One month later, the patient came to our Department; MR revision showed an ACPM with erosion of the optic canal. The mucocele was drained by transnasal endoscopy under general anesthesia. Four months after surgery the sphenoidotomy was widely patent; no recovery from visual loss was obtained.

Discussion: Whenever an ACPM occurs, dyplopia, retro-orbital pain, visual loss or blindness may develop. Visual disturbance can be caused by optic nerve compression and/or by an inflammatory neuropathy. The diagnosis is based upon imaging evaluation by MR and/or CT. Mainstay of treatment is surgical drainage; transnasal endoscopy may be an effective approach in the treatment of ACPM .

Conclusion: When dealing with monolateral sudden visual loss, a prompt skull base imaging evaluation is necessary to rule out the presence of spheno-ethmoidal expansile lesions. ACPM should be included in the differential diagnosis. Steroids and antibiotics should be immediately administred; in presence of visual loss or blindness, a surgical drainage of the mucocele is mandatory.

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Endoscopic Horizontal Partial Laryngectomy by CO2 Laser in the Management of Supraglottic Squamous Cell Carcinoma

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Aim: To evaluate the results of endoscopic horizontal supraglottic laryngectomy (EHSL) by CO2 laser. Patients and Methods: Between 1996 and 2005, 78 patients underwent a HSL with an external approach, 70 underwent laser EHSL, as treatment for supraglottic laryngeal squamous cell carcinoma (LSCC). We evaluated oncological endpoints, comparing the external and the endoscopic approach.

Results: Among patients primarily treated by EHSL, the 5-year disease specific survival (DSS) was 89% (vs 80% in the external approach group). Statistical analysis did not reveal significant differences between the 2 groups as for survival nor for organ preservation. In the EHSL group, the most significant clinical predictor for DSS is neck relapse ($p<0.0001$).

Conclusions: This study confirms the effectiveness of laser EHSL, that oncological outcome is similar to the external approach, that functional results are probably better. Neck management in this setting is fundamental to warrant the best survival.

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Pharyngolaryngoesophagectomy with Laparoscopic Gastric Pull-Up: Our Experience

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Objective: To evaluate affordability of pharyngolaryngoesophagectomy with laparoscopic gastric pull-up in the management of hypopharyngo-oesophageal carcinomas.

Materials and Methods: Between October 2002 and August 2007 we performed 16 pharyngolaryngoesophagectomy with laparoscopic gastric pull-up in patients affected by hypopharyngo-oesophageal carcinomas. Surgical procedure was performed in one stage by two surgical team. During the demolitive phase, a first team performed a circumferential pharyngolaryngoesophagectomy with bilateral (radical or selective) neck dissections and total thyrodectomy; after that the second team performed a gastric tubulization with transhiatal esophageal dissection. At last we restored the base of tongue- gastric continuity by a personal technique.

Results: In our sample, the intraoperative mortality was 0 %, whereas we recorded a post-operative mortality of 6,25 %. There were two anastomotic leakage in the third and ninth postoperative day that needed a surgical revision in one case (post-operative

morbidity: 12,5 %). Oral food intake was restored after 14,3 ± 9,5 days. Patients were discharged from the hospital after 18 ± 9,2 days.

Conclusions: We consider the pharyngolaryngoesophagectomy with laparoscopic gastric pull-up, a safe procedure with a low post-operative mortality and reduced post-operative complications.

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Anterolateral Thigh Cutaneous Flap vs Radial Forearm Free Flap: Our Experience in Oral and Oropharyngeal Reconstruction

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Aim of the Study: To compare radial forearm fasciocutaneous free flap (RFFF) versus the thinned anterolateral thigh coutaneous free flap (tALT flap), in oral and oropharyngeal reconstruction after oncologic surgery.

Material and Methods: Between January 2003 and January 2008, we surgically treated with a demolitive procedure 56 patients affected by oral and oropharyngeal carcinoma; in reconstructive phase we used a RFFF in 17 cases and in 39 a tALT flap.

Results: In patients treated with RFFF we had a 94,1 % of flaps survival; in cases treated with tALT flap we had a 93.5% of survival ($p<0.9$). Functional results at receiving site were comparable in both groups. Functional results at donor site were worse in the RFFF group, with permanent forearm movement impairment in 35.3 % of cases; in the tALT flap group we had no permanent impairment and we noticed only transitory gait impairment in 12.8% of patients.

Conclusions: In our experience, thinned ALT flap is comparable to RFFF in term of functional results at receiving site, but, having no limitation in availability of donor tissue, it allows a more extended resection of the tumor. Moreover, the donor site can be closed primarily with only an inconspicuous curvilinear scar left over the thigh and with a significantly reduced functional impairment.

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OSAHS Surgery: Diagnosis and Management of Failures. A Case Report

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Introduction: Post-surgical anatomical results often don't relate with functional outcome. Regarding Osahs we can defined surgical insuccess when one or more aspects (snoring, level of respiratory index and daytime somnolence) are not dominated by surgery. In this sense it is helpful to follow a simple check-list:

- Appropriateness of the patient selection
- Post-surgical anatomical and functional results
- Post-surgical weight increase

Case Report: A 53-year-old female with moderate to severe Osahs with snoring and EDS (ESS 14) was admitted for surgical procedure. Physical examination revealed a body mass index of 29.7 Kg/m 2. AHI was 29.5, and baseline and minimal O2 saturations of 93% and 66%. Multisite surgery was performed (Tonsillectomy, UP3, Septoplasty, inferior turbinate reduction with antero-inferior hyoid suspension). Short term follow-up revealed a moderate subjective satisfaction of the patient with good anatomical results. One year follow-up demonstrated a severe Osahs (AHI 34,5) with baseline and minimal O2 saturations of 95% and 65%. EDS was present. There was an improvement of obstruction sites at flexible fiberoptic examination with Muller manoeuvre. BMI was 31,8.

Discussion and Conclusion: When dealing with surgical failures is mandatory to re-evaluate every single aspects; a new physical examination plus polisomnographic evaluation has to be repeated. We advice the use of sleep endoscopy in order to rule out obstructive site otherwise missed at wakeful examination. In this sense, every single aspect (snoring, EDS, and increased AHI) must be promptly treated by using revision surgery, cPAP, weight control and even drug.

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Temporalis Myofascial Flap in Maxillary Reconstruction

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Introduction: Oncological surgery in the maxillary region is often aggressive and functionally mutilating. Surgical defects need to be reconstructed in order to offer the patient a better aesthetical and functional recovery.

Material and Methods: We retrospectively reviewed the medical charts of 9 consecutive patients who had been submitted to subtotal maxillectomy and immediate reconstruction with TMF at our department.

Results: Neither partial nor total flap losses were observed in our series. No injuries to the temporal and frontal branches of the facial nerve were noted. All the patients underwent post-operative radiotherapy, which did not seem to influence the outcome of this reconstructive procedure. All patients but two had good post-operative swallowing of a semisolid diet. Post-operative speech was good in 6 patients and fair in two; one patient had been previously laryngectomised and was therefore non-classifiable in this respect. Facial appearance was excellent in 4 patients, good in 2, fair in 2 and poor in one.

Discussion and Conclusions: In patients requiring a safe and rapid reconstruction, the temporalis muscle flap is a locally

available, thin and well-vascularised flap that can be raised easily and quickly. The use of a TMF in our series allowed closure of the palatal defects and at least partial restoration of the functions of the maxilla. In our experience, the temporalis muscle flap is a safe and reliable flap that can be used to reconstruct many surgical defects of the midface when the ideal flap is a flexible, tailored muscle with moderate thickness.

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Total Glossectomy and Pectoralis Major Myocutaneous Flap Reconstruction

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Introduction: Total glossectomy, with or without total laryngectomy, is a controversial treatment for advanced tongue cancer.

Materials and Methods: We reviewed the medical records of six patients who underwent total glossectomy and reconstruction with pectoralis major myocutaneous flap in our department from 2006 to 2007. All the patients were affected by extensive malignant disease of the tongue, oral cavity or oropharynx. Four patients were previously treated for the same tumor and presented to us with extensive local recurrence. Two patients were at the primary diagnosis.

Results: All the six patients in this series were male. Median age at surgery was 61,5 years (range 41–66 years). At the one year follow-up three patients are alive and well. One patient died of disease, and two died of postoperative complications.

In three out of four patients (75%) with a preserved larynx the postoperative speech was understandable, and they were able to eat a soft diet after several days from operation.

Discussion and Conclusions: Total glossectomy, with or without concomitant laryngectomy, is a mutilating surgical procedure that greatly affects the postoperative quality of life of patients. Anyway, postoperative quality of life is often worse when surgery is not performed. Post-operative speech and swallowing are often compromised, but if a good reconstruction is planned, good results are possible. The impact on survival of radical surgery in patient with advanced tongue cancer seems poor. In conclusion, in patients strongly motivated and with a good social and familiar background, total glossectomy can be proposed.

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Frontal Mucocele Communicating with an Arachnoid Cyst of the Anterior Cranial Fossa

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Introduction: Mucocele is defined as a sterile accumulation of mucous secretions into a paranasal sinus due to the obstruction of its ostium. Common presenting symptoms are proptosis, diplopia, ocular displacement, frontal headache. In rare cases mucoceles can have an intracranial extention.

Case Report: A 61-years-old man was admitted to our department because of frontal headache, left ocular symptoms, including photophobia, increased tearing and conjuntival hyperemia. No focal neurological findings were noted on admission. CT scan and MRI lead to diagnosis of left frontal mucocele with anterior cranial fossa extension.

During endoscopic procedure, cerebrospinal fluid leaked from the intracranial portion of the cavity. Brain was visible through the discontinuity of the posterior wall of the frontal sinus. The operation was converted in a frontal osteoplasty. The histologic result on tissue samples confirmed the presence of a respiratory epithelium in the frontal sinus, and of an arachnoid-like membrane in the intracranial cavity. Diagnosis of frontal mucocele communicating with an arachnoid cyst was then formulated.

The patient is symptom-free after eight months of follow-up.

Discussion and Conclusions: The case presented appears to be the first frontal mucocele communicating with an arachnoid cyst of the anterior cranial fossa. Presenting symptoms and radiological findings were typical of a mucocele with intracranial extension. The diagnosis of a mucocele communicating with an arachnoid cyst was made intraoperatively. The operation, started with an endoscopic approach, was converted to an external frontal osteoplasty to better visualize the posterior wall of the left frontal sinus. The treatment was successful.

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Collagenous Fibroma (Desmoplastic Fibroblastoma) of the Hypopharynx

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Introduction: The collagenous fibroma (CF), also known as desmoplastic fibroblastoma (DF), is a rare, benign, slow-growing, fibroblastic-myofibroblastic soft tissue neoplasm. The upper aerodigestive tract is an uncommon site of origin of this lesion. In the English literature are reported only three cases of collagenous

fibroma involving the palate, and one case involving the parotid gland. To the best of our knowledge, this case appears to be the first collagenous fibroma occured in the hypopharynx.

Case Report: A 69-years-old man presented with a huge intraoral polypoid mass, arising from the right postero-lateral wall of the hypopharynx. Presenting symptoms were dramatic, and the patient was in a life-threating condition due to the sudden obstruction of the upper airways by the mass. After the resolution of the critical situation, a complete surgical excision was performed. The hystologic and immunohystochemical diagnosis was collagenous fibroma (desmoplastic fibroblastoma).

Discussion and Conclusions: Collagenous fibromas are more prevalent in males, and occur between the ages of 16 and 88 years with a peak incidence between the fifth and sixth decade of life. The tumors have a wide anatomical distribution, especially in subcutaneous and intramuscular tissue. Microscopically, CF is a paucicellular tumour composed of stellate or spindle shaped cells within a highly collagenous or myxocollagenous matrix. CF usually presents as a painless, well-circumscribed mass of long standing duration and behaves in a benign fashion. Conservative marginal excision appears to be curative and no recurrence has been reported.

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Endoscopic Treatment of Tracheocele in Pediatric Patients

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Introduction: Congenital or acquired tracheocele (T) is air-filled diverticulum of tracheal pars membranacea. Described in about 30 cases, acquired T may be due to esophageal or tracheal surgery, oro-tracheal intubation, or increased intralunimal pressure through of weak area of tracheal wall. We report the case of a child with iatrogenic T, successfully treated by endoscopic brushing plus fibrin glue application.

Case Report: In October 2007, a 7-year-old boy was admitted for iatrogenic T to Department of Pediatric Otorhinolaryngology, Brescia-Italy. At birth, patient underwent esophageal atresia correction and several esophageal dilatation. In the last three years, he had recurrent pneumonia. Thus, rigid tracheobronchoscopy (RTS) was performed in June 2006. This procedure showed a blind ending pouch at the level of tracheal pars menbranacea, sited 1 cm above carina associated with purulent secretion in right main bronchus. For this reason, the child underwent courettege of the T by RTS. After few months of good health, patient had other recurrent pneumonia. At this admittion, persistent T was found at RTS. For this reason, he underwent brushing of T with fibrin glue application. In December 2007, tracheal endoscopic examination revealed complete obliteration of T. To date, the child is asymptomatic.

Conclusion: Acquired T is a rare disease in pediatric age. Recurrent pneumonia in patients undergoing previously esophageal or tracheal surgery should lead the suspicion of T. Brushing plus fibrin glue of T by RTS can be considerd a valide alternative treatment to traditional approach. Long-standing experience in RTS is mandatory to obtain good results.

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Lacrimal Pathway Stenoses in Pediatric Patients: Review of Personal Experience

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Objective: To assess the clinical picture, diagnostic work-up, and treatment strategy of congenital lacrimal pathway stenoses (CLPS).

Methods: From September 1997 to January 2008, 43 children were admitted for CLPS at Department of Pediatric Otorhinolaryngology, Spedali Civili, Brescia – Italy. Lacrimal obstruction was unilateral in 31 and bilateral in 12 cases (total lacrimal pathway treated: 55), respectively. Preoperative diagnostic work-up included a nasal endoscopy and ophthalmologic evaluation. When conservative treatments (lacrimal probing and intubation) failed, dacryocystography and CT scan of sinuses were added. Patients underwent unsuccessful lacrimal probing and, after that, received an endoscopically assisted lacrimal intubation. When lacrimal obstruction persists, transnasal endoscopic dacryocystorhinostomy (TEDCR) was performed. This surgical procedure was also carried out as primary treatment in patients undergoing previous external ocular surgery and/or in children older 3 years.

Results: Dacryocystography and CT-scan were performed in 14 patients. TEDCR was carried out in 19 lacrimal systems. During follow-up, 3 restenoses were observed, thus, a revision DCR was performed. To date (mean follow-up: 35 months), all children are symptom free.

Conclusions: Conservative managements are the first procedures to perform in children with CLPS within the first years of life. When these treatments fail, TEDCR may be considered a valid surgical option. This surgery is safe, less invasive, well tolerated, and reproducible. Application of a careful preoperative diagnostic and therapeutic algorithm for CLPS and collaboration with Ophthalmologist are the key point to obtain successful results.

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Treatment of Malignant Parotid Gland Tumors: Our Experience

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Objective: The best treatment of malignant parotid tumors is still debated. The low incidence and heterogeneity of histology of primary parotid carcinomas makes these tumors difficult to evaluate.

Methods: 61 patients (40 males and 21 females) average age 60 years with a malignant tumor of the parotid gland over a 15-year period were analyzed retrospectively. Treatment consisted of surgery, radiation therapy or a combination. The effects of treatment modalities on locoregional control, the incidence of locoregional recurrences, distant metastases and survival rates were evaluated.

Results: Adenocarcinomas were obsereved in 30% of the patients (18), squamous cell carcinomas in 24% (15), adenoid cystic tumors in 20% (12), undifferentiated tumors in 9% (6), mucoepidermoid carcinomas in 6% (4), malignant mixed tumors in 6% (4), and other types in 3% (2). All patients underwent surgery as primary modality. Neck dissection was performed only in 12 patients (30%), of whom 4 clinically N0 staged patients (but with high grade tumors) underwent elective neck dissection, 2 of them showed occult metastasis. Radiation therapy was performed in 20 patients (33%), depending on tumor size, node metastasis, residual tumor, perineural invasion and tumor grade. The overall survival rate at 5 years was 68% and the disease-free survival rate 52%. Pre-operative facial palsy were observed in 4 patients (7%), facial nerve sacrifice was performed in 10 patients (17%).

Conclusions: Surgical excision associated with postoperative radiation and neck dissection in selected patients (depending on tumor size, node metastasis, residual tumor, perineural invasion and tumor grade) provides a good locoregional control and disease free survival in patients with malignant tumors of the parotid gland.

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Management of Sinonsal Inverted Papilloma. Endoscopic Versus External Approach: Our Experience

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Introduction: Inverted Papilloma (IP) is a relatively rare benign sinonasal lesion characterized by an high rate of recurrence, local aggressiveness and are associated with malignancy. Aim of this work is to review our experience of the management of inverted papillomas.

Methods: We retrospectively reviewed all cases of IP that presented to our unit over a 20- period from March 1990 to March 2008. Charts were reviewed for standard demographic data, operative technique, adjuvant approaches, complications, and postoperative follow-up.

Results: 56 patients (34 males and 22 females, average age 52 years) with sinonasal IPs were observed and treated. 35 patients underwent to transanasal endoscopic resection of the neoplasm and 21 were treated with external approach. In only one case we found a squamous cell carcinoma in a patient with also lung metastatic lesions 3 years after primary surgery. 12/56 patients had recurrence after 12–84 months (mean 42 months). The average hospitalization time was 8 days for the external approach versus 4 days in endoscopic approach.

Conclusions: According to literature endoscopic resection of IPs seems to be more effective then external approach for better local control of the tumor, for a lower rate of recurrence and lower average hospitalization time. Long-term follow up is recommended to detect recurrence, as disease can become quite extensive before it becomes symptomatic. The examination of sierologic and molecular markers in detecting early stage recurrence and malignant transformation seems to be the most promising field of research in the future.

Orthopedic Surgery

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Opponensplasty by Extensor Indicis Proprius for Low Median Nerve Palsy

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Loss of thumb opposition is frequently observed in severe carpal tunnel syndrome, after median nerve trauma at the wrist level and after hyatrogenic injuries of the motor branch of the median nerve for the thenar muscles.

A number of tendon transfers can be used to restore thumb opposition, that differ for direction, excursion and donor site impairement.

Extensor Indicis Proprius transfer has been used to restore thumb opposition in 11 patients with a severe median nerve palsy (7 CTS, 1 median nerve trauma, 3 hyatrogenic injuries of the motor branch to the thenar muscles).

Results have been evaluated with a follow-up from 6 months to 2 years comparing the pre and post-operative values of palmar abduction, thumb opposition in the Kapandji scale, pinch and grip stength.

A significant increase of all these clinical parameters has been observed in all but one patient.

No significant impairement of index finger independent extension has been noticed.

Technical problems due to the shorteness of the tendon transfered and to the distal insertion are addressed and solutions are suggested.

In our experience Extensor Indicis Proprius transfer is a reliable and successful operation to restore thumb opposition in low median nerve palsy.

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Trapeziectomy and Suspension Artroplasty for Rizoartrosy's Treatment

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A retrospective study has been conducted to evaluate medium and long term results for the surgical treatment of Rizoartrosys. From 1995 to 2006, 58 pz. (54 women and 4 men for a total of 64 trapezio-metacarpal articulations) have been treated by suspension artroplasty. This technique complains a total trapeziectomy followed by a ligamentous reconstruction obtained from FRC tendon emisection. The obtained stripe is fixed at the base of first metacarpal bone by mini-reabsorbable anchor and provide to suspend it. All patients complained pain, functional limitation and reduction in the Grip. The average age was 60 years (range 42–77) and the average follow up was 8 years (range 2–12). The results were obtained by using subjective evaluation from questionnaire DASH and VAS scale; objective measurement of palmar and radial abduction degree, Kapandji's opposition, Grip and Pinch strength and radiographic evaluation pre-post surgery of the scapho-metacarpal space. The 82% (53 pz.) presents excellent or good (low residual pain) satisfaction, 16% (10 pz.) presents " pain after heavy strains " and only 2% (1 pz.) complains " no pain resolution ". The 100% of the examined patients presents Pinch and Grip improved, compared with controlateral, as well as for MF ROM. The little reduction of the scapho-metacarpal space (less than 5 mm), showed by radiographic evalution, doesn't appear related to clinical outcome. Based on these results, the proposed intervention appears a valid procedure that allows optimal resolution of pain, good recovery of motion and strength, and low incidence of complications.

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Triscaphe Arthrodesis versus Radial Osteotomy for the treatment of Kienböck disease. A Retrospective Study

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Aim: Kienböck's disease is most frequent and well known among the osteonecrosis that involves the wrist. The aim of our study is to evaluate a medium-short follow-up on patients submitted to radial shortening osteotomy, and to evaluate a long term follow-up, on the cases dealt with Scaphotrapeziotrapezoid (STT) arthrodesis.

Methods: We retrospectively included 14 patients affected by Kienböck's disease from 1985 to 2003. We have used subjective parameters and also the objective criteria was measured. Lichtman classification was used to decide the treatment choice.

Results: Arthrodesis STT: At the 16.5 year average follow-up period, nobody showed articular degenerative alterations. None of the cases showed a lunate collapse. Radial shortening: After an average of 2.8 year follow-up, nobody showed degenerative lesions of the wrist or development of the collapse of the lunate bone. No patient was unsatisfied with the obtained results. Two patients from the STT group have declared to be satisfied, another one has declared to be fairly satisfied, and the others fully satisfied. Two patients from the radial osteotomy group have declared to be satisfied. The remaining patients were fully satisfied.

Discussion: Comparing the two techniques, although the follow-up period differs, arthrodesis STT seems to be associated to slightly inferior results compared to the radial shortening, from an objective and subjective point of view. The difference is probably justified by the absence of surgical trauma on the radio-carpal joint.

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Utilizzo Di Trapianto Di Cellule Staminali Nelle Pseudoartrosi Congenite Di Tibia

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The congenital pseudoarthrosis is one of the most challenging conditions in paediatric orthopaedics Congenital pseudoartrosis involves frequently the tibial bone which presents spontaneous fractures that do not consolidate. The traditional treatment of the tibial non union is characterized by repeated surgical procedures (intramedullary nailing or externar fixator) which often failed with severe disability and sometimes amputation. In our institution we use autogenous mesenchymal stem cells (MSC) to enhance bone repair and regeneration. We perform our technique in 15 patients affected of tibial congenital pseudoarthrosis. The first step of the surgery is bone marrow aspiration from the

iliac crest of the patients by an anterior or posterior approach to the iliac crest in general anestesia. The second step is the surgical stabilization of the non union center using an external circular fixator or an intramedullary nail, previously we treated the non union area by curettage. The surgical time ends by the implant of a packed of lyophilized bone graft with autologous stromal cells and growth factors in the bone lesion.The firsts results show a bone healing in 90/180 days. The statistical analysis showed that MSCs generated from the iliac crest are more osteogenic than those generated from the affected tibia, and that autologous factors do not influence their osteogenic potential.

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Trasposizione Del Tendine Tibiale Anteriore Nelle Recidive Di PTC

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Relapsing congenital clubfoot were treated by transfer of the anterior tibial tendon to the third-forth metatarsus or third cuneiform. We revised 870 surgical treatments for relapsing clubfoot made at Rizzoli Insitution from 1975 to 2005. Our serie included 26 patients (37 feet) treated with the tibialis anterior tendon transfert. Various associated procedures like bone osteotomy, posterior liberation and lateral approces (Evans, etc) were performed. The mean age of the patiens was 6 years /10 months (range 1y/11m-10y/2m). The mean follow-up was 23 years (range 11y/5m-31y/8m). According to the Laaveg-Ponseti clinical classification this surgical procedure was evaluated excellent in 4 cases, good in 15 cases, fairly good in 3 cases and poor in 4 cases. One of 26 patiens was re-operated because of the malfunction of the tendon. In 3 cases the result was not good because of pain and re-relapsing of the deformity. As complication we have some cases of ipercorrection which were related to the passively correctable at the time of surgery and early age of surgery (mean age 4y/6m). The place of the transfer (3rd, 4th metatarsus or 3th cuneiform) do not correlate with this complication. An x-ray examination were also performed. The tibialis anterior tranferred strength was normal in most of the cases. In conclusion transfer of the anterior tibial tendon corrects and stabilizes relapsing clubfeet by restoring their normal function of foot dorsiflexion/eversion.

Pediatric Surgery

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Lessons from the First 109 Laparoscopic Cholecystectomies Performed in a Single Center of Pediatric Surgery

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Background: Laparoscopic cholecystectomy (LC) is a frequent operation in adult patients, but it is seldom performed on children.

Patients and Methods: From January 1996 to January 2007, 109 patients were referred to our Unit. 9 of them were adults so our attention is focuse on the 100 pediatrics.Only one patient,with a main bile duct dilation at pre-operative echography, underwent a per-operative colangiography.

Results: Operating time was 45 minutes on an average. We recorded 3 anatomic anomalies:2 involving the bile duct and one cystic artery. We recorded 4 (4%) per-operative complications: due to instrumentation failure in one case and to a perforation of the gallbladder during the dissection step in three. We recorded 5 (5%) postoperative complications, four of which requiring redo surgery: 1 patient with bleeding from the cystic artery; 1 patient with the dislocation of clips positioned on the cystic duct; and two patients with lesions of the main bile duct, undetected during surgery, were treated by a choledo-jejunostomy on postoperative day 7 in one case, and by suture of the choleducus on post-operative day 5 on a stent positioned using ERCP, in the second case. The 5th was an umbilical granuloma. The 2 biliary complications occurred in patients, both aged over 14 yrs.

Conclusions: LC is a safe and effective procedure in children. Major complications can occur also with more experienced surgeons and are more frequent in teen-agers. An accurate and delicate dissection with a proper knowledge of the anatomy are key factors to reduce complication rate.

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Tissue Glue in Circumcision: a Prospective Study

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Introduction: Circumcision is one of the most frequent surgical procedures in the world where absorbable suture materials are traditionally used for wound approximation. The aim of this study is to present a new technique based on the use of cyanoacry-

late Tissue Glue (TG) instead of polyglycolic acid 4-0 interrupted suture for wound approximation and to outline its advantages in children circumcision.

Materials and Methods: A prospective randomized study was carried out on a group of 100 boys (age 6 months - 14 years) admitted to the Chair of Pediatric Surgery of the University of Pisa. 50 boys underwent surgery with TG procedure and 50 using the traditional technique. The operations have been performed by the same surgeon. Surgery time, pain score, post-operative complications and esthetical results were statistically evaluated.

Results: Data analysis showed that between the two groups there are significative differences in the operation time and in the aesthetic results (32 excellent in the TG group vs 3 in suture one). Edema was absent in the TG group while occurred in 7 cases in the suture one. No flogosis, infection, bleeding or dehiscence occurred. Post-operative pain results to be lower in the TG group but it was not statistically significative.

Conclusions: According to our experience, we feel like asserting that the use of TG for wound approximation in circumcision is a safe, reliable and fast procedure with excellent results and no complications. These are the reasons why it should be considered an attractive alternative technique especially for children.

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Prosthetic Testicular Implant in Infancy and Adolescence: Technicals Aspects and Results

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Introduction: Some congenital or acquired conditions can hesitate in empty scrotum. This situation is often associated with problems in the psychological development of the child, and so the placement of a prosthetic testis is virtually mandatory especially for bilateral absence.

Materials and Methods: Over the last 4 years, 20 boys, with average age of 11 years (range 5–22) underwent to the placement of 25 testicular prosthesis. 15 were monolateral and 5 bilateral as a consequence of orchidectomy in 10 patients (50 %), vanishing testis in 7 (35%) and testicular atrophy due to funicular torsion in 3 (15%). After a groin incision a plane is developed deep to the subcutaneous tissue in the direction to the neck of the scrotum. This channel is digitally enlarged until the prosthesis can easily be slid down. It is essential to firmly pull the testis down by external traction and to fix it to connective tissue by a non-reabsorbable suture.

Results: After a median follow-up of 25 months (range 3–51), no post-operative complications occurred. The cosmetic result has been defined as good in 19 children (95%) and sufficient in 1 (5%) who underwent to substitution of the testicular prosthesis with a larger one a few years after the first surgery.

Conclusion: According to our experience, the placement of testicular prostheses is a simple and safe procedure. As known, children take awareness of being a male at about three years of age and this is the reason why their placement should be as earlier as possible.

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Protocol for the Positioning of Central Venous Catheter in Child

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Background: We propose a protocol for the positioning of the central venous catheters (CVC) in the child to diminish the risks of complication.

Methods: We have analyzed data concerning CVCs insertions in our Institute from August 2003 to March 2008.

Results: We have positioned, by transcutaneous way, 244 CVC, 116 with landmark technique and 128 with UltraSound (US) technique. The types of catheter mainly implanted have been tunnelled and totally implanted catheter. In all cases it has been used intraoperative X-Ray to control the position of the tip. The puncture of the subclavian vein was necessary in the 20% of the case of the landmark group and only in the 2.5% of the cases of the US group; in all the other cases internal jugular vein has been approached. Total complications have been, in percentage, lesser in US group (8,5%) than in landmark group (16,6%); in particular the arterial puncture has taken place in 5.4% of the cases of the US group vs 8.3% of the cases in the group blind. The repeated attempts (more of 3 punctures) have been taken place in 3.1% of the cases in the US group and in 6.6% of the cases in the landmark group. No pneumotorax and hemotorax in both groups.

Conclusion: We can conclude that the use of the US-guide connected to a linear probe, the X-ray control and the approach to the internal jugular vein meaningfully reduce the risk of complications in children.

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Preoperative Arterial Embolization of Retroperitoneal Paraganglioma: a Case Report

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Background/Purpose: Paraganglioma is the preferred term for extra-adrenal pheochromocytoma. Being a chromaffin cell derived neoplasm, its manipulation at surgery strongly stimulates catecholamine release. This elicits the risk to trigger malignant hypertension, which is difficult to control pharmacologically. We present a case of preoperative arterial embolization of a retroperi-

toneal paraganglioma that resulted in a safe tumor removal with no intraoperative increase in blood pressure.

Patient and Method: A 15-year-old boy had a diagnosis of retroperitoneal paraganglioma. The tumor was located among right kidney, inferior vena cava and the caudate lobe of the liver. Preoperative management with alpha-blocker was undertaken. Furthermore, angiographic gel foam embolization of the feeding vessels was performed 24 hours prior to the surgical removal of the mass.

Result: Tumor excision via abdominal laparotomy was performed with no hypertensive crisis nor tachycardia through the whole procedure. Histological exam confirmed the diagnosis of paraganglioma and showed the presence of arterial microthrombi due to embolization.

Conclusions: Surgical resection of paraganglioma can be complicated by intraoperative malignant hypertensive crisis. This risk can be only partly controlled by alpha-blockers. A literature review shows only three cases of preoperative embolization of abdominal paraganglioma. Since in our experience preoperative arterial embolization avoided the risk of hypertensive crisis and severe intraoperative tachycardia, we believe this technique may represent a safe and effective method to excise a retroperitoneal paraganglioma with a reduced morbidity rate.

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Oesophageal pH/Impedance Monitoring in Children Treated for Oesophageal Atresia

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Background and Aim: Gastroesophageal reflux (GER) is frequent after repair of oesophageal atresia (OA).

GER-associated complications can manifest either early or later, then a precocious diagnosis and treatment are essential. PHmetry has been used for diagnosis of GER in patients with OA. However, this technique only detects <4 pH drops. Multiple intraluminal impedance (MII) evaluates retrograde bolus movement in the oesophagus independent of the pH. The aim of this study was to evaluate the incidence and characteristics of GER in children with OA using 24-hr combined pH and MII monitoring.

Materials and Methods: Twenty-two patients, who underwent primary anastomosis for OA with a distal fistula, were included in the study. All children underwent pH/MII monitoring at a mean age of 15 months (range 3–40). Reflux parameters were analyzed according to age (≤ or > 12 months).

Results: Reflux events were mainly non acid (76.4%), reaching the upper oesophagus in 72.9% of cases. Patients aged ≤ 12 months showed more non acid refluxes (89.2%), if compared with patients > 12 months of age (70.4%). A normal pH reflux index (RIpH) was found in 100% of patients ≤ 12 months of age, while RIpH was normal only in 28.6% of patients aged >12 months.

Conclusions: Our data showed that pHmetry underestimates the actual incidence of GER, especially within the first year of life. This may be due to milk feeding, which buffers gastric acid. MII monitoring allows a correct management of children treated for OA, avoiding onset of early or late complications.

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Laparoscopic Treatment of Deferential Reflux in Pediatric Varicocele Based on Preoperative Color Doppler Ultrasound Assessment

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Aim: The aim of the study is to evaluate the role of laparoscopy in the treatment of deferential reflux associated to the paediatric varicocele using preoperative Colour Doppler Ultrasound (CDUS).

Methods: 148 patients with a median age of12.4 years (range 7.1–16) were evaluated for a left varicocele. Preoperatively, all the patients underwent ultrasound scan assessment of testicular volume and CDUS to rule out reflux into the internal spermatic vein (ISV), deferential vein, or cremasteric vein. Patients with reflux only in ISV on CDUS were treated via a transperitoneal Palomo procedure performed as close as possible to the internal inguinal ring. Patients with dilated and refluxing deferential vein (s) on CDUS were treated by Palomo procedure combined with coagulation or clipping and division of deferential vein(s) with a retroperitoneal window widened toward the internal inguinal ring.

Results: In 126 cases (85.1%) CDUS showed reflux only in the ISV, whereas a reflux in both the ISV and deferential vein was observed in the remaining 21 cases (14.1%). Only 1 case (0.6%) of varicocele was caused by an isolated deferential reflux. No reflux in the cremasteric vein was observed. During a median follow-up period of 18 months (range 6–49 months), none of our patients experienced varicocele recurrence either clinically or according to CDUS scanning.

Conclusions: CDUS is reliable diagnostic tool for identifying any type of varicocele. Comprehensive laparoscopic treatment is possible in patients with multiple refluxing system.

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Basic Microsurgical Training: Our Experience and Learning Program

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Modern Microsurgery was developed in the 50's although the interest in performing micro-vascular sutures can be traced back

to the beginning of the XXth century. Technological innovation such as magnifying instruments (loupes, microscopes, microscissors, micro-pick ups, suture smaller than the 7.0) allowed surgeons to manage with smaller vessels and microsurgery turned from an experimental to a reliable clinical reality. These elements, surgeons' increasing experience and more complete knowledge of skin vascularization led to more complex procedures such as free flaps harvesting.This historical background allows us to stress that Microsurgery is "simply" an indispensable technique for all those surgeons who wants to perform Plastic and Reconstructive surgery at highest levels. The training is not simple and requires long periods of intensive study and practicing. In our opinion, microsurgical training should be started as soon as possible together with apprentice of basic surgical knowledge. In our Hand Surgery Department a training program is applied to all young surgeons, starting when they are still junior residents. Gloves and drainages at first are used for micro-stiches positioning practice, then animal models (usually chicken's femoral artery) and afterwards rats are used to obtain our purpose as far as the skill is reached to be able to operate on patients.The goal of this work is to describe the training program applied in our Department.

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Perineal Injuries in Pediatric Age

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Background: Perineal injuries are relatively uncommon in childhood. The main causes are impalement or blunt trauma; however, in every case of vaginal and anorectal injury, sexual abuse has to be excluded. Because of limited experience, few data concerning these injuries are published in pediatric surgical literature, so there are no therapeutic guidelines.

Patients and Methods: We analyze retrospectively 10 cases (2 males and 8 females; mean age 6 years; range 0–12) of perineal injuries admitted at our Operative Unit from January 2000 to March 2008: 2 pararectal injuries without anorectal damage, 4 perineal body injury with vaginal involvement in one patient, 4 anorectal injury with vaginal laceration in 2 cases. All but one patients underwent preliminary careful examination under anesthesia (EUA). In 9 patients primary wound repair was performed: 8 did not show any complication, 1 had a wound infection, requiring secondary colostomy. In one case we carried out primary colostomy and wound closure 2 weeks later. Colostomy closure was performed after examination of good sphincter activity (manometry and Peña muscle stimulator).

Results: The follow-up showed a positive outcome in all patients, with optimal aesthetic and functional results.

Conclusions: In children with perineal injuries, the difficulty in recognizing the extent of lesions demands to perform an EUA, to minimize potential mistakes in diagnosis and to achieve a proper treatment. Proctosigmoidoscopy, cystoscopy and vaginoscopy in girls are useful sometimes to estimate the severity of damage. Primary repair can be considerated the standard approach, but only after exclusion of severe anorectal involvement, that requires fecal diversion.

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Congenital Unilateral Absence of VAS Deferens Discovered during Inguinal Surgery: A Useful Clinical Sign

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Background: Congenital unilateral absence of vas deferens (CUAVD) can be incidentally discovered during 3% of inguinal surgery. It recognizes two different embryologic lines: abnormal development of the wolffian ducts, associated with congenital uropathies (19–26%) or mutations of Cistic Fibrosis Transmembrane Conductance Regulator gene, related to cystic fibrosis (CF) (up to 43%). We report 6 cases of CUAVD intraoperatively diagnosed and propose a careful post-operative screening to detect associated anomalies.

Patients and Methods: 3 patients showed CUAVD during inguinal herniotomy and 3 during orchidopexy. All patients underwent post-operative screening for CF (sweat and genetic test) and 3 uro-radiologic investigations to detect urinary anomalies that were already known in the other 3.

Results: 5 of 6 patients (83%) showed associated uropathies: 4 had an ipsilateral renal agenesis, with controlateral VUR in a case; 1 had a severe bilateral urophaty and a controlateral ipoplasic vas. No one had CF.

Conclusions: Accidental finding of CUAVD calls for investigations on CF and urogenital anomalies, which can be both present in a high percentage. Challenging questions are if it should be mandatory to investigate controlateral vas in paediatric age and which could be the best diagnostic tool to rule out CUAVD in renal agenesis patients who are affected in 33–50% of cases.

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Neonatal Sacculated Laryngeal Cyst: A Case Report (1.82:100.000)

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Introduction: The laryngeal sacculated neonatal cyst is rare; diverticulum manifests itself as a departure from laryngeal ventricle to the thyroid cartilage.

Case Reports: Male, born at 41 $^{+5}$ week by eutocia, birth weight 3,550 g, Apgar 6, 8 to 1'e 10'. For respiratory distress has undergone intubation and transferred to the Intensive Care. The chest X-ray showed pneumomediastinum and pneumothorax, pleural drainage solved by suction. In the second day, laryngoscopy did not seen the larynx. In the third, ECT and the NMR showed a cystic formation polylobed left approximately 25x12mms that required surgery through cervical lateral approach. The post-operative course was regular with spontaneous breath at third and resignation in the fifteenth. The follow-up to short and long term was normal.

Discussion: The incidence of congenital laryngeal cyst is 1.82:100.000. It stems from the migration of cells from embryonic stem laryngeal. The events can be severe with fatal consequences. A striking symptoms at birth is rare. Our patient presented respiratory distress early hours of life. A proper diagnostic provides for the ECT and laringoscopy. CT and NMR remain indispensable for location and extension of the mass. The conduct therapeutic endoscopic or traditional, is still controversial. In our case, because of the size of cysts and the clinical condition, we considered it appropriate to the traditional approach.

Conclusions: We believe that early detection and timely surgical treatment are necessary. Lack of complications and excellent results of the follow-up, prove the traditional approach we have taken.

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Congenital Eventration of Diaphragm: 5 Cases

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Introduction: Congenital eventration of diaphgram is the abnormal elevation of one or both diaphragmatic domes, given by muscular aplasia. Surgical treatment is the plication of the aplasic diaphragm.

Material and Methods: 5 cases of diaphgramatic eventration have been observed, from 2000 to 2008, at the Section of Pediatric Surgery of the Department of Pediatrics, Obstetrics and Medicine of the Reproduction of the University of the Studies of Siena.

Results: In 3 cases it has been introduced to the birth, 1 of these is bilateral and ha has respiratory distress and in 2 cases lately, with insufficient increase, vomit and dyspnoea. All the patients have been an operation of diaphragmatic plication, using a laparotomy. No complications occurred in the post-operative. In the bilateral eventration the patient is not survivor for the serious bilateral pulmonary hypoplasia and in 1 case we have recidivation, corrected with a second operation.

Discussion: Nobody has respiratory and gastroenterologic post-operative complications, owing to incorrect positioning of the organs or to a pulmonary insult. The surgery can be done with abdominal or thoracic access, and the Literature looks like there is no significant difference for morbidity and morbidity, which depend mainly by any associated malformations.

Conclusion: The diaphragmatic eventration is a clinical condition even fatal if not recognized and treated promptly. The surgery allows, in most cases, an immediate disappearance of symptoms and an excellent prognosis.

The approach to the diaphragmatic plication is not standardized and we can get good results using different surgical approaches on the basis of particular experience.

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Ovarian Pathology

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Introduction: The ovarian masses are generally rare in paediatric age. they are an unique group, which include a wide spectrum of diseases, from the ovarian cysts works them (not neoplastic) to the ovarian torsion, from the malignant benign neoplasias to that extremely aggressive with an incidence to 2–6:100.000 newborn each year and the malignant shapes represent approximately 1% of all the pediatric tumors.

Material and Methods: 42 cases of benign ovarian pathology have been observed with age from 5 days to 14 years, from 1992 to 2008, at the Section of Pediatric Surgery of the Department of Pediatrics, Obstetrics and Medicine of the Reproduction of the University of the Studies of Siena. In 14 cases the symptomatology was absent, in the others 28 cases the debut has been unexpected. In a single case it has been diagnosed a tumor of the granular cells, 7 years.

Results: In the asymptomatic cases of benign pathology only 8 underwent to exeresis of the cysts during other surgical operation. In the others 28 symptomatic cases the surgical operation is consisted in: 18 exeresi of neoformation. ovarian (4 in VLS), 9 oophorectomies (5 in VLS) and 1 derotaztion of ovary in VLS. In the case of the granular cells' tumor has been executed oophorectomy in VLS.

Discussion and Conclusions: Benign ovarian pathology is extremely varied, with a prevalence of the cystic neoformations. The clinical picture of debut can be never variable how much. In the first month of life, like in the adolescence, the follicular cysts are more frequent, that they are inclined generally to the regression. They can, however, to introduce complication like the torsion. The therapeutic approach therefore is closely correlated to the evolution of the same cysts. After the first year of age, neoplastic ovarian pathology is held in consideration and the treatment is essentially surgical. The laparoscopic approach is becoming the gold standard for the treatment of these pathologies.

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Balanitis Xerotica Obliterans: Risk Factors Evaluation

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Introduction: Balanitis Xerotica Obliterans (BXO) is shown to be a common cause of pathological phimosis in childhood with incidence varying from 10% to 40% (Merli et al., 1994; Andràs K. et al., 2005). Suspected multifactorial origin, including immune disorders, diabetes, genetic pathologies, psoriasis, vitiligo, thyroid gland diseases, Koebner phenomenon and decreased melanin production have been considered but aetiology remains uncertain at the present. Aim of this study was to evaluate and define the risk factors in children affected by BXO.

Materials and Methods: The study comprised 78 children (mean age 5.9 yrs., min 4- max 16 yrs) operated of phimosis between April 2004 and December 2007 in which BXO was histologically diagnosed. The variables considered for the study were: preputial jim (Koebner phenomenon), psoariasis, vitiligo, Fitzpatrick phototype, diabetes, immune alterations, alimentary allergies and genetics diseases. 219 children without phimosis have been utilized as control group (mean age 6.3 yrs; min 4 yrs – max 15 yrs). All the selected variables were assessed using univariate and multivariate analysis.

Results: Three parameters resulted significant in the univariate analysis were included into the multiple regression analysis that confirmed the importance of everyone of these factors in determining BXO: phototype 1–2, p= .000 (O.R. 0.23); preputial jim, p= .000 (O.R. 5.34); psoriasis p= .000 (O.R. 10.14)

Conclusions: These results demonstrate that the children with phototype 1–2 combining with the other two factors, preputial jim and psoriasis, have a very elevated risk to develop BXO.

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First Time Identification of LGR8 Receptor in the Human Gubernaculum: Preliminary Report

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Aim: The role of insulin 3-like hormone signaling in the testicular descent has been demonstrated. The purpose of this preliminary report was to demonstrate for the first time the presence of the Insl3- receptor (LGR8), in the human gubernaculum.

Materials and Methods: 7 gubernacula of cryptorchid boys and 6 gubernacula of non-cryptorchid boys were sampled, and analyzed with immunohistologic methods.

The samples were incubated at -80°C and embedded in paraplast. After deparaffinization it has been incubated and underwent to immunoistochemical analysis with specific monoclonal antibody for LGR8 receptor.

Results: Nervous cells presents in the human gubernacula demonstrated a positivity for the presence of LGR8 receptor.

Conclusion: It is a preliminary report, but this that we found was never described in the literature. Were are preparing samples to confirm the data with biomolecular methods.

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Peritoneal Dialysis (PD) in Extremely Low Birth Weight Infants (ELBWI)

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Introduction: Severe acute renal failure, due to hischemic and toxic injury, is quite common and accounts for high mortality in newborns. Peritoneal Dialysis (PD) can be a valid alternative to haemodialysis or haemofiltration .

Material and Methods: Three ELBWI (2 males, gestational age 23rd, 26th and 26th weeks, birth weight 630, 640 and 700 gr) were treated with PD for acute renal failure after a treatment with indomethacin for a patent ductus arteriosus. A neonatal Tenckhoff, single cuff, straight catheter was implanted, with a para-median entry-site. In order to start immediately PD and to prevent leakage, hystoacril glue was applied around the peritoneal cuff. A low volume continuous flow (<20 ml/kg/exchange) of a 2.5% dextrose dialysis solution was employed (dwell time: 30–45 min.; drain time: 15–20 min.).

Results: A favourable outcome was observed in 2 patients, while one died because of complications unrelated to renal failure or PD. In all the newborns PD started within the first 24 hours after catheter implantation, the exchanges were successfully performed for over one month. No leakage nor other catheter related complications were observed.

Conclusions: In ELBWI with renal failure, PD is feasible. Technical difficulties are represented by excessive catheter length and calibre. The large cuff is difficult to fix to the child's abdominal wall. This can be obviated by application of hystoacril glue, also useful in avoiding leakage and allowing an immediate PD start.

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Pneumatic Reduction of Intestinal Intussusception in Children: Our Experience

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Background/Purpose: The efficacy and safety of pneumatic reduction in childhood intussusception is well documented. The success of this procedure is related to early diagnosis, team cooperation and presence of lead points. This study aims to determine the incidence, management and outcome of intestinal intussusception in the paediatric population managed at our centre.

Methods: We performed a retrospective analysis of all intussusception cases diagnosed by ultrasounds at Department of Pediatric Surgery from 2003 to 2007. Patients included 23 chlidren from 3 months to 4 years. We excluded three cases of secondary intussusception which presented with an intestinal obstruction and peritonitis. Pneumatic reduction was attempted under general anesthesia. The median age of patients was 2,2 years.

Results: Overall efficacy of pneumatic reduction was 76%; laparotomy and manual reduction was necessary in 5 cases (24%), one of which needed intestinal resection. There were 2 recurrences.

Conclusions: Air pressure enema is a simple and low-cost procedure.

In literature, patients' age and other adverse features has been related to a low success rate.

The current study support the assumption that there is no significant correlation between age and efficacy of air enema reduction. Peritonitis and/or sepsis are the only situation universally accepted as too risky to attempt pressure enema.

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A Case of Endoappendicular Cutting Foreign Body: What We Learned

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Introduction and Aims: The ingestion of foreign body is quite frequent in paediatric age, but there are some conditions, where surgical treatment is mandatory, for the risk of visceral perforation. The most common sites where the foreign bodies stops are the pylorus and the ileo-ciecal valve. The endoappendicular positioning is rare, and when it occurs, usually causes perforation or occlusion with typical acute appendicitis. We present a case of asymptomatic endoappendicular foreign body and we discuss the approach according to the Literature.

Case Report: C.M. a two years old girl, swallowed casually a cutting edge of a knife (1 cm) and she was admitted to paediatric unit of our hospital. She was submitted to an abdominal X-ray, which showed the cutting edge positioned in the stomach. Three hours later endoscopy was performed and the foreign body was not found. The next morning a new abdominal X-Ray was done and it showed the same beyond pylorus. So after three days a new abdomen X-ray was done and it showed the foreing body in right iliac fossa. Four days later, waiting the evacuation of foreign body, an other abdomen X-Ray and US were done, without any modification of position. So after a gastroenterological consult, despite the clinical picture was normal, a CT scan was performed: the foreing body was in the right iliac fossa without signs of perforation or abscess. Two weeks later there weren't substantially modification of abdominal X-ray, finally we were called for consultation. The baby was completely asymptomatic but the parents were obviously very concerned. The morning after we performed coloscopy, and the foreign body was not found inside colon and terminal ileum. During the same anestesiologic section, a mini-laparotomy (Rockey-Davis) was performed, the appendix was exteriorized and the fluoroscopic examination showed the foreign body inside it. Appendectomy was done and the child was discharged three days later.

Discussion and Conclusions: In our hospital the management of foreign body is performed in paediatric unit. We were called eighteen days after the admission of patient and in our opinion some mistakes were done in this case. After the ingestion the lonely test to show the real position of a foreing body is the barium swallow. The second one was to undergo the child to endoscpy after three hours, without an immediate pre-endoscopic abdomen X-Ray. The last mistake was to perform CT, without any clinical sign of perforation or peritonitis.

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A Rare Case of Hematopiocolpos

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Introduction and Aims: The transverse vaginal septum is a rare congenital female anomaly and it presents an incidence of 1: 21.000 to 1: 16.000 female births and it may lie on the upper, middle or in the lower third of vagina with a relative incidence of 46%, 35%and 19% respectively. This situation causes an obstruction of female genital tract and it can become symptomatic on newborn period with hydrometrocolpos or more often after menarche resulting in hematocolpos. The author present a case of hematocolpos, complicated by the presence of pus.

Case Report: B.A. thirteen-year-old female was referred to obstetric and gynaecological unit of other hospital for fever, pelvic pain, palpable hypogastric mass; a US and MR scan were performed, revelling a pelvic mass, apparently arising from uterine neck . A surgical open intervention was made, an a simple evacuation of pelvic blood were made, after position of pelvic drainage. Two months later the clinical picture presented in the same modality so the girl was referred to our unit. A US was performed and it revealed pelvic liquid mass arising to hypogastric region.

A gynaecological visit was performed and it showed a complete transverse vaginal septum. The girl presented also an important vesical gobe. The patient was submitted to an accurate gynaecological showed the presence of a vaginal septum behind the hymen, that it obstructed the vaginal entrance completely, so she was submitted to urgent surgical intervention. A cruciate incision was made. Around 250 ml of dark, bad smelling mixed pus liquid was evacuated. The cut edges of septum were sutured to vaginal mucosa with absorbable sutures and a Foley 18 CH catheter was inserted in vaginal lumen was inserted. A laparoscopic combinated approach was made in order to investigate the eventual pelvic involvement; a minimal quantity of blood mixed pus sample was seen and collected. Triple antibiotic therapy was administrated. During the postoperative period, a serial medications were performed through the Foley catheter. The girl was dismissed in fourth postoperative day, after the removing catheter.

Discussion and Conclusions: Hydrometrocolpos and hematopiocolpos are rare anomalies of female reproductive tract. The nature of the obstruction can vary . A vaginal septum is a result of failure in canalization of vaginal plate. Unlike his rarity a simple gynaecological inspection reveals his presence; so when a preadolencent girl with abdominal mass is seen, she must be referred to specialized unit. Unawareness among physicians and relative rarity of these malformations has resulted in errors in diagnosis, needless abdominal exploration as it occurs in our case. But high index of suspicion focused clinical examination and imaging help in early diagnosis. Centralization of care to clinicians with a special interest may preserve reproductive potential in these patients.

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Hirschsprung's Disease: Long Term Follow Up in 112 Patients from a Single Institution

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Background: Although Hirschsprung's disease is curable, a low mortality and a certain morbidity have been described by several authors. We present our experience with the treatment of Hirschsprung's disease at Gaslini Children's Hospital.

Materials and Methods: All patients who underwent a pull-through procedure between 1991 and 2007 were included. Data were obtained from a comprehensive questionnaire and from the revision of the notes. Results were subsequently described and compared with regard to age and length of aganglionosis.

Results: 479 patients have been diagnosed and treated at our center during the study period. One hundred and twelve of these patients underwent a pull-through procedure, completed the forms and were reviewed. Eighty patients had a classic form, 22 an ultralong. Complications occurred in 28 patients (25%). Postoperative enterocolitis was complained by 25 patients and constipation by 15 patients. Excellent to good continence was experienced by 84% of patients with classic forms and by 68% of patients with ultralong forms. A clear improving trend during growth was evident for patients with ultralong forms. Psychological self-acceptance, patients' perspective and cosmetic results proved to be significantly better for patients with classic forms.

Conclusions: Our study confirmed the complications and long-term sequelae that patients with Hirschsprung's can experience. Early diagnosis can minimise morbidity and mortality and prompt and adequate treatment can reduce the incidence of postoperative complications. Parents should be acknowledged regarding the progressive improvements of function that patients gain during growth, thus strengthening the need for continuative care and close follow-up.

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Nuss Mini-Invasive Technique in Pectus Excavatum: Results in 50 Patients from a Single Center

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Background: Although pectus excavatum is the commonest thoracic congenital malformation, its treatment is still unstandardized. We present the mini-invasive repair results at G. Gaslini Institute of Genoa, Italy.

Materials and Methods: Nuss mini-invasive repair avoids anterior scars. Correction is achieved introducing a retrosternal curved bar with thoracoscopic assistance and then rotated by 180°. Post-operative pain is managed by an epidural catheter. All patients included in the study were preoperatively evaluated (spirometry, thorax CT scan, echocardiography, and cardiac function test), and surgical details and results were analysed.

Results: 50 patients were operated and included in the study. Seventy-four percent of patients presented stress dyspnea. Spirometric impairment was observed in 28% and mitral valve prolapse in 30%. Eight patients were asymptomatic and underwent surgery for psychological reasons.

We experienced only one significant intra-operative bleeding that required a left emergency minimal thoracotomy.

Post-operative complications were: 2 pneumothorax (drained for 24 hours), 2 transitory pulmonary atelectasis, 1 hemothorax in a patient with coagulation deficit, 3 wound complications (1 infection and 2 hematomas).

Cosmetic score following surgery was 9.15 on average, in a scale from 1 to 10. None rated less than 7. The pain score with the same scale was rated 6.8 on average.

Conclusions: Nuss technique is safe, effective, and reproducible. Surgical indication is reasonable whereas a significant psychological factor is involved, even if no respiratory and/or cardiac symptoms are present. Complication rate is very low. Management of postoperative pain is the biggest challenge. Cosmetic results are excellent.

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Laparoscopic Proximal Roux-En-Y Gastro-Jejunal Diversion in Pediatric Age: Preliminary Results

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Background: Neurologically impaired children (NIC) have a high risk of recurrence of gastroesophageal reflux (GER) following fundoplication. Post-pyloric feeding tube is suggested whenever gastric emptying disorders occur, however dislocation and difficulty in feeding management suggest more aggressive procedures. The total esophagogastric dissociation (Bianchi's TEGD) is an alternative to fundoplication and laparoscopic gastric bypass is a frequently performed procedure for morbid obesity in adult surgery: its use is suggested to improve gastric outlet.

Aim of this paper is to present a preliminary experience on the laparoscopic Roux-en-Y gastro-jejunal bypass, associated with Nissen fundoplication and gastrostomy, to treat and prevent GER in NIC and gastric emptying disorders.

Materials and Methods: All NIC affected by dysphagia and respiratory disturbances diagnosed and followed up in our center were prospectively included in the study and underwent a ocmplex laparoscopic procedure, includine: 1) hiatoplasty; 2) Nissen fundoplication; 3) Jejunal-jejunal resection; 4) 20 cm Roux-en-Y jejunal anastomosys; 5) anastomosys between jejunum and stomach; 6) gastrostomy.

Results: In a 12 months study period 8 NIC were included in the study and underwent the described procedure, and consequently included in the follow up program. All cases were fed on post operative day three, without complications. Outcome was clinically evaluated and confirmed by X-ray contrast study, showing a prompt gastric empting.

Conclusions: This technique proved to be safe, effective, and reproducible, as demonstrated by our data. Gastric empting is facilitated and GER is greatly reduced. However, further studies and long term follow up are required in order to confirm these preliminary results.

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Acute Severe Post-Traumatic Pancreatitis in Childhood: Our 13 Years' Experience

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Objective: Acute pancreatitis is rare in children. Our 13 year study evaluated the incidence,the discharge time and the complications encountered in "Acute Severe Post-traumatic Pancreatitis" (ASPTP).

Patients and Methods: We reviewed 12 cases of ASPTP treated at between 1995 and 2008. Criteria for inclusion: abdominal pain with or without nausea, vomiting, serum amylase >3 times normal, Glasgow index >3 and CT and/or US abnormal pancreatic findings.

Results: 12 patients were evaluated. The cause of ASPTP was related to a traumatic event (motor vehicle, bicycle accident, other). In 42% of the cases (5/12), ASPTP was resolved only pharmacologically while in 58% of the patients (7/12) a percutaneous or surgical solution was required (4 external pancreatic pseudocysts drains with US or CT assisted placement; 3 surgical treatments). Complications were noted in 7/12 cases (6 pseudocysts; 1 pancreatic fistula); all resolved after a percutaneous or surgical treatment. Average hospitalization time was 45 days. No mortality was observed.

Conclusion: In our experience,trauma was the leading cause of acute severe pancreatitis.This cause must always be taken into consideration as a timely solution (pharmacologic, percutaneous or surgical) is associated with a low rate of morbidity and a lack of mortality. These findings are also supported by the current literature.

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Pediatric Giant Cystic Lesion of the Pancreas: is it Possible a Sure Preoperative Diagnosis?

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Introduction: Cystic tumors of the pancreas are relatively rare and include an heterogeneous group of lesions, which vary from benign (needing follow-up imaging to document stability) to invasive masses (requiring surgical removal).

Most of these lesions have characteristic imaging features and the differentiation between them is important to help guide treatment and prevent unnecessary surgery.

We report a case of rare giant cystic pancreatic hamartoma with no sure imaging features treated with surgery.

Case Report: A two years old boy was admitted to our Department with a history of abdominal distension. Physical examination revealed an abdominal swelling with a palpable mass. Blood and urine examinations were normal. Ultrasonography and CT scan showed an abdominal multilocular cystic mass, probably arising from pancreas, sized 16 x 13 cm, not infiltrating, with features of vascular malformation. Laparotomy confirmed a multilocular cystic mass originating from the head of the pancreas and we performed, after a benign histologic examination during the surgery, a total cystectomy with pancreas preservation. Hamartoma is revealed by final histologic examination. No complications and recurrence occurred during the five-month follow up period.

Discussion: Many cystic lesions of the pancreas have specific imaging findings that allow to differentiate benign from invasive lesions.

Cystic hamartoma of the pancreas is a benign lesion characterized by an hyperplasia of mature normal cells and tissue with the same features of the native organ.

In our case for the huge size it was not possible conservative management, moreover ultrasound and CT imaging didn't allow an accurate preoperative diagnosis.

It is important to consider that not always is possible to perform a correct diagnosis by imaging and the surgery remain the gold standard for diagnosis and therapy of pancreatic cystic lesions.

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Free Floating Abdominal Cysts in Newborn Females

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Background: Abdominal cysts in newborns are uncommon and often diagnostic suspicion arises before birth as a result of ultrasound scans carried out during pregnancy. Prenatal ovarian torsion is a rare condition difficult to manage especially in the first days of life. We report and discuss the management of a free floating abdominal cyst detected on prenatal ultrasound.

Materials and Methods: The cases of antenatal abdominal cysts detected on ultrasound at the Department of Antenatal Diagnosis between January 2003 and January 2008 were recorded. Only patients with a free floating cyst were included in the study. Medical charts, abdominal ultrasound and surgical management were studied.

Results: Two out of 62 patients underwent surgery for a free floating abdominal cyst during the second day of life**.** Postnatal Ultrasound scan, Doppler ultrasound and laparoscopic exploration were useful to identify an unusual presentation of antenatal ovarian torsion with a complete atresia of the Fallopian tube.

Conclusions: The cases reported in this study suggest that a good clinical approach to all cases of abdominal cysts detected on prenatal ultrasound scans require postnatal abdominal ultrasound and laparoscopic exploration. No further radiological procedure are needed. Free floating abdominal cysts are strictly correlated with autoamputation of the ovary/tube complex.

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Is Contralateral Exploration Justified for Unilateral Inguinal Hernia in Female?

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Background: Controversy continues over the need to explore the asymptomatic contralateral groin in girls with unilateral inguinal hernia. The aim of this study is to identify any risk factors and the incidence of contralateral inguinal hernia.

Materials and Methods: Between April 1998 and January 2008, 320 consecutive girls, aged between 1 month and 10 years, with unilateral inguinal hernia, underwent surgical exploration of the contralateral inguinal side. Inclusion criteria were created. After surgical findings we analyzed the correlation between medical history and the incidence of contralateral inguinal hernia. Patients were divided into 8 groups following an age-range grouping.

Results: 110 patients were enrolled in this study. 69 with a right-side inguinal hernias and 41 with a left-side inguinal hernias; 47, 4% of these patients had a contralateral true inguinal hernia, 38% of the right-side and 63% of the left-side inguinal hernias. There were no correlation between medical history, age at surgery and presence of contralateral inguinal hernia. No risk factors were found.

Conclusions: Even if the study results could be in contrast with many study on literature, our findings suggests that contralateral exploration should be performed routinely in girls who have an inguinal hernia until 4 years.

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Neonatal Ovarian Cysts: Our Experience

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Background: The aim of this study was to outline the most appropriate therapeutic approach to be adopted in case of suspicious of neonatal ovarian cysts.

Materials and Methods: We retrospectively analyzed all cases detected between January 2003 and January 2008, with prenatal ultrasound (US) that revealed the presence on an echo-rare or echo-free area in the fetal abdomen with a suspicious of ovarian cyst.

After birth abdominal US blood tests were performed, and if abdominal US could not shown the nature of the cyst, a Magnetic Resonance Imaging with sedation was performed. All surgical procedures were performed with a laparoscopic approach.

Results: During the study period 72 women with a prenatal diagnosis of abdominal cyst were observed; 65 of these had a suspicious of ovarian cysts, and they were selected and enrolled in this study. After a clear diagnosis, we found 55 ovarian cysts. Cyst diameters ranged from 2.7 to 7.5 cm; in 24 cases the cysts measured more than 5 cm in diameter with a mean of 6,8 cm. MRI confirmed morphology and volume of the cysts, but did not give further details about their origin especially for cysts with diameter more than 5 cm.

Conclusions: Abdominal Ultrasound and laparoscopy are indicated to monitor all simple abdominal cysts; MRI seems to be not useful, especially in paediatric age where mild sedation is required.

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Correlation Between High-Resolution Ultrasound and Surgical/Pathology Findings in Patients with Suspected Appendicitis: Preliminary Report

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Background: Clinical diagnosis of appendicitis is often difficult and it is now commonly accepted that it is better and safer to proceed with surgical exploration when in doubt. The aim of this study was to evaluate the usefulness of ultrasound with graded compressed technique in cases with suspected appendicitis.

Materials and Methods: From a retrospective study a radiological classification of appendicitis was formulated associated with the surgical/histological degree. We than evaluated 92 patients prospectively, with suspected appendicitis that were enrolled in this study and managed following a new protocol based on the clinical and radiological experiences. In this study the ultrasonography was considered positive when the diameter of the wall of the appendix was greater than 7 mm and vascularization was increased or absent. In other cases it was considered negative because the patients were treated in a conservative manner.

Results: Of these 92 patients -53 females and 39 males- 54 patients underwent surgery while 38 were treated conservatively. Sensitivity of this technique was 98% and specificity was 40%; positive predictive value (VPP) was 94% and negative predictive value (VPN) was 66%.

Conclusion: Patients with suspected appendicitis could be managed with ultrasound only, suggesting an early approach for those patient which required surgery.

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Relationship between Comorbid Factors and Mortality in Patients with Necrotizing Enterocolitis

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Introduction: N.E.C. is one of the most common surgical problems encountered in contemporary neonatal intensive care units. At present, morbidity and mortality from N.E.C. remain high, and the optimal surgical management of these infants remains controversial. the aim of this study was to evaluate and compare the outcomes of newborns with Bells Stage II-III NEC treated with both primary laparotomy and primary peritoneal drenaige.

Materials and Methods: We retrospective reviewed the medical charts of patients treated at our Department for NEC between 1990 and 2007. Inclusion and exclusion criteria were created. Comorbid factors were identified and recorded for each infant. Primary treatment was either local drainage or laparotomy. A multiple logistic regression model examined factors influencing outcome was used.

Results: Between 1990 and 2007 a total of 39 infants weighing between 590 gr and 4200 gr were selected for the study. Mortality appears to be dependent of gestational age, intestinal pneumatosis and portal vein gas, and independent of birth weight.

The most important determinants of mortality were longer length of necrotic bowel and Bell Stage-II.

Conclusion: Our data suggested that mortality is indipendent of treatment and this suggets that survival of patients with NEC is still correlate with multiple co-factors.

Plastic Surgery

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Immediate Breast Reconstruction Using Becker Implants

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Introduction: Development of breast cancer treatment has determined a significant improvement in mammary reconstruction. Immediate breast reconstruction is an easier procedure and can decrease psychological impact in mastectomy patients. Now, it is possible to reduce surgical procedures by using submuscular permanent expanders.

Methods: Each Becker Expander/mammary device has a low-bleed, gel-filled outer lumen and an adjustable saline-fillable inner lumen.

Most commonly used implants are:

1. The McGhan® Style 150.
2. The Spectrum® breast implants with round or contour styles; surface can be smooth or textured.
3. Becker implants: pre-filled with silicone gel in the outer lumen (Siltex® Round Becker 25 and 50; Siltex® Contour Profile Becker 35).

Results: The main indication for the use of Becker expander/mammary prosthesis is breast reconstruction. However these implants can be used in case of hypoplastic and tuberous breast and in case of breast ptosis. They are usually placed under the pectoralis muscle or under the gland.

Permanent expandable implants offer unique long-term technical and psychological advantages.

Disadvantages include economical cost, port-related problems, and repeated requests by patients for volume changes. Possible complications are cellulitis, implant exposure, capsule formation, silicone and fluid leaks.

Discussion: In reconstructive breast surgery, the permanent tissue expander has become popular because it avoids expander-implant exchange and it gives the patient some control over the

final breast size. However it may be associated with a number of complications. So it can constitute a good reconstructive approach only in selected patients, after multidisciplinary evaluation.

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Psychological Asset and Quality of Life after Massive Weight Loss

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Introduction: Bariatric surgery is even more required by obese patients; with this type of surgery also increased the number of body contouring operations. In literature there is a lack of studies which assess psychological factors that can influence the results in terms of subjective satisfaction.

We performed this study in order to assess which clinical, socio-demographic and personality factors can influence subjective life quality in patients who underwent body contouring after bariatric surgery.

Methods: Twenty-four patients who had undergone bariatric surgery were assessed.

A first assessment was made one week before plastic surgery, by mean of: semistructured interview for clinical and demographic characteristics; Clinical Global Impression Scale for global psychopathology level; Hamilton scales for anxiety and depression; Structured Clinical Interview for DSM-IV Axis II Personality Disorders; and Short Form Health Survey (SF-36) for subjective Quality of Life (QoL).

A second assessment was performed passed six months from surgery, by SF-36.

Results: Neither socio-demographic, nor obesity-related, nor surgery-related variables correlate with the QoL after body contouring. This underline the value of subjective variables to produce patient satisfaction about his own health; in particular there is a significant correlation with the depressive personality. Patients with this type of asset could particularly benefit by operations which can make them aesthetically more pleasant and then socially more acceptable.

Discussion: These data, if confirmed by further studies, could give an useful advice in patient selection for body contouring after massive weight loss. However, further follow-up studies are advisable, assessing life quality passed one year from the surgery.

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Assessment of Nipple Sensibility after Breast Reduction

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Introduction: One of the main goals of breast reduction is the preservation of the nipple-areola complex (NAC) sensibility. There is often a lack of sensation in the immediate postoperative period, although the sensibility is recovered in a period varying from two to six months. In this study the authors evaluate some tests for precise assessment of sensibility after this surgery.

Methods: After precise anamnesis and evaluation of previous macromastia and ptosis degree, instrumental tests on the NAC were performed in all treated patients. Thermal discrimination thresholds (TDTs) were investigated by Termoskin, which measures the smallest thermal variation that the patient can discern.. Vibration perception thresholds (VPTs) were investigated using a biotensiometer, that measures the smallest vibration intensity discerned by the patient. Both the tests were performed on the NAC and on the four breast quadrants.

Results: The described tests are very useful to assess nipple sensation before and after breast reduction, particularly if compared with more simple methods such as two point discrimination. Both investigations can be carried out easily and are unobtrusive, and they show that the more conservative the technique, the better and faster is the sensation recover.

Discussion: Breast reduction in cases of high degree of macromastia or ptosis involves a considerable tissue rearrangement with the risk of cutting vessels and nerves. The described tests provide a good method to assess breast sensation and basing on them is confirmed that double pedicle breast reduction techniques are more conservative and allow a better recover of breast sensation in the postoperative period, in particular in vast reductions.

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Breast Reduction and Occult Breast Carcinoma

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Introduction: Breast reduction is commonly performed for macromastia, congenital asymmetry, or as a contralateral symmetry procedure in breast reconstruction. This study evaluated the incidence of breast cancer in breast reductions performed in our department over the last 5 years.

Methods: The authors reviewed 130 reduction mammaplasties between 2002 and 2007. Mammography was performed preoperatively and results were negative for masses or suspicious

microcalcification in all cases. A histological exam was performed on the removed tissue. The amount of breast tissue removed ranged between 320g and 1250g per side.

Results: 130 women underwent breast reduction between 2002 and 2007.Three cancers were detected :of these cancers, one was invasive and two were ductal carcinoma in situ. The amount of tissue removed in those cases was 600g, 550g and 750g.

Discussion: The authors evaluate the relationship between the amount of tissue removed and breast cancer risk within breast reduction. It is been hypothesized that breast size itself may be directly related to breast cancer risk. Assuming a relationship between the amount of tissue removed and the probability of detecting a cancer, the authors found that removing over 400g of tissue can detect high-risk premalignant lesions and occult carcinomas. So as a matter of fact there may be a reduction in breast cancer risk among women who have undergone breast reduction surgery. However this procedure could not be a replacement for prophylactic mastectomy in prevention strategies. It may represent an acceptable and beneficial alternative for the majority of high-risk women for whom mastectomy is unacceptable.

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Obesity Surgery and Body Contouring: an Algorithmic Approach

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Introduction: Obesity represents nowadays one of the main problems of public health in occidental world. Treatment of this pathology is complex and often the results are not stable in time. Development of a therapeutic algorithm, based upon morphologic classification of obesity, is a key point for successful treatment and long-lasting results.

Methods: By measuring Body Mass Index (BMI), waist and hip circumferences, waist/hip ratio, and by performing precise instrumental exams such as ecotomography, TC and MRI, different types of obesity are distinguished: central, peripheral, diffuse and dystrophic-district.

Results: The above classification allows to plan a personalized therapeutic iter, in which several specialists participate depending on the obesity type and clinical situation.

Central obesity requires at the beginning nutritional and psychological behavioural therapies; when this approach fails, bariatric surgery becomes necessary. Plastic surgeon operate, as the last specialist, in order to contour the body profile and correct the abdominal muscles diastasis.

Peripheral obesity is often resistant to diet therapy; so it is necessary to surgically remove fat not involved by overall metabolism.

Diffused obesity, the most common form, must be treated with a synergic approach by nutritionist, bariatric and plastic surgeon.

Dystrophic-district obesity includes rare forms such as Barraquer-Simons or Launois-Bensaude syndromes, which are resistant to nutritional therapy and to bariatric surgery. Plastic surgery represents the only possible therapy.

Discussion: The application of this therapeutic algorithm can overcome the limits of isolated and not much effective in long term therapies, going towards a global and long-lasting treatment, achieved through a multidisciplinary assessment.

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Head and Neck Reconstruction: Importance of the Concept of the "Reconstructive Ladder"

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Introduction: Plastic and reconstructive surgery should provide in post-traumatic, oncological and malformative cases a proper wound coverage and stability, followed by functional reconstruction of the defect. The reconstructive ladder is a useful way to systematically plan problem wound reconstruction; this basic principle must represent the central core of the young surgeon knowledge.

Materials and Methods: From 2003 to 2008, more than 5000 head and neck surgical procedures were performed in our Department by young surgeons for post-traumatic (29%), oncological (50%) and malformative (1%) cases. Range 2 – 94 years old, mean age 48 years. For simpliest operation, according to the "ladder" concept, direct closure, skin grafts and local flaps were performed by residents (70% of all cases). For the other procedures simple or composite flaps, both local or microvascular were performed by experienced surgeons with the assistance of the resident (30% of all cases). We observed both minor complications such as swelling, diastasis, dog ears, hypertrophic scar (25% of all cases) and major complications such as hematoma, sieroma, infection, partial or total flap necrosis, lack of satisfactory function (less than 5% of all cases).

Discussion: Reconstructive treatment options begin simply and become more complex as needed for a given defect. The first and most simple method is direct primary closure of the wound after débridement. The next option is wound débridement followed by placement of a split-thickness skin graft that are generally the first choice for management of problem wounds; they are technically easy and provide for quick closure. Débridement with local tissue rearrangement is the next option, followed by distant transposition flaps and microvascular composite tissue transplantation. The majority of problem wounds require distant flap coverage. The value of vascularized muscle as coverage for problem wounds has been well defined. A muscle flap consists of a muscle detached from its normal origin or insertion and transposed with an intact blood supply to another location. Musculocutaneous flaps are a composite of muscle and overlying skin. These flaps are considered the gold standard because they are bulky, able to fill large defects and obliterate dead space, malleable, and well vascularized. Microvascular composite tissue transplantation is the most complex method whereby a problem wound can be closed.

This technique is used when there is a large defect to be reconstructed and local or regional flap sources are inadequate or unreliable. Another treatment option is local tissue expansion: skin and soft tissue adjacent to the defect are preferred for defect closure because of the similarity in skin color, texture, and contour. The size, location, or zone of injury may preclude the use of adjacent tissue for expansion. Therefore, tissue expansion is somewhat limited. Microvascular composite tissue transplantation allows the use of distant flap tissue and is preferable in regard to both donor and recipient site results.

Conclusions: Plastic surgery Residents need to do a long training before they acquire skills to regularly apply in their practice the "reconstructive ladder" principles. Up to day many options are available to solve post-traumatic, oncological and malformative cases. Experience gained both as assistant and operator allow the young surgeon to properly do a pre-operative plan that, when general health status is not seriously compromised, allow an effective, stable and functional head and neck reconstruction.

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Management of Inferior Limbs Wounds in Outpatients' Department

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Introduction: Chronic wounds are an invalidating pathology, with difficult to treat and with remarkable social and economic impact. They involve the 3% of the population. We report the activity carried out in the Outpatients' Department of " Difficults Wounds Care" at U.O.C. of Plastic and Reconstructive Surgery of Foggia.

Materials and Methods: From 2005 to February 2008 120 patients have been treated (80 ♀ and 40 ♂) with chronic wounds of inferior limbs. Range 32 and 85 years old (mean age 58,5 years). Observed wounds were:

- Venous 40 patients (30 ♀ and 10 ♂);
- Vasculitic 5 patients (4 ♀ and 1♂);
- Mixed 35 patients (23 ♀ and 12 ♂);
- Post-traumatic 8 patients (6 ♀ and 2♂);
- Diabetic 32 patients (17 ♀ and 15♂).

Outpatients' department takes the advantage of the collaboration between different specialists (Vascular Surgeon, Diabetologist, Rheumatologist, Internist Doctor, Ecografist, Orthopaedic) and of the aid of a specialized nurse in Wound-Care. The types of advanced medications used are: hydrocolloid, hydrogel, alginate, polyurethane foam, inhibitors of the metalloproteases and antiseptic medications. In all the patients a contenitive bandage was always carried out, while elastic-compression bandages were referred to single patients afflicted by venous and mixed wounds (62.5%).

Results: Our study reveal how women (66.7%) are the most affected by inferior limbs' wounds. Venous wounds are the most frequent (33.4%) observed and in all it an elastic-compression bandage was performed. Steroid drug assumption, FANS and diabetes negatively influenced the steps of tissutal repair and extended the time of healing. In case of post-traumatic lesions in young people whose general healt status was not compromised and accepted to be operated (6,67% of our cases) the outcome was excellent. In all pther cases healing was 4 to 10 months (70.83%). For some patients (25%) the healing extended beyond 18 months, while for others (4.17%) up to the present not caught up the healing (beyond the 24 months).

Discussion: The patients who reached our observation showed a complicated clinical picture, compromised general conditions and they resort to multifarmacological treatments that easily interfere with ulcerative lesions' healing. Multidisciplinary approach allowed proper clinical and therapeutic organization of the patient. The right selection of the advanced medication lead to the repairing of the wound and reduced time of healing (70.83% of the patients catches up the healing in 4–10 months), painful and production of exudates; besides it concurs a good control of bad odour.

Conclusions: The treatment of inferior limbs' wounds is a continuous challenge for the Plastic Surgeon. A gold standard treatment still does not exist because every center applies own protocols. In our hands we can assert that the multidisciplinary management of the patient affected by inferior limbs' wounds, the use of personalized treatment protocols, the support of a specialized nurse, patient's compliance and continuing developments in the field of wound-care represent the best option for treatment of difficult wounds.

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Our Experience in Aesthetic Blepharoplasty: 5 Years Report

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Introduction: Eyes represent an important factor in the aesthetic of the face; periorbital region is the first one that suffers the effects of the aging: gravity, facial mimica, ultraviolet rays and recurrent inflammations determine, as times passes, dermatocalasis and palpebral blepharocalasis. Blepharoplasty try to solve these ones and correct adipose pseudohernias. It is important, for surgeon who is executing a upper and/or lower blepharoplasty, to estimate the ptosis of eyebrow, the ROOF, the adipose pseudohernias, the orbitary edge. This procedure can be executed in Day Surgery with local anesthesia and sedative.

Materials and Methods: From January 2003 to December 2007 72 patients were operated (22M, 50 F; range of age 45 - 68 years; mean of age 56,5 years). We performed 48 upper blepharoplasty of which 19 with suspension and 24 upper and lower blepharoplasty. In all cases of upper blepharoplasty, we used local anaesthetic injection, removing of a lozenge of skin including orbicular muscle (2–3mm) from the lateral angle to the medial one (necessary in order to recreate a new supratarsal fold). Successive step is the removing adipose pseudohernias, accurated haemostasis and intradermic suture with Prolene 6/0. In lower blepharoplasty, again local anaesthetic injection, skin incision 2 mm under

brow margin; subsequently the harnesting of a miocutaneus flap with separation of skin from orbicular muscle was performed. It continues with the opening of the septum, that allow fat hernation, then removed taking care of haemostasis. In our experience, usually, we do, in lower blepharoplasty, the suspension of a small orbicular muscle flap to periosteum near lateral canthal angle. Final closure consist of single stitches with Prolene 6/0, than steri strips. In both blepharoplasty, stitches can be removed in 5th day.

Results: We did not observe both upper (overcorrection, excessive fat removal, ptosis, badly set scars) lower (scleral show, ectropion, keratitis, glaucoma, diplopia) blepharoplasty complications.

Conclusions: Eyelids are delicate, thin structures: modest complications like extended swelling, adherent scars, haematomas or excess scars, can determine unsatisfactory results. An adeguate training allow an easy, reliable procedure, and it guarantees to the patient very satisfactory results reducing risks and complications.

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Our Experience of Scapholunate Dissociation

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Introduction: The dissociation *sl* is the most frequently cause of dissociativ carpal instability and can observed both an isolated lesion or associated with radial distal or scaphoid broken.

It is symptomatic alteration that results in a rupture of t scapho- lunate ligament.

Materials and Methods: From May 2003 to February 2008, 20 patients were operated (20% women; 80% male, mean of age 57 years) Cause: traumatic 72%; spontaneous in heavy worker 18%. Mean time between injury and surgery was 4 months.

The technique used is the "Linscheid and Dobyns": removed a tendon flap of 'ECRB or ECRL and across scaphoid and lunate, the scapholunate ligament reconstruction.

Results: Follow-up: 26 months. Solved of pain in 76% of cases, and return to work after 5 months. The 10% had stopped working and 14% had chose a less heavy work. The strength of recovery was never 100% as ROM, the 57% for 75%, the 30% for 60%, and 13% for 55%. Flesso-extension: 85% in 67% of cases, 70% in 20% of case, 50% in 13% of case. Radio-ulnarizzazione: 70% in 83% of cases, 45% in 15% of case, 30% in 2% of case. Prono-supinazione: 95% in 75% of cases, 70% in 20% of case, 50% in 5% of case. X-Rays evidenced a Terry Thomas sign reduction in all cases and his completed solution in 25% of cases.

Conclusions: Early diagnosis and rapid treatment of carpal legamentose injuries may prevent a serious arthrosis degeneration and loss of function of wrist. In our experience the results of surgical treatment of these instabilities are connected to time between trauma and diagnosis. Theoretical advantage to unify together only damaged joints, preserving all the other, allows only a carpal arthrodesis limited which can be a valid alternative for treatment of chronic pathologies of this districts. Thus radiocarpic mechanism is deeply modified. Results are not predictable and depend on how other joints will adapt to this new anatomical situation. By contrast, proximal bones chain fusion less kinematic consequences but are more challenging.

Best results, in terms of daily activity, grasping and ROM recovery, can be observed in those cases when at least two months FKT fore lose after surgical treatment and removal of K -wire.

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The Arrow Flap for Nipple Reconstruction: A Five-Year Experience

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Introduction: The nipple is a major landmark in breast anatomy. Its reconstruction is the final step in breast reconstruction.

Nipple projection is a critical parameter to evaluate a technique during the follow up.

In 2003 we proposed a modification of Thomas et al. technique and named it "arrow flap". We present now more data on arrow flap based nipples projection during a three-year follow up.

Methods: 40 patients underwent nipple reconstruction with the "arrow flap" technique from 2000 to 2005. All patients were women operated for breast reconstruction.

Nipples projection was measured peroperatively, and then, postoperatively, at last two times: two years and three years after the procedure.

Results: Two years after the procedure nipples had a mean residual percent projection of 46.6 (DS = 3.13).

After a year they showed an average 1% flattening (residual mean projection = 45.6, DS = 2.1).

Discussion: Nowadays, breast reconstruction has become a routine procedure, and patients have great expectations in term of pleasant results. In such a setting, the surgeon will better adopt the most reliable techniques.

After five year since its publication, the "arrow flap" technique still remains one of the most valid procedures to reconstruct the nipple compared to others.

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Laparocele: Concetti E Tecnica Chirurgica

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The laparocele represent on post operating serious complication (15% of laparotomy globally treated), characterized by an escape of the insides contained in the abdominal cavity across a

wall breach shaped during the scar consolidating phase of a laparotomic wound.

The scar tissue, unlike that healthy, not have a similar resistance and elasticity and, if exposed to the endoabdominal pressure stress, it cannot contrast the forces in plastic way and frequently it come up against laceration.

The first surgical techniques for the resolution of laparocoeli consisted in the lyses of connexions and in a direct approach of muscles and muscular band.

The biggest problems, however, were presented in any cases with loss of substance and impossibility for a direct closure of the abdominal wall.

A lot of methods were described for the reconstruction, whether with use of autologous tissue or with biomaterials.

Since eighty years of past century, with the introduction of biocompatible materials utilized like support prosthesis, the laparocoeli were treated with "Tension Free" technique, without tension and with prosthesis, at first in metallic material, after with not absorbable braid materials or absorbable materials, after that with not absorbable one filament like polypropylene or with one sheet mesh in ptfe-goretex.

Trabucco proposed "Tension Free Suture Less" technique, emphasizing minor consequences due to suture less on the mesh. Abbonante with reference to Trabucco proposed the "Sliding Mesh" using more heavy mesh without anchoring points.

We report our experience about this last technique that consist in 150 cases of great laparocoelis.

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New Perspectives in Mature Scar Treatment

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During the years, many different surgical and conservative technique have been proposed for scar treatment: steroids, compression, silicon gel, lasertherapy, radiotherapy, surgery.

Lipofilling is currently used all around the world for many clinical applications: for example, in aesthetic surgery, in case of aging face or in functional surgery, to treat burns' scars, post-traumatic scars or to correct post-surgical scars.

The adipose tissue is harvested with liposuction procedure, prepared with Coleman's technique and then injected by sharp, 0, 1–0, 2mm cannulas at the dermal-hypodermal junction of scar areas.

After 3–6 months follow-up, clinical and hystological features show a skin quality and thickness improvement; moreover lipofilling decreases pain and functional impediment.

In conclusion, lipofilling is a safe and simple procedure, especially for patients who already underwent the shock for an oncological demolition, and it shows a better scar correction than previous traumatic procedures.

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Microsurgical Reconstruction of the Middle Third of the Face: Our Experience

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The middle third of the face contains a lot of important structures. The upper jaw is important both from the aesthetic and functional point of view. It can be described as a geometric structure with six walls (hexahedron). The roof supports the ocular globe; the floor is the hard palate, with the palatine processes, and the alveolar processes; the medial wall is the lateral wall of the nasal cavity; the posterior wall contributes to the constitution of the infratemporal and pterigopalatine cavity; the anterior wall is the anterior surface of the face; laterally it continues with the zygomatic process. Most of mimic and masticatory muscles insert on the upper jaw; they form, together with the upper skin and intraoral mucous membrane, the lower eyelid, the cheek, the upper lip and the oral commissure.

The middle third of the face can be often involved by neoplastic processes that can cause serious damages to its noble structures.

The morfo-functional reconstruction of this district must be as suitable as possible and it has to consider a lot of parameters. The choice of the flap depends on the type, dimension and location of the defect, as well as on the valutation of the remaining defect of the donor area.

The authors show their experience in microsurgical reconstruction of the midface defects using the radial forearm free flap, rectus abdominis myocutaneous free flap, vascularized iliac bone graft and fibular free flap.

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The Management of Traumatic Microsurgical Emergencies

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Microsurgery was developed in the twentieth century by combining techniques of vascular surgery with an operative microscope, fine instruments, micro suture and new operative strategy and techniques.

Microsurgery is indissolubly bound to hand surgery. New aims of microsurgery nowadays are very distal reimplantation, or complex reconstruction performed in urgencies, which require a really skilled surgeon.

In Italy there are about fifteen hospitals with a microsurgical trauma service.

Currently the outcome of hand or finger amputation depends mostly to a proper management at the first aid centres.

In Italy from 2001 there is a national service (CUMI) for the management of all hand and microsurgical urgencies, which route all the cases to the closer, specialistic hand unit in order to treat the patient correctly and promptly.

In the last year in our department we performed about one hundred reimplant. With a percentage of survival near to 70%.

It Is essential that everyone who works in ER is able to recognize a microsurgical emergency , to treat it correctly and, if not, to manage the case conveying it to a specialistic centre as soon as possible.

Hand surgery does not consist in chopping finger during the night by lowest ranking junior surgeon to be able to go to bed ASAP for being fresh the following day in an aesthetic case.

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Breast Augmentation Using Inferior Emiperiareolar Skin Incision: Intraparenchymal versus Extraparenchymal Approach

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Introduction: Nowadays the inferior emi-periareolar skin incision has became the most common access in breast augmentation and in the controlateral simmetrization in case of breast reconstruction. This approach can be performed using the intraparenchymal or extraparenchymal via.

Materials and Methods: The aim of this study is to evaluate the morphological changes of parenchyma in imaging, the problem related, the vantages, indications and limits of the technique obtained in 20 patients undergoing to breast augmentation using the intraparenchymal approach (10 patients) and the extraparenchymal approach (10 patients) in the others.

Results and Discussion*:* Many surgeons, who use the inferior emi-periareolar skin incision, prepare the anatomic pocket for the prosthetic implant (sbglandular or submuscular) crossing, full-thickness, the parenchyma of the breast (the so-called intraparenchymal access). In our opinion, this approach causes a distortion of the gland, with a creation of a scar, that may create difficulties of instrumental interpretation during the currently breast screening procedures, especially when they are performed in young patients. For this reason, the authors prefer to place the prosthesis through an extraparenchymal access. In this particular approach the right plane for the creation of the anatomic pocket for the prosthetic implant is reached through a dissection between the parenchymal and the dermal layer of the lower pole of the breast. This particular technique avoids scars in the parenchyma with an important reduction of imaging artefacts. Moreover the isolation/detachment of the gland and the consequent skin retraction produce a better support and a projection of lower pole.

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Necrotizing Fasciitis: Early Diagnosis, Therapeutic and Reconstructive Issues

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Introduction: Necrotizing fasciitis (NF) is a rare infection of soft tissues with a high mortality rate. This rare disease can affect all the fascial structures with a particular preference for the fascial structures of the extremities, of the abdominal wall and perineum. Its origin is bacterial and it is supported by aerobic and anaerobic bacteria.

Materials and Methods: Authors report their experience of 6 cases of NF, occurred in the Unit of Plastic Surgery of the University of Siena in the last 2 years, analyzing the surgical treatment and the outcome.

Results and Discussion: As reported by the scientific literature, the NF is usually due to a poly-microbial infection (group A Streptococcus, Staphylococcus Aureus), while only in rare cases this disease has a monomicrobial etiology and generally occurs in patients with compromised general conditions (decompensated diabetes mellitus, immunodeficiency or immunocompromision). The fast diffusion of the disease and its high mortality rate make an early diagnosis mandatory, even if at the beginning phases the absence of specific signs doesn't allow to distinguish a NF from a common soft tissue infection. For these reasons, the early recognition of signs and symptoms, completed by instrumental investigations, permits a rapid diagnosis that allows surgeons to plan the right and appropriate therapy (focused antibiotic therapy, surgical debridement, VAC therapy and reconstructive treatments).

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Usefulness of Selective Capsulotomies of the Expanded Breast as a Remodeling Method in Two Stage Breast Reconstruction

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Introduction: The two-stages breast with tissue expander and prosthesis is nowadays a common method for achieving a satisfactory appearance in selected patients after a mastectomy, this technique is relatively easier and less invasive in comparison to reconstruction with autologous tissues, but requires at least to surgical procedures, and a variable time for the mammary expansion.

Materials and Methods: The authors report their experience about the effects of various types of capsulotomies, per-

formed in 33 patients after removal of the mammary expander, with the aim of emphasizing the convexity of the inferior pole of the breast.

Results and Discussion: The two-stage breast reconstruction with tissue expander and prosthesis is nowadays a common method for achieving a satisfactory appearance in selected patients who underwent mastectomy, but its most common aesthetic rawback is represented by an excessive volumetric increment of the superior half of the reconstructed breast, with a convexity of the profile in that area. A possible solution to limit this effect, and to fulfill the inferior pole, may be obtained by reducing the inferior tissue resistance by means of capsulotomies. Procedures for emphasizing the convexity of the inferior pole carried out in 28 cases. Results were assessed six months after the definitive implantation. Patients, procedure, final implants, subject and objective results have been discussed.

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Analysis of the Options in Treatment of Digital Mucoid Cysts

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Introduction: Mucoid cyst (MC) is a common disease, interesting hand surgeons, and consists in a ganglion of the DIP joint of fingers and usually occurs between the 5th and 7th decade.

The earliest clinical sign is usually longitudinal grooving of the nail, caused by pressure on the nail matrix, even without a visible mass.

The patient often has radiographic evidence of osteoarthritic changes in the joint or osteophytes.

Methods: We reviewed the most common treatment options compared to our experience.

The MC can be treated with intracystic injection of corticosteroids, cryotherapy, multiple simple incisions on every recurrence or with surgery.

Surgery must be radical down to the cyst base, involving also the covering skin, and the defect can be covered with a local rotational flap or a skin graft.

An alternative approach is a transverse incision lying over the DIP joint, to identify the cyst base and excide it leaving the superficial portion of the cyst intact, with an involution of the cyst during several weeks and no need of skin coverage.

Conclusions: We analysed and compared the various treatment options. Many recurrences occur after non-surgical approach to the MC; with surgery the recurrence is less frequent and may be due to inadequate excision of the capsular attachments of the ganglion. If the surgery is well performed the recurrences appear to be very rare.

Discussion: Many recurrences occur after MC treatments. In our experience the most safe option is surgical approach, even if it is the most demanding for surgeon and patient.

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Pilomatricoma or Calcifying Epithelioma of Malherbe. A Case Report

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Introduction: The pilomatricoma or calcifying epithelioma of Malherbe is a rare benign adnexal tumor. It represents the most common hair follicle tumour, and it is usually misdiagnosed. Here we describe a case report and we discuss the principal features, the clinical presentation, the diagnostic and therapeutic approach.

Methods: A 45 years-old man presented with a 10-month history of a slowly growing lesion on his right eyebrow. Clinical examination revealed a 1cm x 1cm subcutaneous irregular and firm mass. No adenopathy was noted. A soft tissue contrast-enhanced ultrasonography was performed. The diagnosis of pilomatricoma was obtained after excision and histological examination.

Results: Nine months postoperative: the patient is still free of disease.

Discussion: Pilomatricoma was described in 1880 by Mahlerbe and Chenantais. The term pilomatrixoma is used to denote the hair follicle origin, as suggested by Forbis in 1961. This was later corrected to pilomatricoma as more etymologically correct.

This tumour is common in paediatric population and it occurs mainly on the head and neck region.

Pilomatricoma usually presents as an asymptomatic, solitary, firm or hard, mobile, dermal or subcutaneous nodule. Clinical variations include large extruding or perforating examples, multiple eruptive cases, familial cases and malignant examples. The differential diagnosis includes lipoma, dermoid, sebaceous or follicular cysts and granulomatous inflammation.

Pilomatricoma is histologically composed of shadow cells, basophilic cells and foreign body cells. Intracellular and stromal calcification are noted in about 70% of cases. Some cases of malignant transformation are described. Diagnosis needs clinical, instrumental and histological evaluation.

Surgical excision is the recommended treatment.

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Unsolved Problems in Periferal Nerve Injuries: An Overview of the Current Surgical Repair Techniques and the New Bio-Engineering Perspectives

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When dealing with peripheral nerves injuries, the current practice is to perform a repair with techniques already described at the beginning of the 20th century. These techniques didn't basically change along the years. Looking at the literature, it's clear that this kind of surgery still faces some unsolved problems. The first is the progressive degeneration of the distal target of the injured nerve: sometimes this degeneration cannot be avoided and the surgical nerve repair is pointless. Then the velocity rate of regeneration cannot yet be modified with current techniques. Finally there is evidence that the best substitute we have for a missing tract of nerve is still another nerve used as a graft, with great concern about the deficits created at the donor site level. Today the tendency of the scientific research is to apply to this field very recent neuro-scientists' findings like the knowledge about tissues bio-engineering techniques, specific neurotrophic factors and immunosuppression. More specifically, stem cells could reduce the death rate of the cells to the target organ. This would be achieved by the immediate presence at the site of lesion of new Schwann cells derived from stem cells; clinical studies show that the rate of myelinisation could be higher.These techniques could be relevant in case of large loss of nerve tissue like the severe brachial plexus injuries.

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Microsurgical Anastomosis with the "PCA" Technique

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In this study, a new microvascular anastomosing technique called "PCA" is introduced. The conventional microvascular anastomosis (CI) with single interrupted stitches requires long time to be completed, each suture has to be tied before starting the following stitch.

A microsurgical time reduction is often researched by surgeons particularly when there are multiple vessels to be anastomosed or a short ischemia time is a prerequisite. The authors conducted a comparative study of PCA and CI in 40 wistar albino rats, both femoral arteries and veins of each rat were used, for a total of 160 vessels with a diameter of a 0,8 to 1mm. The rats were divided into two groups. A p value < 0.001 was considered significant. The mean time required for microvascular anastomosis of femoral arteries was 22 minutes (min.) and 46 seconds (sec.) in the PCA group and 28 min. and 50 sec. in the CI group. The mean time required for microvascular anastomosis of veins was 19 min. and 20 sec. in the PCA group and 23 min. and 36 sec. in the CI group. The combination of three different and separate techniques, all-in-one, for the microvascular anastomosis is a safe, secure, and time-saving procedure. This combined method provides the advantages of having single stitches with the speed of a continuous suture tied with a fast manner.

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Filler's Complication or Patient's Autolesionism?

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Injectable nonpermanent soft-tissue augmentation materials are well-tolerated and can be used safely, but some Authors remind the rare incidence of serious complications. A 62 years old woman presented multiple skin wounds on cheek area bilaterally. On December 2001 the patient made two successive injection of hyaluronic acid filler to correct acne scars. After one week, an eritematous reaction of treated area appared and, few days later, the skin showed deep ulcerative lesions with related pain. In the following 3 months, the patient was submitted to daily dressings, showing a rewarding outcome, but new wounds continued to appear in the surrounding area. From 2003 to 2007, the patient underwent to multiple surgical treatments to repair wounds that appared cyclical. Every single procedure was followed by histological and biochemical tests but results showed only heterogenic material with hyaluronic acid inclusions. Today we haven't found any solution yet. This peculiar complication of hyaluronic acid filler is unusual and maybe it could hide an autolesionistic development of the wounds, above of all for the peculiarity of their cyclical repeating.

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The Anterior Compartment of the Thigh: A Reliable Free Muscle Flap Donor Site

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Introduction: The anterior compartment of the thigh must be considered as the donor site of free muscle flaps which have long neuro-vascular pedicles with a good calibre, wide surfaces and that can be combined with adipo-cutaneous flap in very versatile chimaeric flaps. Unjustified concerns about the functional consequences of harvesting one of the muscle bellies of the quad-

riceps femoris is probably the reason why this donor site is not very popular. The authors present their own experience with free muscle flaps harvested from the anterior thigh.

Materials and Methods: Between March 2006 and April 2008, 8 reconstructions with free muscle flaps harvested from the anterior thigh were performed in the Plastic Surgery Unit of the University of Palermo. Of the 8 flaps harvested, two were chimaeric ALT-vastus lateralis, one of which was reinnervated, four were pure muscular vastus lateralis flaps, one musculo-cutaneous vastus lateralis and one musculo-cutaneous reinnervated rectus femoris.

Results: All flaps survived completely without necrosis. One minor wound breakdown was observed with the free rectus femoris. The reinnervated muscles gained back contraction within 6 months, as shown by both clinical assessment and EMG. No functional compromise was observed at the thigh donor site.

Conclusions: Harvesting of one of the bellies of the quadriceps femoris is a safe procedure which allows to preserve function of the donor thigh thanks to the compensating action of the three remaining muscles when the nerve is harvested with the flap. When the nerve is left in place, muscular function is preserved.

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Bidirectional Barbed Sutures. A New Technique for Wounds Closure

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Five years of clinical experience over 10.000 patients in different nations worldwide, demonstrated the utility of bidirectional barbed sutures in general and plastic surgery. The long follow-up was necessary in order to demonstrate any kind of complications, and the ways to prevent them.

The 30° spirally-formed barbs, works by approximating tissues through bidirectional fixation with a knotless self-anchoring system. The suture starts in the middle of the wound and continue in the opposite directions with two needles. This permit a good control and distribution of the tension within the wound, also in difficult wounds.

Actually, since forces are distributed across multiple barbs, their use is indicated both for the muscolo-fascial plane with a helical suturing technique and the dermal plane.

In our experience, the bidirectional barbed sutures shows their perfect use especially for the epidermal tissue in order to obtain the best aesthetic results.

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Forty-Two Consecutive Sural Flaps in the Treatment of Chronic Venous Ulcers and Complicated Wounds of the Lower Third of Leg

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Introduction: The sural flap is one of the treatment for the chronic venous ulcers and complicated wounds of the lower third of leg**.** Particularly, the complicated ulcers require the excision of the ulcer with the surrounding lipodermatosclerotic skin, and replacement of the defect with healthy tissue.

Methods: Herein we reported the results of 42 (28M; 14F) consecutive patients, between 12 and 83 years-old; twenty-one patients showed chronic venous ulcers of leg, 15 with outcomes of burn and 6 of electrocution. All patients were previously treated with surgical escarectomy and autologous dermal-epidermic graft. Most of lesions were localized in the inferior third of leg. Surgical procedure provides the rotation of the sural flap to cover the lesion.

Results: Postopertive course was uneventful in all cases but two, with a transitory suffering of the flap, spontaneously resolved.

Discussion: The distally based superficial sural artery flap is an easily and versatile procedure, perfect for the young surgeon, useful in reconstruction of lower third of leg, heel and malleoli defect.

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Biphosphonates Related Osteonecrosis of the Jaws (BRONJ): Our Experience

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Introduction: Biphosphonates Related Osteonecrosis of the Jaws (BRONJ) is defined as the presence of non-healing exposed bone in the maxillofacial region of patients with a current or previous history of treatment with bisphosphonates, which cannot be attributed to other causes.

Intravenous biphosphonates (zolendronate, pamidronate) are used with great efficacy in the treatment of lytic lesions of multiple myeloma, hypercalcemia of malignancies and metastasis from solid tumors such as breast, prostate and lung cancer.

At the University of Palermo a multidisciplinary study group has been formed for the Prevention and the Research on the BRONJ (P.R.O.Ma.B.) which has as an objective to detect the

osteonecrosis cases and create both the prophylactic protocols and treatment.

Surgical treatment of the B.R.O.N.J. has been contraindicated for the elevated risk of worsening bone exposition. Nevertheless in some cases surgical treatment is mandatory.

The Authors present their experience in the treatment of 16 cases of B.R.O.N.J.

Materials and Methods: From may 2005 16 cases of B.R.O.N.J. were treated. 12 cases were treated with antibiotics and local debridement; 2 patients had minor surgical procedures; 2 patients, which developed oroantral fistulas, had major surgical procedures.

In 2005 a patient affected by multiple myeloma, osteonecrosis of the maxilla and oro-antral fistula, was treated with a temporal muscle flap. In 2007, in another patient, affected by prostate cancer with bone metastasis and osteonecrosis of the maxilla with oro-antral fistula, the reconstruction was carried on using an ALT and vastus lateralis chimeric flap.

Results: In 14 cases the local treatment allowed to control the pain. In both cases which had major surgical procedures the repair of the fistula and the regression of algic symptoms were achieved. The first case, treated with the rotation of a temporal flap and greater invasiveness of bone treatment (resection of the zygomatic arch), developed a cutaneous fistula to the external canthus area.

In the second case treated with a better vascularised flap taken from a distant donor site minimizing bone trauma, a faster recovery occurred without complications.

Conclusions: Prevention and conservative treatment are the first line strategy in the management of BRONJ, while surgical treatment must be reserved to symptomatic cases resistant to oral hygienic treatments or drugs.

Decreasing bone trauma and using reconstructive microsurgical techniques capable of moving vascularised tissues, blood and growth factors over the affected bone appear to be the basic principles for a correct surgical treatment.

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The Combined Use of DIEAP Flaps and Implants in Breast Reconstruction

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Introduction: The DIEAP flap is an ideal method for autologous breast reconstruction. However, in some patients, the amount of tissue from a DIEAP flap is not enough to fulfill the expectations for a long-term and aesthetic appearance symmetry. Several procedures (autofat injections, GAP or TUG flaps, supercharged DIEAP flaps) have been described to deal with similar problems.

The combined use of DIEAP flaps and implants in optimizing breast reconstruction is discussed.

Material and Methods: Between January 2004 and January 2006, all patients candidate to breast reconstruction with DIEAP flap who showed inadequate amount of tissue in the lower abdomen and those who had a previous DIEAP flap breast reconstruction and showed considerable asymmetry, were counseled about primary or delayed flap augmentation with implants. Indication, radiotherapy, flap weight, implants size, location and timing of insertion, complications, outcome and follow-up have been gathered. After 12 months, 4-point scales were used to evaluate satisfaction and overall outcome.

Results: One-hundred-seventy-four DIEAP flaps were performed in 156 patients. Fourteen patients (8.9%) had breast reconstruction with 19 DIEAP flaps and 18 implants. The mean follow-up was 20.6 (range, 12 and 32) months. Fourteen primary DIEAP/implant procedures were performed. The average implant weight was 167.2 (range, 100 and 230) g. Implant/flap weight ratio was 1:5. One infection and one haematoma occurred. Overall outcome scores were all between good and excellent.

Conclusions: Indications and outcomes demonstrated that, in selected patients, primary and delayed DIEAP/implant augmentation can be a safe and effective method in optimizing breast reconstruction.

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Infiltrating Nasal Non Melanocytic Skin Cancer Management

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Background: Nasal pyramid is the most common site for the presentation of head and neck cutaneous malignancies, particularly in such sun-exposed areas as ala, dorsum and tip. Basal cell carcinomas (BCC) and squamous cell carcinomas (SCC) are mainly observed. Malignant melanomas and other neoplasms occur more rarely. In comparison to other skin sites, the nose is the most frequent site of recurrence following ablation of cutaneous cancers. According to tumour features, different therapeutic approaches have been proposed.

Materials and Method: It was our purpose to validate a therapeutic strategy aiming to oncological safety and minimization of possible recurrences after full-thickness excision of 20 cases of infiltrating nasal non-melanocitic skin cancers (NMSC). The strategy is composed by three stages: surgical excision with clinically safe perilesional skin margins and extemporary frozen section histological control; 8–15 months long follow-up with "open" surgical nasal defects and "wait and see" strategy; new extemporary histological control of the margins and, if negative, definitive reconstruction.

Results and Conclusions: The absence of recurrences in a 5 years follow-up after definitive reconstructive surgery demonstrates the reliability of our strategy and the necessity to delay

nasal reconstruction, putting attention on oncological safety for infiltrating nasal NMSC.

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Hypertrophy of Labia Minora: Aesthetic Labia Minora Reduction

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Introduction: Hypertrophy of labia minora is a rare, congenital or acquired condition, with protrusion of the labia minora past the labia majora.

This can cause aesthetic and functional problems: inflammation, poor hygiene, interference with sexual intercourse.

Material and Methods: Between December 2000 and October 2007.

Four patients underwent aesthetic surgical reduction of the labia minora in the Plastic Surgery Department of the University of Palermo.

Three patients underwent bilateral procedure, and one patient underwent unilateral resection. All patients underwent inferior wedge resection and superior pedicle flap reconstruction, in local anaesthesia.

Results: No infections, haematoma, wound dehiscence, distal flap necrosis, sexual dysfunction, late local pain, or skin retraction occurred.

Aesthetic alteration of the free border of the labia minora was not observed.

All patients achieved satisfying aesthetic and functional outcome.

Conclusion: Aesthetic surgery of female genitalia is an uncommon procedure, performed by plastic surgereous.

The simple strategy of straight amputation alone does not ensure a favourable outcome, because it removes the natural contour of the labia minora and replaces it with an irregular scar, with an unsatisfactory aesthetic result and sometimes even sexual dysfunction.

The inferior wedge resection with superior pedicle flap reconstruction is a simple and consistent technique, which allows to hide the scar in a shadow area, without changing the free edge of labia minora and it is associated with a high degree of patient's satisfaction.

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The Use of Pectoralis Major Myocutaneous Flap as "Salvage Procedure" following Intraoral and Oropharyngeal Cancer Excision

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Introduction: The benefits and superiority of free flaps for head and neck reconstruction are well recognized. However, in some instances, especially in elderly and critical patients with advanced intraoral and oropharyngeal cancers or in patients with underlying systemic syndromes (i.e.: uncontrolled diabetes, cardio-pulmonar failure, renal insufficiency, etc.), the use of Pectoralis Mayor myocutaneous flap may be a preferable option with fewer risks for the patient.

Methods: We present a series of 12 Pectoralis Major myocutaneous flaps, performed from January 2006 to June 2007, in 12 critical patients who presented with advanced carcinomas of the oral cavity and oropharynx. In all cases, histology showed squamous cell carcinomas (T3-T4)-(N0-N3)-M0. Tumors were: 4 intraoral (33%), 2 in the oropharynx (16%) and 6 in the hypopharynx (49%).

Results: There were no flap loss. Partial skin necrosis (<10%) occurred in 1 case (8%); one patient (8%) developed wound infection treated successfully with systemic antibiotic therapy. Minor orocutaneous fistulas developed in 2 patients (16%). Mean follow-up was 14.5 (range 9–27) months. Four patients (34%) died after 4 months, 2 patients (16%) had recurrence of disease, 6 patients (50%) showed no evidence of disease.

Discussion: The use of Pectoralis Major myocutaneous flap as a salvage procedure in immediate reconstruction following ablative surgery of head and neck cancers is still a valid alternative procedure to free tissue transfer. Because of reduced operative times, reduced anaesthetic risk, reduced risk of total flap necrosis and reduced costs, it could be considered as a preferable choice in selected cases.

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Fat Transplantion: Different Clinical Applications to Achieve Symmetry in Face and Body Contouring

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Introduction: Fat autograft was first described in 1893 by Neuber for cosmetic and congenital defects.

Nowadays its use is becoming widespread for soft tissue augmentation to improve simmetry and contour in all areas of the face and body.

The authors present their experience with face and body contouring by fat autograft in post-oncological, post-traumatic and cosmetic settings.

Materials and Methods: Between 2005 and 2008 31 patients underwent fat autografting in the plastic surgery unit of the university of palermo.

There were 10 cases of breast asimmetry after reduction mammaplasty, breast augmentation and breast recostruction; 3 cases of post-traumatic and 1 congenital deformities in the face; 20 cases of facial volume and shape restoration in the midface, lip and nasolabial fold.

Results: Improvement of simmetry and contour restoration were obtained in all cases. 2 procedures were necessary on average. Probably due to the smaller amount of grafted fat, results are more reproducible in the face. Multiple stages were more frequently required in the breast. No relevant donor site morbity has been observed. The only complications were 2 cases of fat necrosis in the breast.

Conclusion: Fat autografting is a useful tool to correct soft tissues asimmetries and to restore contour all over the body. Its efficacy is dependent on the amount of fat transferred and on the technique used in order to maximize take. The lesser the amount and the more accurate the placement, the better the take. however, multiple stages are frequently needed to optimize outcome.

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Versatility of ALTF in Head and Neck Reconstruction

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Introduction: Recently microsurgery has become the Gold standard in reconstructive surgery. This surgical standard is the result of different transition phases (e.g: mammary reconstruction , from free TRAM flap, through free sparing muscle TRAM to perforator DIEP flap).

In soft tissue reconstruction, particularly in head and neck and oral cavity areas, Free Radial Forearm flap, has long represented the first reconstruction choice both in post-oncologic and -traumatic surgery. Perforator flap such ALT is now suitable for mostly surgical situation.

In this study we compare ALT vs FRFF to show differences and similarity and reconsider their reconstructive indication.

Methods: Ten year analysis for microsurgical soft tissue reconstruction have been studied focusing on anatomical area, aesthetic and function.

Results: 10 FRFF, lateral arm, from 1998–2003; 15 ALTF from 2003–2008 for head and neck reconstruction. Three necrotic flap loss. Two anastomosis revision. No difference in function and aesthetic. Donor site morbidity showed different complication among the two groups.

Discussion: ALT flap is supposed to be more difficult than FRFF due to perforator dissection.

Constant progresses in intraoperative description of ALTF, perforator mapping (88% muscolocutaneous and 12% septocutaneous) and accessibility to dissection courses shorten the ALT learning curve. This, together with a reduced donor site morbidity and same functional and aesthetic results, makes the ALTF the first microsurgical reconstructive option in most of soft tissue reconstructions.. even for young surgeons.

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Integrated Protocols in Poststernotomy Mediastinitis

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Background: In the last years, the increasing number of cardiothoracic operations has caused an important growth of poststernotomy infective complications. Median sternotomy is the most common surgical way to access to heart and big vases. Incidence of poststernotomy mediastinitis is variable among 0.8 and 4%; this infective complication can be highly dangerous, since it can make the prognosis considerably worse.

In these cases, an adequate debridement (lytic and surgical) and a suitable infections control (topic and systemic antibiotic therapy, advanced medications, VAC therapy) must precede reconstructive time .

Patients and Methods: Over a 10-year period, Authors treated 25 patients with poststernotomy mediastinitis, in which the defect in the sternal region has been corrected in 21 cases (84%) by means of the harvesting of the bilateral major pectoralis flaps, in 2 cases (8%) through an omentum flap and in the other 2 cases (8%) through a fasciocutaneous flap based on over-navel perforators. This last flap is specially useful to cover defects of the lower portion of sternum.

Discussion and Conclusions: Sternal dehiscence and poststernotomy mediastinitis are not particularly rare complications which make post-operative course in cardiac surgery considerably worse. With a scrupulous application of a standardized protocol, starting from wound bed preparation, good results can be obtained in a high percentage of cases.

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Congenital Malformations of the Hand: Aim is Function

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Congenital anomalies of the upper limb are not unusual. Incidence is approximately 1/600 live births. Due to their complexity a multidisciplinary approach is essential to establish a realistic and effective reconstructive programme. Real aim is function. In assessing these children, the first aspect the surgeon must con-

sider is "should anything be done?". In the treatment of congenital hand deformities the essential goals of surgery are: 1. restoration of the basic functions of a normal hand such as grasp and precision pinch 2. support for a normal physical and psychological growth 3- creation of a cosmetically acceptable hand. When the problem is purely aesthetic nothing surgical must be done, while if there is a chance of improving child functional independence, treatment should be undertaken. The necessary elements for prehension are a functional thumb able to oppose to another finger in order to make a grasp. Timing for surgery is essential. A primitive grasp reflex is present from birth but the biological maturation of prehension takes place in the period from birth to approximately 15 months. Early surgery allows the incorporation of the reconstructed precision pinch mechanism into the emerging pattern of prehension and manipulation. Like the face the hand is an area of the body in constant display. So that the result of surgery should be cosmetically acceptable.

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Decisional Algorithms in Choosing a Prosthesis in Augmentation Mammaplasty

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In the past few years, augmentation mammaplasty become really popular, around the world, especially among young women.

For this reason, in order to improve the aesthetic results, young surgeon and prostheses manufacturers are now more careful in choosing the ideal prostheses.

To obtain a standardize method in choosing a prosthesis, we used a new decisional algorithms, of the dimensional type which is based on subjective observations and objective measurements.

A preoperative planning divided in two branches: patient will and objective measurements, is made.

Data are integrated and implants are chosen according to the measurements performed and to the patients "habitus".

In this study we enrolled 20 patients with different indication to the augmentation mammaplasty. We used 12 round prostheses and 8 anatomical prostheses with either a "Moderate Plus" or "High" profiles, with a volume ranging from 200 to 300cc.

The implant was under the mammary gland in 10 cases, under the chest muscle in 6 cases and with a "dual plane" pouch in 4 cases.

Aesthetic results were optimal in all cases with complete patients satisfaction and we arrived to our previous gols.

In conclusion this system resulted in a simple and accurate method in prosthesis choosing, suggesting the possibility of using this system as an improvement tool for young and older surgeons.

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Aesthetic Treatment of Scars with Jet-Peel and Wipescar

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Hypertrophic scars or keloids are not aesthetically pleasing and can cause functional and psychological problems in patients. Numerous methods which aim at reducing them or preventing their occurrence are now available on the market.

We here introduce and suggest two new methods: microdermoabrasion with Jet Peel-3, and the use of cyanoacrylates (Wipescar) in the prevention and treatment of pathological scars.

The treatment with Jet Peel is based on the emission of a supersonic bi-phase jet, formed by micro-drops of saline solution and air/oxygen through a one or three-way handle**.**

The micro-drops are emitted at the speed of 200m/s thanks to an internal air-compression system.

The interaction between the skin and the droplets, which have an elevated kinetic energy, enables to eliminate skin layers in a fast and painless way, supplying hydration and cutaneous stimulation.

Wipescar is a liquid containing cyanoacrylates which is applied topically to the scars.

The particular composition enables it to polymerize on contact with the air: a protective barrier on the region of interest is set up, producing ischemia and compression of the scar.

Twenty-six scars have been treated with microdermoabrasion, fifty-five using Wipescar.

Outcome measures have been: patient satisfaction, satisfaction of the surgeon, attenuation of the erythematous component, thickness reduction of the scar and increase of its elasticity.

More than half of the patients declared themselves satisfied with the results achieved through the use of these two methods, which we consider valid options among the many products available in commerce to treat scars.

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New Tissue Growth and Neoangiogenesis Inside an Integra TM Template: From Experimentation to Prefabricated Flaps

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Authors describe their own experience in experimental studies based on an artero-venous microsurgical loop enveloped into an Integra tm sandwich which has shown to be a versatile regeneration chamber for new tissue ingrowth research, neoangiogenesis and neural regeneration. Is consequently analyzed the clinical chance of creating prefabricated flaps, hopefully innervated, through Neumeister's and Authors themselves' experience.

Attention is mainly focused on neoangiogenesis in vivo and in human which is widely described with morphological studies.

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Upper Limb Salvation after Chronic Radiation Wound and Double Arterial Bypass: An Unique Case Report

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76 years of Lady came to our attention in February 2006 for a wide lesion situated on the dorsum of the left forearm, at about the 2nd 1/3 of its length.

The lesion went deep to the tendons with scary tissues around it.

A chronic radiodermatitis wound originated more than 50 years ago at patient's puberty. A scary tissue remained after the treatment.

At the beginning of the 80's the blood supply got dramatically worse causing the necrosis of the top joints of the 1st and 2nd fingers of the left hand. Two bypass were required in 1982 and 1989 between omeral artery and the S.P.A.

An anterolateral tigh flap was consequently used to cover the forearm and succeeded. During the following controls the new tissues were in good conditions, no alterations were present nor pain.

Controls up to date show a stable and reliable viability still based on its unique pedicle.

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Cutaneous "Thoraco-Abdominal" Flap for Chest-Wall Reconstruction

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Introduction: Major chest wall reconstructions are usually required after radical excision of advanced cancer stages and large radionecrosis in patients with poor general conditions. Fasciocutaneous, muscular and musculocutaneous flaps have all been described, with the last ones being commonly considered a first choice. The Authors present their experience with an extended pure cutaneous flap from homolateral thoraco-abdominal area, able to cover extensive defects.

Materials and Methods: Between February 2002 and 2006 twenty-two female patients underwent major chest wall reconstruction with this technique. Flap dimensions ranged between 15x15 and 25x30 cm. The vascular supply, provided by the lateral cutaneous branches from intercostal, subcostal and lumbar arteries, always proved to be safe.

Results: No major complications were registered. One patient only suffered from a full thickness necrosis at the distal margin of the flap requiring further surgical debridement. Hospitalisation ranged from 3 to 10 days (mean 4 days) and there were neither operation mortality nor patients necessitating intensive care and/or blood transfusions.

Conclusions: The extended cutaneous "thoraco-abdominal" flap proved to be a quick , single stage procedure with a low morbidity rate, specially indicated in patients with poor prognosis. Our experience confirmed neither the muscle nor its fascia need to be sacrificed as viability of the flap is assured by the large size of the pedicle and the profuse blood supply is conveyed by the muscle perforators.

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Evaluation of Polyuretuhane Dressing Material with Ibuprofen for the Management of Split-Thickness Skin Graft Donor Sites

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The authors investigated the effect of ibuprofen, when included in a polyurethane dressing foam, for the management of pain and healing, of split-thickness skin graft (STSG) donor sites. A study was conducted from October 2006 to February 2007, and included 20 patients that underwent surgery for any reconstructive-related purposes that also used STSG. The patients were divided randomly into two groups. In the first group of 10 patients, the donor sites were covered using a Biatain-Ibu foam dressing. In the second group of 10 patients, the donor sites were closed intra-operatively, with a standard dressing. To evaluate the extent and quality of the pain experienced by the patients, and to score pain over time, we asked the patients in the study to complete a form containing a VAS and questions about the pain experienced. The combined use of ibuprofen with bio-occlusive dressings accelerates wound healing, compared to fine-mesh gauze dressings. And, it and almost eliminates pain and discomfort of all patients treated. Patients that received topical ibuprofen did not site itchiness as a major problem. This study demonstrates that the Biatain-Ibu dressing is a useful tool in the management of STSG donor sites, as it provides an optimal environment for wound healing, and it minimizes pain and discomfort.

Endoscopic Surgery

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An Emerging Modality for Diagnosis of Pneumothorax

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Introduction: Primary spontaneous pneumothorax (pnx) occurs in otherwise healthy individuals. A secondary spontaneous pnx occurs in the presence of underlying lung disease. In about 80 per cent it is due to chronic obstructive pulmonary disease as emphysema or pulmonary infections but spontaneuos pnx have been reported with virtually every lung disease.

Material and Method: In a tall thin thyrty-five woman was performed a wall chest ultrasound examination for the presence of parietal lesion (lipoma). During examination on left side was discovered that the pleural line dont't exhibited normal lung sliding. She had a little precordial pain in his chest but not dyspnea. There was very little motion and hyperresonance on the affected side of the chest. On auscultation the breath sounds was more distant.

Results: A x-ray chest was necessary to prove beyond doubt the existence of pnx. No parenchymal consolidation were found and air were removed by aspiration from the left pleural space. A x-ray examination at the end showed a left lung completely re-expanded. The patient was subsequntly discharged from the hospital with detailed instructions regarding rest and the possibility of a recurrent pnx.

Conclusion: Chest ultrasound is an emerging diagnostic modality with very high accurance rates (comparable to computed tomography in both sensitivity and specificity) for the diagnosis of pnx and its more extensive use is very helpful to recognize this disease that it is more frequent than is generally realized.

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Potential Risk Factors of Extrahepatic Bile Duct Carcinoma

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Introduction: The incidence of extrahepatic bile duct carcinoma (EBDC) has been recently increasing in western countries. The true cause of this increase is unknown. Wide international variation in the incidence rates of EBDC suggests a possible environmental etiology. The aim of this study is to evaluate the prevalence of known risk factors for EBDC.

Methods: We identified all cases of EBDC diagnosed in our department between December 1999 and January 2007. Because of the difficulty in distinguishing between cancers from the various subsites in the biliopancreatic district, the cases were identified after carefully examination of histopathological reports. Thus, the medical record of 34 patients were reviewed and we obtained information on risk factors for all cases.

Results: The mean age was 68 years; among EBDC cases 16 were male and 18 female. This was similar to the distribution among the other study. Analyses of collected data showed that several risk factors remained significant after adjusting for gender and age. The most important risk factors for EBDC that had statistically significant association are cholelithiasis, smoking, alcohol and hypertension.

Conclusion: Thus lifestyle-related factors, such as use of tobacco and alcool, diet, excess body weight appear to be associated with biliary tract cancer, but the nature of the association remains unclear. In addition to previously known risk factors, several other risk factors could play a role in EBDC. These include cholangitis, inflammatory bowel disease, lover cirrhosis, hepatitis C.

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An Unsuspected Complication of Colonscopy

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Introduction: The most important complications of traumatic nature of colonscopy include bleeding and perforation. We report a case of a rare complication as consequence of this endoscopic procedure.

Materials and Methods: A 39 year old man presented left upper quadrant pain one day after a colonscopy. The pain radiated to his left shoulder tip. On examination, no other clinical symptoms or signs were evident. Abdominal and chest radiographs were unremarkable. Laboratory test, urinary exame and abdominal ultrasound were normal.

Results: After two days the patient returned with early signs of circulatory shock (pulse of 114 bpm and a blood pressure of 90/50mmHg). Laboratory tests revealed a mild leucocytosis and decrease in hematocrit and hemoglobin from 15 to 10 g/dl. A diagnosis of a ruptured spleen was made and the patient proceded to a CT of abdomen. This revealed a laceration in the superior pole associated with kidney haematoma. Splenectomy was performed after the laparotomy and the patient made an uneventful post-operative recovery.

Conclusion: The disease other than of hematologic or immunologic nature in which the spleen has great importance is of traumatic origin. Delayed splenic rupture is a well recognized sequel of blunt left lower chest or abdominal trauma and the majority of splenectomies were done as its consequence, but rarely the cause of splenic trauma is an endoscopic procedure. For this reason, familiarity with the endoscopic findings, symptoms, signs and treatment of all complications is an essential prerequisite for performance of colonscopy.

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Cervical Esophageal Stents: A 9-Year Experience

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Introduction: Cervical esophageal stent placement carries a high rate of complications. We examine our experience of endoscopically-guided positioning technique.

Materials and Methods: We inserted 39 stents in 37 patients, 28 M/9 F with the upper flare positioned between 7 and 19 cm from the incisors. There were 33 cases of malignancy (89%), 4 of them with an esophago-tracheal fistula, and 4 cases (11%) with a benign etiology. Two were Hood stents, while the other 37 were self-expanding stents, 30 metallic (SEMS) and 7 plastic (SEPS). The gauge of the stent was > 12 mm (A) in 23 cases and narrower (P) in 16.

Results: Stents were well tolerated in 97.3%. At 1 month dysphagia had improved in the malignant stenosis (score 2.78 before vs 0.96 after stent) ($p<0.05$), but not in the benign cases. Early complications: 66% in benign stenoses; 21% in malignant cases. Late complications: 59% in malignant cases. We found more dislocations of SEPS (71.4% vs 7.7%; p= 0.002) and a greater improvement in dysphagia with the stents A than stents P (p=0.002).

Conclusions: Esophageal stent is the best palliative treatment for malignant esophageal stenoses. Although a high complication rate stent placement with upper flare in the cervical district has to be considered. Better results are obtained with SEMS with gauge > 12 mm.

Experimental Surgery

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Human Placenta-Derived Mesenchymal Stem Cells Protect Against Ischemia-Reperfusion Kidney Injury in Rats

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Introduction: Recently mesenchymal stem cell(MSC) therapies have been proposed as a novel treatment for Acute Renal Failure(ARF). In this study we assess the effect of human placenta-derived MSC(hPD-MSC) and of novel differentiation molecules on ischemic ARF in rats.

Methods: Ischemia/Reperfusion(I/R) damage was induced by 45 minutes bilateral clamping of renal pedicles in 24 rats. The animals were divided in 4 groups to recieve: no treatment, phosphate buffer solution injection, intraparenchymal injection of hPD-MSC and intraparenchymal injection of hPD-MSCs pretreated with hyaluronic and butirric acids esters(HB) as differentiation agents. We assessed renal esocrine and endocrine function at days 1,3,5 and 7. Histological samples were collected at sacrifice.

Results: Serum creatinine and urea, creatinine clearance normalized by day 3 in cell treated groups and only by day 7 in control groups. Endocrine renal function parameters (red blood cells count, hemoglobin, hematocrit and reticulocytes) at 7 days post-I/R were higher in cell treated groups ($p<0.05$). Renal injury showed a significantly lower injury grade in cell treated groups ($p<0.0001$).

Conclusion: hPD-MSC markedly accelerate kidney functional recovery after I/R injury offering a promising therapeutic option for ARF. Pretreatment of MSCs with HB offers better functional and morphologic results.

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Transvaginal Laparoscopically-Assisted Endoscopic Cholecystectomy: Preliminary Experience

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Background: Natural orifice transluminal endoscopic surgery (NOTES) is a growing new surgical technique that allows a

minimally invasive access to the peritoneal cavity and eliminates abdominal incisions and incision-related complications by combining endoscopic and laparoscopic techniques.

Methods: From May 2007 we performed transvaginal laparoscopically-assisted endoscopic cholecystectomy in three patients (ages 39, 55 and 70 years) which presented with symptomatic gallbladder stones. After pneumoperitoneum induction through the Veress needle we place a 5 mm trocar at left flank; then we make a linear incision in the posterior vaginal cul-de-sac and enter the peritoneal cavity with a standard operative endoscope. The presence of a 5 mm trocar is helpful to insufflate CO_2 and to facilitate the endoscopic devices to dissect and clip the structures of Calot's triangle. All the principles of laparoscopic cholecystectomy are strictly respected and repeated.

Results: We experimented that the transvaginal access is technically feasible, safe and enables an excellent vision of the peritoneal cavity, even working with a low pneumoperitoneum pressure (about 7–8 mmHg). Transvaginal laparoscopically-asssited endoscopic is well tolerated by patients and ensures a better cosmetic result than the traditional laparoscopic procedure.

Conclusions: The transvaginal approach is the safer access for NOTES to date because of the easiness in performing and closing the colpotomy. Dedicated NOTES devices are needed to achieve completely "no-scar" procedures, providing for safe creation and closure of the viscerotomy and increasing the ease of intra-abdominal organ manipulation. Until the availability of dedicated instruments, we believe the best technique is the hybrid one. Through technical improvements and clinical trials, NOTES will soon be the future of minimally invasive surgery.

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Increase of Portal Blood Oxygenation by Artero-Venous Shunt in Diabetic Rats

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Introduction: An high graft volume is capital for the result of islets transplant. Several factors limit islets engraftment in recipient's liver parenchyma and, among these, hypoxia plays a crucial role. The aim of our study is to assess whether a portal hyperoxygenation can be obtained in diabetic rats through an artero-venous shunt.

Methods: Normal and streptozotocin-induced diabetic Sprague-Dawley rats underwent or not a portal-vein arterialization (PVA) performed by interposing a stent between the left renal artery and the splenic vein. The animals were divided in two groups, sacrificed at 48 hours and 7 days. At the sacrifice samples were collected for portal blood gas analysis.

Results: The portal blood oxygen (PO2) increased significantly after PVA in both groups. The group of normal animals sacrificed at 48h showed an increase of PO2 from 42.5±5.2 to 70.2±2.8 mmHg when PVA was performed. The values of blood oxygen saturation (SaO_2) increased from 69.1±5.5% to 89.4±3.2% after PVA. The diabetic animals at 48h showed similar results of PO2 (from 41.2±4.8 to 68.3±2.5 mmHg) and SaO_2 (from 67.5±5.2% to 88.2±2.8%) after PVA was performed. These changes were maintained in animals sacrificed at 7 days suggesting the patency of the shunt.

Conclusion: Improved portal vein oxygenation observed after PVA confirms the efficacy of this surgical shunting technique in diabetic as well in normal animals. This effective arterialization of portal blood may promote the engraftment of pancreatic islets after transplantation in recipient's liver parenchyma.

Urology

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A Case of Idiopathic Gangrene of Scrotum – Fournier's Gangrene

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Introduction: Fournier's gangrene is a rare pathology, first described in 1883, whose aetiopathogenesis is very varied and much debated. Despite substantial progress in scientific research, it carries a high mortality rate because of the rapidity with which it sets in and evolves, presenting therefore as a medical and surgical emergency.

Methods: A 43 years old man was admitted to the our unit with fever and scrotal pain of 3 days duration. Rapidly necrotic process involved penis' and scrotal skin. Antibiotic therapy and aggressive debridement of necrotizing tissues were performed. After 2 weeks, skin grafts were shaved from thigh in order to repair surface of penis and scrotum.

Results: No significant surgical complication was occurred, and patient was discharged from the hospital on the 4th postoperative Week.

Discussion: Antibiotics and aggressive debridement are the gold standard in therapy. This case report demonstrates the importance of prompt treatment capable of arresting its course and preparing the affected areas for reconstructive surgery.

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Carcinoma of Penis: Case Series

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Introduction: Carcinoma of penis is an uncommon malignancy in Western countries. The etiology is discussed, however human papillomavirus infection, poor hygiene and phimosis are often associated with this disease.

Methods: In the last year, 3 men were operated in our Surgical Unit for penis carcinoma. Two patients were suffering from phimosis. Two patients, a 70 years old and a 50 years old men, presented carcinoma of glans and underwent to partial penectomy. Third 74 years old patient had a preputial carcinoma and operated by circumcision . In all patients inguinal lymphadenectomy was performed.

Results: Lymph nodes resulted non involved from neoplasia in three patients and, at this moment, they are disease-freedom. Complications were occurred in two men, because of lymphadenectomy.

Discussion: Surgery is gold standard therapy in penile carcinoma treatment. Lymph node metastases, invasion of corpus cavernosum, and poor differentiation are pejorative prognostic factors. Timing and necessity of lymph nodes dissection are debated, also because it increases morbidity rate.

Vascular Surgery

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A Modern and Comprehensive Surgical Approach to popliteal artery aneurism

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Introduction: Surgery for popliteal artery aneurisms (PAA) remains still now a challenge for the vascular surgeon. Management of acute limb ischemia deriving from popliteal aneurism thrombosis, timing and indication for elective repair and the best surgical approach are uncertain without high level of evidence.

Here we present our results in surgery for PAA analyzing three different surgical techniques.

Methods: We retrospectively analyzed our experience in surgical approach to PAA from 2003 till now. Medial (53), posterior (11) or endovascular exclusion (7) were included. Primary patency, in-hospital stay, wound and local complication, complete functional recovery were analyzed.

Results: Primary patency was similar in all groups; local complication were higher in the medial approach group. In-hospital stay and functional recovery were significantly shorter in the posterior approach and endovascular groups.

Discussion: The ideal surgical technique for PAA does not exist and in each case surgical approach should be tailored on the clinical and instrumental pattern; a modern approach to PAA should include all possible technical options.

When feasible, posterior approach is advisable as it leads a more anatomic and durable reconstruction, helps in vein sparing, wound complications are less and it may reduce hospitalization stay as well as time for complete functional recovery. Medial approach to PAA should be preferred in case of urgent surgery. Results of endovascular exclusion are encouraging.

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Endovascular Repair with Aorto-Uniliac Stent Graft For Complex Aortic Anatomies

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Introduction: Much as been said about endovascular aortic repair for abdominal aortic aneurisms. Indications to treatment, feasibility, technique and results are well established. Many device are available and they are supposed to customize different aneurism morphologies.

In our opinion the role of aorto-uniliac (AUI) stent graft remains underestimate; this device allows treatment of complex aortic anatomies, is an useful tool for emergent treatment, and allows an easy endoconversion of previously deployed bifurcated endografts.

Methods: From 2004 till now, 59 AUI grafts have been deployed with the following indications: AAA (48), RAAA (5), endoconversion for evolving endoleak (2), secondary aorto-enteric fistula (3), iliac aneurism (1). Iliac to femoral artery cross-over bypass has been customized in an extra-peritoneal fashion with preliminary dissection and anastomose of the donor iliac artery in 51 cases (Dacron graft). Inter-femoral cross-over bypass in a subcutaneous fashion in 8 cases (either PTFE or Dacron). A Talent® endovascular graft has been deployed in all cases.

Results: All endografts have been deployed in the intended site. Early mortality was nil, mean hospitalization was 7 days. No graft thrombosis or infection were reported. Major complications included 2 cases of retroperitoneal haemorrhage.

Discussion: AUI stent graft is an useful tool for complex aneurism repair and remains our first choice in case of ruptured aneurism. Confectioning cross-over bypass in our fashion allows a more comfortable access (in case of iliac stenosis or tortuosity) a better intra-operative haemodynamic pattern, a longer patency (more haemodynamic journey of the graft, better inflow source) and a lower rate of infection.

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Preoperative Cardiac Evaluation in Patients Undergoing Major Vascular Surgery

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Objective: To evaluate the effectiveness of a standardized preoperative cardiac assessment in the cardiac risk reduction in patients undergoing major vascular surgery.

Methods: During 2006, 527 patients candidate to intervention for major vascular diseases underwent preoperative cardiac assessment to evaluate the cardiac risk. Perioperative results were assessed.

Results: Patients suffered from a carotid stenosis in 283 cases (53,7%), an abdominal aortic aneurysm (AAA) in 144 cases (27,3%) and a peripheral artery disease in 100 cases (19%). In all cases electrocardiogram, cardiac consultation, and echocardiography were performed. A non-invasive stress testing was performed in 192 patients and in 19 patients a coronary angiography was required. Patients with AAA had a higher risk of 30-day overall mortality. Thirty-day overall and cardiac morbidity rates were 9,1% and 4,4%, respectively. Patients with AAA showed an increased risk of overall and cardiac 30-day morbidity. A positive preoperative noninvasive stress testing does not affect 30-day outcomes.

Conclusions: The use of an accurate preoperative cardiac assessment allowed us to obtain satisfactory perioperative results in patients undergoing major vascular surgery. Routine preoperative non-invasive stress testing does not seem to improve cardiac outcomes.

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Critical Limb Ischemia in Patients with Infrapopliteal Lesions: Comparison of Open and Endovascular Treatment

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Objective: To prospectively analyse our experience with open and endovascular treatment of critical limb ischemia.

Methods: From January 2005 and December 2007, 73 patients underwent surgical or endovascular treatment for critical limb ischemia. In 39 cases an open surgical repair was performed (Group 1), while 34 patients had endovascular treatment (Group 2). Early and mid-term results were assessed.

Results: Surgical intervention consisted of a below-knee femoro-distal bypass in all cases. In Group 2 all patients had revascularization of the occluded superficial femoral artery; in this group in all cases a below-knee endovascular procedure was performed. There were no perioperative deaths or amputations in the two groups. Seven thromboses occurred in the two groups with an overall 30-day thrombosis rate of 15,4% and 3%, respectively (p=n.s.).

Estimated 18-month primary patency rate was slightly better in Group 1 than in Group 2 (67,9% vs. 58,9%, p=n.s.). Secondary patency and limb salvage rates were similar in the two groups (85,3% and 88,2% in Group 1 and 79,2% and 96,8% in Group 2, respectively).

Conclusions: Complex anatomical lesions of femoro-popliteal district determining a critical limb ischemia can be safely treated with both techniques.

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Acute Limb Ischemia in Very Elder Patients

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Introduction: Acute limb ischemia (ALI) is not infrequently associated with limb loss (10–30%)or death of the affected patient (15–30%). These results can be even worse in elderly population. The aim of this study is to quantify safety and efficacy of early revascularization in over 90 years old patients with acute limb ischemia.

Methods: This is a prospective registry lasting from March 2007 to January 2008. We include all consecutive over 90 years patients treated for ALI (n=15). A careful pre-operative duplex scan (DS) were performed in each patient. All patients underwent surgery by Fogarty's Embolectomy, and endovascular completion procedure if needed (n=2).

Results: We performed 18 revascularizations (15 lower limbs, 3 upper limbs) in 15 patients (2 staged bilateral femoral, 1 simultaneous bilateral femoral). The mean follow-up was 124 days (4–365). The procedural success was 94.5% (17 cases). At discharge mortality was 5.9% (1 case), and amputation rate was 6,2 % (1 pt). Using Kaplan-Meir curve, at 60 days cumulative survival rate is 86.3%,at 365 days is 55.9%.

Conclusion: The over 90 years old patient represent a challenging case for Vascular Surgeon. Vascular procedures involve high mortality rate but emergent revascularization by Fogarty Embolectomy and eventually endovascular completion procedure in ALI is safe and effective even in older patient.

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Safety and Clinical Usefulness of the Re-Entry Devices after a Failed Subintimal Angioplasty

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Purpose: This study reports our experience with true lumen re-entry device in the treatment of patients with CLI after a failed Subintimal Angioplasty (SAP).

Methods: Consecutive patients from 2005 to 2007, with the inability to re-enter the true lumen after occlusion, were identified from our vascular registry. The Outback catheter were used in all these patients to complete the first procedure.

Results: In 24/145 patients (16,5%), the true lumen could not be re-entered by using standard catheter and wire techniques. The technical success was 92% (22/24) and the failures (2;8%) were due to heavily calcified arteries. The 90% of the successful re-entry procedures received at least one stent. The two failures (8%) were immediately converted to open surgery. In one of these 2 cases we had an arterial perforation (minor bleeding).

Conclusions: True lumen re-entry catheters are very effective at gaining wire passage back to the true lumen and facilitating successful endovascular treatment of long occluded arteries after a failed SAP. Heavy calcified occlusions are still technical demanding features for an endovascular procedure even with this new device.

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Emergency Treatment of Bleeding Femoral-Distal by-Pass Anastomosys by Viabahn

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We report a case of severe bleeding from a recurrent failing proximal anastomosis of a femoral-distal by-pass with safenous vein treated by deploying a Gore Viabahn stent graft. At presentation, on physical examination an active bleeding was evident from the previous unsolved surgical incision at level of left tight. Two previous surgical revisions of the proximal anastomosis was already been performed in the previous months. At angiography a clear bleeding from the proximal anastomosis was noted, and an emergent endovascular repair was planned. After deployment of a 6 x 100 mm covered stent (Gore Viabahn) at level of proximal anastomosis and first portion of bypass, the bleeding completely resolved. The patient was discharged on 7th day post-operative. CT scan and duplex-scan showed good patency of endograft at 1 year follow-up. Endovascular repair methods are not routinely utilized in the management of emergency. Viabahn endoprosthesis use in emergency bleeding from failing surgical bypass is rarely reported. Endovascular intervention might provide a fast, efficient, less aggressive approach for treating these serious conditions and might require less time than the surgical control. The procedure may reduce blood loss, recovery time, without the need of general anaesthesia.

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Subintimal Angioplasty of Occluded Infrainguinal Arteries: One Center Experience

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Purpose: To evaluate early and mid-term patency and clinical efficacy of subintimal angioplasty(SAP) of occluded infrainguinal arteries.

Methods: Consecutive patients who underwent a SAP between 2005 and 2007 for Critical Limb Ischemia were entered in a prospective database and followed by clinical examination an duplex scan at 30 days, 3–6 months and then yearly. Stent was deployed whenever a flow-limiting dissection or a residual stenosis more than 30% occurred.

Results: 145 patients were treated in this period. The primary technical success was 83.5% (121/145). Stent was applied in 39/121 cases (32.2%). No perioperative mortality occurred but at thirty-day was 4.8% (7/145); the thirty-day amputation rate was 6,2% (9/145). The mean-follow up was 645 days (30–1236). The primary patency at 1 and 2 year was respectively 73% and 66%. Longer lesions (>15cm-OR:4.21) and heavily calcified lesions (OR:5.67) affected the primary technical success and the mid-term patency of SAP ($p<0.001$). The limb salvage at 2 years was 85%.

Conclusion: SAP is a minimally invasive option for patients with critical limb ischemia. A longer SAP and a heavily occluded artery are of poor predictive value for a primary technical success and mid-term patency. More data are needed to confirm the long-term efficacy of SAP.

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Aneurysms of the Visceral Arteries: Single Center Experience

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Introduction: Although rare,aneurysms of the visceral arteries (VAAs) represent an important vascular disease. The most common sites are the splenic, hepatic and superior mesenteric arteries. The aim of this study was to review the outcomes of the management of VAAs.

Methods: Between January 2000 and December 2007 we observed. Particularly 32 cases of aneurism of celiac axis and 12

mesenteric artery. We treated 19 patients (43, 18%) with open repair (8 emergency treatment, 18, 18%) and 25 (56, 82%) with an endovascular approach.

Results: Two (25%) patients died after emergent repair,one (2, 77%) after elective surgery. No fatal event was observed in endovascular series. All of endovascular procedures were performed in operating theatre under local anaesthesia. Technical success was achieved in 24 endovascular procedures (96%). Coil embolization was used for aneurysm exclusion in 8 cases (33,3%) and in 17 (66,9%) cases we used a stent-graft. The failed endovascular procedure was successfully converted in the same time. No endoleaks was observed at mean follow-up of 18months.

Conclusion: Nowadays surgery carries a significant risk of morbidity and mortality. Endovascular treatment is a alternative option for VAAs. Usually coil embolization could be preferred in anatomically difficult cases. In our experience stent-grafting is the treatment of choice in selected cases where anatomic conditions are suitable.

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Post-Traumatic Pseudoaneurysm Formation At the Site of Common Iliac Artery Stents: Endovascular Stent-Graft Treatment

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Purpose: To present a patient who developed a post-traumatic large common iliac pseudoaneurysm complicating stent-supported iliac artery recanalization.

Case Report: A pseudoaneurysm was detected in a 37-year-old man during a 2 year contrast-enhanced spiral computed tomography who presented with persistent post-traumatic abdominal pain. Two years previously the patient had undergone an uncomplicated procedure to implant 2 overlapping Protegè Nitinol Stents in an occluded common iliac artery. The examination showed no evidence of stent infection or stent rupture. During the subsequent urgeny intervention, the pseudoaneurysm was successfully excluded with the implantation of a Fluency stent-graft system. Post-operative contrast-enhanced spiral computed tomography and ecocolordoppler scanning at 6 and 12 months confirmed the feasibility and durability of the aneurysm exclusion and the patency of the endoprosthesis.

Conclusions: Post-traumatic pseudoaneurysm at the site of iliac artery stenting is rare and is an unusual complication, but endovascular stent-graft repair should be considered as the first treatment option.

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Aorto-Esophageal Fistula: a Case Report

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Introduction: Aortoesophageal fistula is a rare, frequently fatal cause of upper gastrointestinal bleeding. Although several causes have been described, rupture of the TAA into the oesophagus seems the most common cause, (12%). AEF fistula was described almost two centuries ago by Dubrueil, a French naval surgeon who assisted a sailor with thoracic pain and hematemesis after ingestion of a beef bone fragment. In case of thoracic aorta aneurysm the rupture occurs in the oesophagus between 6.2% and 22.1%, making it the most common cause of AEF (75%). We report a case successfully treated with endograft placement.

Case Report: The patient, a 89 year old woman admitted to our hospital with hematemesis. An abdomen and chest CT scan showed a pseudo-aneurysm fissuration. Under general anaesthesia a graft (COOK 26x134 mm) released after the origin of the left sub-clavian artery with esclusion of the bleeding point.

Discussion: AEF is often fatal, if the symptoms are not recognized and the patient immediately treated. In literature, mortality is reported from 30% to 80% with non-surgical treatment and survival is dependent on swift diagnosis, prudent operative repair followed by an appropriate antibiotic therapy. Several types of treatment have been described but regarding the best one, no general consensus exists. Endovascular stent placement has been described in literature with good results in stopping haemorrhage and stabilizing the patient's condition before further treatment. In conclusion, we believe that careful selection for an endovascular approach to AEF can improve the mortality and morbidity rate.

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Aorto-Esophageal Fistula Secondary to Endovascular Treatment of an Inflammatory Aneurysm of the Descending Thoracic Aorta

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Introduction: Endovascular procedures on the thoracic aorta (TA), known to cause less morbidity and mortality than surgery, are prone to serious complications such as aorto-esophageal fistulas (AEF). Lower morbidity and mortality in the treatment of such complications is nowadays possible thanks to the combined application of endovascular and endoscopic procedures.

Materials and Methods: 70-year-old male patient who had a successful endovascular exclusion of an aneurysm of the descending TA by means of two Endomed-Endofit endografts. The procedure was followed, on the 1st postoperative day, by vertebrobasilar insufficiency, treated by carotid-subclavian bypass. The postoperative course was uneventful and the patient was discharged on the 15th postoperative day. One month later the patients complained

of fever and chills. CT scan showed bubbles in the aneurismal sac. Leukocyte scintigraphy excluded graft infection. A new CT-scan with Gastrografin showed an AEF. Fistula exclusion by means of an esophageal endograft was performed.

Results: At two months, CT-scan shows correct positioning of the esophageal stent and of the aortic endograft, no recurrence, and shrinkage of the aneurismal sac. The patient is asymptomatic with no signs of infection.

Conclusion: AEF are a serious complication of endovascular treatment of the aneurysms of the TA. Their real incidence and the results of their treatment are unknown, as their presence in medical literature is anedoctal.

Compared to the high morbidity and mortality rates of surgical esophagectomy, endoscopic procedures represent a valid alternative to surgery with lower morbidity and mortality and high success rates in the medium term.

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Surgical Management of Renal Cell Carcinoma with Inferior Vena Cava Tumor Thrombus

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Objective: Although a radical operation remains the mainstay of the therapy for renal cell carcinoma (RCC), the optimal management of the patients with RCC causing inferior vena cava (IVC) tumor thrombus is still unresolved. We reviewed our experience and herein report the results.

Patients and Methods: Between May 1996 and March 2008, 11 patients (9 male and 2 female) with RCC extending into the IVC underwent surgical treatment. The mean patient age was 62,6 years (range: 46–78 years). The level of tumor extension was infrahepatic (level I) in 6 (54%), intrahepatic (level II) in 2 (18%), suprahepatic without atrial invasion (level III) in 2(18%), and 1 (9%) with extension in right atrium (level IV). All patients underwent radical nephrectomy, thrombus was removed through a small cavotomy closed primarily. Median sternotomy without cardiopulmonary by-pass (CPB) and hypothermia was performed in 2 cases and in 1 case CPB and hypothermia occurred.

Results: One patient died intraoperatively of haemorrhagic complications, one patient died on the 11th postoperative day. The remaining 9 patients were successfully discharged from hospital. Seven of them were lost during follow-up because of tumor progression at the 48th postoperative months.

Conclusion: Surgical treatment is the preferred approach. A complete IVC thrombectomy provides a better quality of life e may prolong survival. This study indicates that there is no significant difference in survival rates in regard to the different levels of tumor thrombus extension into IVC.

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Inferior Vena Cava Anomalies and Deep Veins Thrombosis

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Introduction: Congenital anomalies of the inferior vena cava (IVC) such as absence or atresia are uncommon vascular defects and result from aberrant development during embryogenesis. In literature has been described the association between IVC anomalies and Factor V (Leiden) polymorphism. Conditions which result in hypercoagulable blood or venous stasis may predispose to the development of deep vein thrombosis (DVT). We describe 4 cases that are occurring to our observation.

Material and Methods: Over a 5-year period we have observed four young patients with spontaneous unprovoked DVT. Further, bilateral DVT was present in three of the four cases. Three patients showed thrombophilic mutations at the blood tests.

Results: IVC anomalies (3 hypoplasia/agenesia and 1 duplication) were demonstrated in all patients through duplex scan, and confirmed through CT scan or cavography. The indefinite oral anticoagulation was the treatment of choice; only in a patient was necessary to place a permanent vena cava filter for recurrent pulmonary embolism.

Conclusions: An anomaly of the inferior vena cava should be considered in young patients who present with bilateral deep vein thrombosis of the femoral and iliac veins. Coagulation abnormalities, frequently found in these patients, may be a contributory factor.

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Type II Endoleak: Clinical Evolution and Treatment

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Background: Type II endoleak is a frequent complication of EVAR**.**

Clinical significance, indications and efficacy of re-interventions are controversial.

Aim of the study is to analyze the incidence, treatment possibilities, and results.

Materials and the Methods: From 1997 to 2008, 1030 patients were treated by EVAR. A regular follow-up plan was done using ecocolordoppler, abdominal XR and CT angiography.

Collected data and images were archived to get accurate comparison on a time basis.

Results: Incidence of type II endoleak was 13,2% (136/1030): primary 56,6% and secondary 42,6%. 53,7% demonstrated the persistent type.

Forty patients (29,4%) were treated: 7 with conversion to open surgery and 33 with mini-invasive interventions.

Re-interventions for occlusion of collaterals responsible for endoleak were 19: 9 patients with percutaneous CT guided lumbar puncture, 8 patients with endoluminal embolization and 2 with direct laparoscopic ligation.

There were no peri-procedural complications. Mean follow-up period was 18 months (0 to 62 months). Sixteen out of nineteen patients improved: 3 patients showed no endoleak at the first CT follow-up, 13 patients reduced endoleak with shrinkage of the aneurismal sac, 2 patients were re-operated for the persistence of endoleak and 1 patient was surgically converted.

Conclusions: An accurate imaging protocol with good quality CT angiography and a comparison of pre/post EVAR exams are require for the diagnosis of type II endoleak. The embolization technique of the aneurismal sac is often insufficient as a treatment for such complication.

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Echo-Guided Placement of Temporary Inferior Vena Cava Filter in Pregnant Women with Iliac-Femoral Thrombosis

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Introduction: The therapy for deep vein thrombosis (DVT) of the lower extremity in pregnancy has debated. Warfarin is not an acceptable therapy to use during pregnancy because it passes through the placenta to the fetus and may cause teratogenic effects during the first trimester and central nervous system or ophthalmologic abnormalities. Heparin used for long time may increase the risk of bleeding, osteoporosis, and neurologic complications. The use of inferior vena cava filters in pregnancy is accepted and appear to be safe for pregnant women.

Methods: We placed an inferior vena cava filter (BARD™) to prevent pulmonary thromboembolism in a young women with progression of DVT at left femoro-iliac vein. The patient was at 16th weeks of pregnancy she presented unilateral oedema and left leg pain. the DVT diagnosis was made by means of duplex imaging. The procedure was performed with duplex-scan imaging to avoid radiation. The Device has been placed, via the right femoral vein, in inferior vena cava above the renal veins. Progression device was followed by real time duplex-scan without contrast. Anticoagulant therapy with EBPM was routinely performed together elasto-compressive therapy, and it was stopped in intrapartum period.

Results: No intra-procedural complication. No pulmonary thromboembolism occurred during or after delivery. The filter was successfully removed by fluoroscopy after 4 weeks post-partum.

Conclusion: The insertion of vena cava filter in patients with progression of DVT despite heparin therapy is accepted and appear to be safe for pregnant women. We performed this procedure without use of fluoroscopy for not submit mother and fetus to radiation.

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Deep Venous Thrombosis and the Lunar Phases. Is There a Correlation?

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Background: The effects of the lunar phases on biological processes have been described since ancient times. There are many publications, with sometimes contradictory results, that evaluate the biological effects of the moon. We would like to report an analysis of the cases admitted to our Center for deep venous thrombosis (DVT), evaluating the relationship to the lunar phases.

Methods: During a period of 12 months 37 patients affected by DVT were recovered in the wing of Vascular Surgery of the Parini Hospital in Aosta. During the process of observing the lunar phases at the admission, it was discovered that 23 patients (62%) were admitted with a waning or full moon, and 14 (38%) with waning moon. Only 1 patient among those admitted during the waxing phase presented another pathology that could justify the DVT (oncology patient p 0.0423). 3 patients out of the 14 admitted during the waning phase of the moon presented other pathologies as the possible origin: 1 patient with plaster, 1 oncology patient and 1 patient who underwent an abortion ($p<0.001$).

Results: Based on our study, a statisticaly significant influence of the waxing moon on onset of DVT can be seen. Nevertheless, the scarcity of the sample and the difficulty involved in determining the precise moment of the onset of the pathology, should be considered. A retrospective, multi-centric analysis could be useful.

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A New Local/Regional Anaesthesia Technique for Carotid Surgery

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Background: Combined superficial and deep cervical plexus block (T1) requires high specific skills and expertise and the potential complications associated are of concern. We present a retrospective comparison between 2 techniques: T1 and T2 (infiltration under the superficial cervical fascia).

Methods: T1 was used between 2004 and 2005 with 20 ml ropivacaine 0.75%. T2 has been used since 2006, and is performed

with a 1.5 cm 25G needle inserted perpendicular to the skin for all its length along the posterior border of the sternocleidomastoid muscle. Ropivacaine 0.75%, 10 ml, is injected under clinical-instrumental monitoring. This block is combined with subcutaneous infiltration of incision line (ropivacaine 0.75%, 10 ml).

Results: A total of 339 patients were included in the study (T1 group: 156 patients;T2 group: 183 patients). The total serious complication rate was significantly higher in T1 group as compared with T2 (8.3% versus 1.6%, p = 0.008). Similarly, the total anaesthetic technique-related serious complication rate was also significantly higher in T1 group (3.2% versus 0%, p = 0.047). Number of patients (93.4% versus 74.4 %, p = 0.000) and surgeons (98.4% versus 69.9%, p = 0.000) with complete satisfaction were significantly higher in T2 group.

Conclusions: T2 is easy to perform, improves patient and physician satisfaction and reduces overall complication rate.

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Critical Limb Ischemia: Surgical vs Endovascular Therapy

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Introduction: Critical limb ischemia generally manifests from multilevel atherosclerotic disease of the lower-extremity.

Materials and Methods: Since 2005 a retrospective review has been done of 35 bypasses in 35pts and 82 endovascular procedures in 64 pts. 75 (75,7%) of the pts were diabetic.The mean age was 48–85 yrs. The patients were selected for the endovascular procedures of severe femoral, popliteal and tibio-peroneal occlusive disease.

Results: Endovascular technical success was in 86% of lesions with balloon-angioplasty of the tibio-peroneal vessels and PTA/stenting of the femoro-popliteal axis. 94% of pts had clinical improvement with a low procedure-related mortality (0). Mid-term follow-up of these pts revealed a limb salvage rate of 92%. 9% of limbs required surgical bypass for salvage, and major amputations occurred in 12% of limbs. In the surgical treatment there were 3 (8,6%) deaths and 4 (11,4%) graft failures within 30days. Early graft failure led to transmetatarsal amputation (1), below knee amputation (1) and tibial vessels bypass with limb salvage (2). Mid-term follow-up revealed 6 graft failures, 6 major amputations, 4 graft revisions, and 3 deaths. Limb salvage rate was 87% at 24 months.

Discussion: Compared to a surgical approach, endovascular therapy appeared to result in a improvement in distal extremity perfusion, immediate relief of rest pain, augmentation of ulcer healing and especially the 30-day mortality rates were statistically significant (8,6% vs 0).

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Carotid Artery Stenting in Octagenarians

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Background: The influence of advanced patient age on the safety and efficacy of carotid artery stenting in octogenarians patients is controversial. A higher risk of stroke and death in octogenarians undergoing carotid artery stenting has been reported in several nonrandomized studies which assert that age has a negative impact on outcome after CAS.

Methods: From September 2003 to January 2008, 245 patients underwent carotid artery stenting. All these patients were separated by age in two categories: 49 octogenarians and 190 non-octogenarians. Both groups had similar preoperative comorbidities. Periprocedural cerebrovascular accident, transient ischemic attack, myocardial infarction, bradicardia, hypotension and death outcomes were compared in these two groups.

Results: There was a 100% success rate in reducing stenosis by carotid artery stenting. No statisically significant differences were observed between octogenarians and younger patients for postoperative stroke (2% vs 2.1%), myocardial infarction (2% vs 0.5%), hypotension (14.2% vs 10%) and bradicardia (6.1% vs 8.9%). No deaths were registered in both group.

Conclusion: In our experience the rate of major adverse events is lower than in other studies. Carotid artery stenting in octogenarians can be performed with high rate of primary success and low rates of periprocedural complications. Therefore carotid artery stent.

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Midterm Results of Suprarenal Fixation of Endovascular Stent-Graft

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Objective: To evaluate renal function and renal artery patency in patients who underwent abdominal aortic aneurysm repair with suprarenal endovascular stent-graft.

Methods: From September 2003 to January 2008, 146 patients were treated for Abdominal Aortic Aneurysm with endovascular technique. Suprarenal fixation was necessary in 58/146 patients. All patients were evaluated for renal function preoperatively and after one, three and six months postoperatively. Renal artery patency was established prior to surgery by CT and by ultrasound, intraoperatively by DSA, and after surgery by CT within one month from the procedure, and by US before the discharge and after the first, the third and the sixth month.

Results: No renal failure were observed except for one patient. In this patient, who was treated by aortouniiliac stent-graft we observed a partial coverage of the right renal artery. A stent was released through the free flow. After the procedure both renal arteries were patent. We registered a progressive increase

of the creatinine and BUN levels, a CT showed an occlusion of the right renal stent and a tight stenosis of the controlateral renal artery. Was done a right spleno-renal transposition. Creatinine became progressively normal and the patient was discharged in the 19th postoperative day. After four months follow–up creatinine increased so that the patient needed a chronic dialytic treatment.

Conclusions: The suprarenal fixation of endovascular aortic stent graft seemed to be safe and effective for the treatment of AAA. In particular it does not determine significant and persistent renal function alterations.

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Fractured Nitinol Stents in Three Cases of Carotid Artery Stenting

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Background: Carotid angioplasty and stenting (CAS) is emerging as a minimally invasive alternative in the treatment of cervical carotid artery occlusive disease. Although early results are encouraging, the long term follow-up and integrity of stents remain unknown. We report 3 cases of stent fracture and their management.

Methods: From January 2002 to December 2007, 407 CAS procedures were performed at our centre, with a mean follow-up of 36 months (range 1–58). At 1, 6 and 12 months and annually thereafter, all patients were submitted to a follow-up protocol of color-duplex ultrasonography for the detection of in-stent restenosis. In 86 cases we included cervival RX in 2 projections at 12 months and annually thereafter for the evaluation of stent integrity.

Results: Of those 86 patients assessed with RX, were observed three incidences of stent fracture with significant restenosis, requiring reintervention in two cases; totaly case were previously treated with nitinol self-expanding stents.

Discussion: These 3 cases of stent fracture call into question the durability of nitinol stents in cervical distrect and supports the inclusion of cervical RX in a follow up protocol for the classification and detection of restenosis in high risk patient following CAS.

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Arterial Injuries of the Visceral Vessels

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Introduction: Aim of this study is to estimate: incidence, therapeutic possibilities and mortality of visceral vessels trauma without involvement of abdominal aorta, in the area of the southern Tuscany (Siena, Arezzo e Grosseto).

Methods: Since 2000, we observed all abdominal arterial trauma joined to our observation in a prospective and controlled way. In 7 years we treated 32 polytrauma involving abdominal vessels (without aorta) needed emergency surgery. 14 out of 32 (44%) lesions from closed trauma and 18 (56%) from penetrating trauma.

Results: Overall mortality was high (17/32, 53%); the majority was related to other concomitant trauma (11/17), while only 6 (19%) were directly correlated to arterial lesion. We treated 7 patients endovascularly, including 3 coil embolizations and 4 endograft repairs.The 25 surgical procedures included 12 ligature of bleeding vessels and 13 surgical vessel reconstruction(9 bypasses, 4 end-end anastomoses).

Discussion: The lesion of visceral vessels are aggravated from very high mortality, even though without involving the abdominal aorta. The prognosis in patients with polytrauma is strictly related to the efficacy of first aid procedures. Possible improvement of the prognosis might come from the availability of a 24-hours on call Vascular Surgeon integrated into the Department of Emergency, who can treat these lesions by surgical and/or endovascular approach.

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Management of Endograft Migration after EVAR

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Objective: Success after endovascular abdominal aortic aneurysm repair (EVAR) may be hampered by distal migration of device, define migration as the sliding down of the graft 10 millimetres lower than the first positioning. Migration can be related to dilation and elongation of the infrarenal aortic neck, wrong oversizing of the graft at implantation or to the radial force of the device at the aneurism' neck. The goal of clinical follow-up is to detect migration of the endograft and, should this occur, to provide a reliable and definitive correction of the problem.

Method: From March 2004 to March 2007 we performed 85 EVAR, using 73 bifurcated and 12 aortouniliac devices. At a 12 months minimal follow up we found to 4 endograft migration (4.7%) documented by CT scan. Indications for correction were

type I endoleak or a short proximal fixation length that could lead to an endoleak (lower that 10 millimetres). We treated every migration by implanting a new aortouniliac graft, occluding the contralateral leg of the old device and finally we performed a femoral-femoral crossover.

Results: The treatment was successful in all cases, and no patient developed a new migration or endoleak at the follow up (minimal 12 months).

Conclusion: A significant migration of the graft should be corrected promptly mostly because it may be responsible for type I endoleak and failure of EVAR. In our experience the implantation of an aortouniliac device with femoral-femoral crossover gives a reliable and definitive solution of the problem, possibly better than the deployment of an extension cuffs.

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Type 2 Endoleak: a Single Centre Experience

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Aim: Type 2 Endoleak is described by a persistence of blood outside of the endoprosthesis lumen, but within the aneurysmal sac; and it is caused by retrograde flow from the AMI (II A) or lumbar arteries (II B) or from collateral vessels. Type 2 Endoleak occurs in 20% of patients who underwent EVAR. Aim of the study is to define the diagnostic and therapeutic course for a type 2 endoleak patient.

Materials and Methods: Between January 2000 and March 2007 237 patients undervent EVAR. A CT scan was performed 30 days after surgery and then after a year, alternating with a ultrasound every 6 months.

Patients with type 2 Endoleak had a CT follow-up after 6 month and a second surgery was considered only for a sac expansion >5mm.

The analysis of the results includes: sac expansion, rate of following surgery, surgical conversion, AAA breakage.

Results: On the first routine TC 41 patients (17%) were found with early type 2 Endoleak. Average follow-up was 32,8 months (range 6–68).

In 28 cases (68%) of early type 2 Endoleak there was a complete and permanent recovery within 6 months. Thirteen patients (32%) had type 2 Endoleak for more than 6 months (persistent).

In those patients where the type 2 Endoleak exceedes > 6 months, a noticeable increase (>5mm) of the aortic diameter has been observed: 12% over the first year, 48% over the second year and 72% over the third year. Aneurysm breakage occurred only in 1 patient with type 2 Endoleak (8% of patients with persistent endoleak 2; 0,5% of the total). At a later date the persistent endoleak 2 has been treated with: embolization by super-selective catheterization (8 cases), after endovascular failure, a by-pass was performed (2 cases) ; no experience with translumbar puncture; no laparoscopic binding.

Conclusions: Type 2 Endoleak is associated with an higher risk of adverse results (sac expansion, rate of later surgery, surgical conversion, breakage). This data shows that in patients with a persistent form (>6 months), the type 2 endoleak must be treated aggressively. Until when a solution for type 2 endoleak will be found, the EVAR remains an imperfect treatment that requires a continuous follow-up.

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Endovascular Approach to Spontaneous Acute Aortic Dissections: A Simple Trick to Help Safe Deployment

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Spontaneous Infrarenal Acute Aortic Dissection (SIAAD) is a rare event. Although SIAADs may be managed medically or surgically, the described experience with an endovascular approach is poor. We report the case of a 61 y.o. man with SIAAD extending into both iliac arteries and treated with a bifurcated endovascular graft (EVG) by using a simple technical trick. The unusual presentation of the disease, indications to different approaches and technical notes are discussed.

Among all kind of dissections that can affect the thoracoabdominal aorta, spontaneous infrarenal acute aortic dissection (SIAAD) is probably the rarest occurrence. Because the small number of cases reported in the literature, little is known about the natural history of the disease and the strategies to treat it are not well defined either. Despite the lack of indications, a review of the literature suggests that surgical treatment offers better results than medical therapy alone.

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Descending Thoracic and Abdominal Aortic Coarctation in the Young: Surgical Treatment after Percutaneous Approaches Failure

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Descending thoracic and abdominal aortic coarctations are characterized by a segmental narrowing that frequently involves the origin of the visceral and renal arteries. Optimal primary treatment is debated, being reported for both surgical and percutaneous complications. We describe our surgical experience with two youths presenting with failure of distal descending aortic stenting and with abdominal aortic coarctation post-balloon angioplasty, and associated thrombosis of a stented right renal artery and stenosis of the origin of the superior mesenteric artery

(SMA). In both cases, a longitudinal aortoplasty was performed with a polytetrafluoroethylene (PTFE) patch, using simple aortic crossclamping. Renal thrombosis and SMA stenosis were managed with eversion technique. In-hospital course was uneventful. Midterm follow-up showed absence of significant restenosis and better control of hypertension. In order to refrain from operating on these patients as long as possible, and also because of the very high risk of a redo-surgery, we think that an initial balloon angioplasty should be considered. Surgical management can be adopted, even after failure of percutaneous treatments, with satisfactory short- and midterm vessels patency.

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Abdominal Aortic Aneurysm Repair: the Major Complexity of Open Surgery in the Endovascular Era

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Objective: Aim of this study was to review our experience in open repair (OR) of abdominal aortic aneurysm (AAA) in last 15 years in a period of wide diffusion of endovascular techniques.

Materials and Methods: Between January 1994 and December 2007, 1327 consecutive elective OR for AAA were performed at our Institution. Perioperative results in patients operated on from 1994 to 1999 (693 interventions, Group 1) were compared with those obtained in patients undergone OR from 2000 to 2007 (634 interventions, Group 2).

Results: Suprarenal aortic cross-clamping was required in 0,5% of cases in Group 1 and in 5% of patients in Group 2 (p<0,001). Patients in Group 1 had a concomitant renal revascularization in 0,4% of cases, while this procedure was performed in 2,1% of patients in Group 2 (p=0,006). A higher number of hypogastric revascularizations was required in Group 2 with respect to Group 1 (4% vs. 0,5%, respectively, p<0,001). The overall 30-day mortality rate was 1,6% in Group 1 and 2,3% in Group 2. The overall 30-day major morbidity was 5,8% for patients in Group 1 and 8,8% for patients in Group 2 (p=0,03).

Conclusions: The impact of the wide diffusion of endovascular techniques in AAA repair made open surgery more challenging and technically demanding than in the past.

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Trans-Obturator Homograft Bypass for Infected Femoral Artery False Aneurysm in Drug Abusers

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Summary: Infected femoral artery pseudo-aneurysm (IFAP) resulting from inadvertent (or intentional) intra-arterial puncture is a known complication in drug addicts who habitually self- inject via the groin. Surgical management is difficult, and still controversial as to the necessity, selection, timing and method of revascularization, and without uniform recommendations.

Case Report: A 36-year-old man with a long history of drug abuse(heroin and cocain). He was admitted with abscess and massive right groin bleeding dramatically and underwent emergency surgery. The surgical technique consisted of first exposing the distal external iliac artery (EIA) through a retroperitoneal incision. Once proximal control was achieved, the CFA (Common femoral artery) and PFA (Profunda femoral artery) were legated. The inflow anastomosis was placed to external iliac artery, with cryopreserved artery that was tunnelled through obturator foramen, then which was connected to SFA. 24 hours after surgery, the patient developed thrombosis of popliteal and tibial arteries , treated with thrombectomy and fasciotomy. Five days after thrombectomy, the patient underwent digital angiography that showed the patency of homograft and the femoral and popliteal end tibial arteries. Multiple antibiotic therapy in accordance with culture results was continued for 6 weeks after surgery. After nine months, clinical examination and ankle-brachial index and duplex scanning show the patency of homograft bypass and of all right limb arteries, and the wounds are recovered and there was no limb loss and no claudication pain on walking.

Conclusions: In drug abusers, legation alone of the CFA without revascularization is frequently associated with later intermittent claudication and limb amputation. Furthermore, arterial reconstruction with a synthetic or venous conduit is limited because of a contaminated field and, often, unavailability of autologous venous grafts. The use of cryopreserved homograft for reconstruction after IFAP excision is safe and effective.

Anesthesia

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Anaesthesia in Children Subjected to Hypospadias Repair

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Hypospadias is the most common congenital anomaly of the penis and its incidence is increasing. Cryptorchidism and inguinal hernia are the most common associated anomalies. The ideal age for surgical repair in a healthy child is between 6 and 12 months of age. The choice of an anaesthetic technique for pediatric ambulatory patients should ensure smooth onset, quick emergence at the end of surgery, prompt recovery and rapid discharge with no or minimal pain and/or PONV. Regional anaesthesia, central caudal blockade in the first year of age and penile block after the first year of age, can be combined with light general anaesthesia to provide excellent postoperative pain relief and early ambulation, with minimal or no need for narcotics. By placing the block before surgery starts but after the child is asleep, can reduce the requirement for general anaesthetic agents during surgery. The anaesthesia techniques for the correction of Hypospadias are the caudal blockade, in single shot or in continuous technique by the insertion of a catheter in the epidural space, or penile block. The main disadvantage of caudal blockade is the relatively short duration of postoperative analgesia. The addition of opioids, clonidine and/or ketamine to the local anaesthetic solution, produces an increase in the duration of analgesia following caudal blockade in children. The spasm of the urethra musculature due to the insertion of the bladder catheter is the most associated complication to hypospadias repair and for its treatment the NSAIDS (ketorolac 0.5 mg/kg) is added to the post-operative analgesia.

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Management of an Emergency Neonatal: Omphalocoele Permagna

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Definition: Pathology with congenital defect median plane of the abdominal wall navel basis and under some abdominal organs (intestines, stomach, liver) that appear wrapped in a transparent membrane.

Incidence: 1:5000–6000 live births.

Clinical Case: newborn to 37 weeks of gestation, with omphalocoele permagna. Immediate assistance has been addressed to the prevention of infection of peritoneal serous part, with gauze dampen of physiological sterile saline and antibiotic, and to the packaging of a bandage chamber. Stabilized vital parameters and excluding any illnesses associated (anomalies heart and kidney), it was taken to surgery. The positioning of the viscera in abdomen has determined is reducing the venous return and the oxygen saturation, both impairment of respiratory dynamics, with reduction of the pulmonary compliance. Particular attention was paid to the prevention of the most dreadful consequences of this disease: loss of water and electrolyte gut and hypothermia due to the loss of heat and the dehydration from high perspiratio. It has been provided, for that, the heating active with infusion of warm solutions (crystalloid 70 ML/h and plasma 10 ML/h). The reconstruction of the abdominal wall took place in two days after 15 days apart. The viscera abdominal were packaged in a special "bag" ("silo") in goretex and, daily, has reduced the mass still protruded. During the stay in hospital in ICU, the mechanical ventilation has been conducted with high respiratory frequency and low current volume, with help of a neuromuscular-blocking drug (cisatracurium) and appropriate sedation.

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Behavioural Changes in Children following Day-Case Surgery, a Follow-Up At 1 and 6 Months

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Objectives: Evaluation at 1 and 6 months of incidence of behavioural changes in children following day-case surgery.

Materials and Methods: A prospective study using a telephone and postal interview structured according to the Post Hospatization Behavioural Questionnaire of Vernon (1) at one and six months after surgery. 100 consecutive children ranging from 3 months to 13 years old were studied (86% male and 14% female). The inguinal herniorrhaphy was the most frequent type of operation (28,8%), followed by circumcision (19,5%), orchidopexy (17,8%), hydrocele correction (8,5%), frenulotomy of penis (6,8%) and others with a frequence of 1% respectively. The incidence and the type of behavioural changes were evaluated.

Results: One month after surgery there were behavioural changes in 41% of cases (34% separation anxiety; 22% general anxiety and regression; 19% aggression toward authority; 11% apathy; 7% anxiety about sleep; 7% eating disturbance). Six months after surgery there were behavioural changes in 2% of cases (50% general anxiety and regression; 50% separation anxiety).

Conclusions: Our study showed a reduction in the incidence of behavioral changes at 6 months compared with 1 months (2% vs 41%). This is consistent with the data of literature (2–4) in which this alteration is mainly linked to the overall hospitaliza-

tion-procedure (the impact with hospital reality and the trauma of separation from the mother). At several months these determinant factors disappear and this may explain the decreased incidence of these changes found in literature (2–4) and confirmed by our study.

Interventional Radiology

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Endovascular Treatment of Hepato-Carcinoma Using Drug Delivering Microspheres (Terumo DC Bead)

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Purpose: To report early- and mid-term results of TACE performed with drug-eluting Beads (DC-Beads) in the treatment of unresectable HCC evaluating nodule response rate and patient response rate.

Materials and Methods: Thirty-two class A and B cirrhotics (21 male, 11 female; age 46–82) with unresectable HCC received segmental chemoembolization using DC-Beads (100–500μ) preloaded with 100 mg of Epirubicin.

Fifty-three nodules ranging between 6 and 80 mm (mean 26.1 mm) were treated. Pseudocaspule was present in 17 nodules.

Response rate was assessed by contrast-enhanced CT scan at 1, 3 and 6 months; treated nodules were classified according to the response rate: A: complete necrosis of the nodule; B: <30% of hypervascolar tissue; C: 30–50% hypervascular tissue; D: > 50% hypervascular tissue.

Patients response rate was based on EASL criteria.

Results: No major procedure-related complications were observed.

At six-months CT scan 45.5% of nodules were in class A, 16% in class B, 13.5% in class C and 25.5% in class D. If only capsulated lesions are considered, group A + B response were seen in 86.6% of cases.

Following EASL criteria, 26% of patients showed Complete Response, 37% Partial Response, 11% Stable Disease and 11% Progressive disease; Objective Response (Complete Response + Partial Response) was observed in 63% of patients.

Conclusions: As reported in the literature and from our results TACE performed with drug eluting beads seems to be a safe and promising technique in the treatment of unresectable HCC; assessment of nodules response rate suggests that best results are obtained in patients with single capsulated lesions.

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Seven Years of Experience in Carotid Artery Stenting with Cerebral Protection Device

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Purpose: To evaluate the results and the technical aspects of seven-year experience in carotid artery stenting (CAS) performed with different cerebral protection devices in order to prevent thromboembolic complications.

Materials and Methods: From February 2000, 314 patients with internal carotid artery stenosis underwent carotid artery stenting (331 procedures were performed). They were 213 men and 101 women (age 65–87 years, mean 71,4 y.). One-hundred-twenty-one patients wee symptomatic with stenosis > 50% and 193 were asymptomatic with stenosis > 80%; 282 primary stenosis and 49 stenosis secondary to TEA were treated. Seventeen patients underwent bilateral stenting. A cerebral protection device was used in 314 cases in order to prevent cerebral embolization; 17 cases (5,1%) were performed without cerebral protection. All cases were performed using self-expandable metallic stents. A cerebral MRI examination with diffusion and perfusion sequences was olso performed before and after the procedure to evaluate neurological complication occurred during CAS.

Results: Technical success (residual stenosis < 30%) was obtained in all cases (100%). The mean follow-up was 21,5±15,8 months. Thirty-days mortality was 1/314 cases (0,3%). One year mortality was reported in 2/314 cases (6,3%). Six major complication were observed (1,8%): 3 periprocedural major strokes (0,9%) and 3 post-procedural (within 3 days) major strokes (0,9%). In 21 cases (6,3%) embolic material was found inside the cerebral protection. In 4 cases a moderate itra-stent restenosis was observed (1,2%) and treated with angioplasty in 2 cases an with angioplasty and re-stenting in the other two cases.

Conclusions: CAS represent a feasible procedure that can be performed in high-risk patients and it is associated with a low restenosis rate.

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The Management of Left Subclavian Artery in The Treatment of Thoracic Aortic Disease

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Purpose: To assess clinical consequences and complications after intentional occlusion of left subclavian artery (LSA) during stent-graft deployment for thoracic aortic pathologies.

Methods and Materials: From December 2000, 43 type B dissections and 20 thoracic aneurysms (TAA) underwent endo-

vascular treatment. A short proximal neck (<2 cm) was present in 23/43 dissections and in 6/20 TAA. Pre-treatment evaluation of carotid and vertebral arteries was done in all cases. Dissection: all LSAs were covered by the stent-graft. TAA: LSA origin was covered in five cases.

Results: After LSA exclusion, blood pressure in the left arm significantly decreased. TAA: 5/5 patients were asymptomatic; two endoleaks (40%) originating from the LSA were evident. Dissection: 1/23 patient (4.3%) required a surgical transposition of the LSA for visual impairment eight months after. In eight patients (34.8%), revascularization of the false lumen occurred from the LSA. Endoleak sealed spontaneously in one case (12.5%). LSA origin and false lumen were occluded with coils (N=1), glue (N=4) and coils+glue (N=2).

Conclusions: Prophylactic LSA transposition is not necessary prior to stent-graft placement. For the high incidence of endoleaks, occlusion of the LSA during stent-graft deployment is highly recommended.

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The Rule of Viabil in Malignant Biliary Obstruction

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Purpose: To compare clinical effectiveness of ePTFE covered metallic stents with uncovered stents for palliative treatment of malignant jaundice due to cholangiocarcinoma.

Materials and Methods: Fifty patients with inoperable cholangiocarcinoma Bismuth types I-II and no hepatic metastasis were admitted for palliation. They were 28 men and 22 women (age 39–86, mean 62,3). Stricture was located in upper CHD (without infiltrating the duct confluence) in four patients, lower CHD in13, upper CBD in 22 and lower CBD in 11.There was no infiltration of the cystic duct. We used 36 Wallstents (Boston Scientific) 6–9 cm long and 10 mm wide in 30 patients (group A) and 21 Viabil (W.L. Gore) covered stents with and without side holes in 20 patients (group B). All patients were followed –up until death.

Results: Technical success was 100% in both groups. Early stent occlusion was noted in one group B patient due to sludge formation and was treated by dilation. Complication rate was 13,3% in group A and 10% in group B. One year primary patency was 54% for group A and 77,2% in group B.

Conclusion: Viabil stents offer a significantly better 12-month primary patency than mesh stents in the palliation of malignant strictures due to cholangiocarcinoma without hepatic metastasis.

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Endovascular Revascularization for Limb Salvage in Diabetic Patients

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Purpose: To evaluate short- and long-term results in diabetic Patients who underwent endovascular revascularization for limb salvage.

Material/Methods: From 2001 to 2007 635 diabetic Patients, were treated with different endovascular techniques to obtain a direct flow to the foot and to avoid major amputation. All the lesions were staged with Texas classification: 65 Patients (10.25%) stage IIB, 80 (12.6%) IIC, 109(17.16%) IID, 16 (2.52%) IIIA, 115 (18.11%) IIIB, 129 (20.31%) IIIC and 121 (19.05%) IIID. The only contraindication is the lack of visualization of the plantar arch and/or the pedal artery**.** All Patients were previously assessed with clinical evaluation, TcPO2/TcPCO2 measurement and studied with angiographic-MRI or angiographic-CT. The Patients had several comorbidities (coronary arteries disease, hypertension, nephropathy).

Results: Post-intervention evaluation included measurement of TcPO2/TcPCO2, clinical evaluation and ultrasound. Technical success was 95.6%. The 1.9% of Patients despite technical success underwent to amputation for ostheomielitis and microangiopathy. 68(10.7%) Patients underwent re-intervention, for not healed wounds or decrease of TcPO2. The success rate was achieved in 53(8.34%). Mean follow-up time was 24 months. The rate of limb salvage and major amputation was 91.34% and 8.66% respectively.

Conclusion: Endovascular revascularization shows an high technical success rate with an elevated success rate of re-intervention and should be considered as the primary preferred therapeutic option in lower limb salvage for diabetic Patients.

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Trans-Caval Endoleak Embolization (TCEE) for Type I and/or Type II Endoleak

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Purpose: To investigate the feasibility, efficacy of an alternative technique for treatment of type I or/and II endoleak after endovascular repair, through transfemoral-caval approach of abdominal aortic aneurysm (AAA) with adhesion to vena cava.

Methods and Materials: Twelve-years single centre experience in treatment of endoleaks was reviewed. In the last year, 23 patients (13 with type II, 9 with type I and 1 with type I and II endoleak) were treated with transfemoral-caval puncture and

embolization inside the aneurysm sac. This was performed using a combination of coils, N-butyl-cyanoAcrylate (Glubran 2) and thrombin. Coils in number from 10 to 21/patient and mean size of 9x60 mm and maximum 1 ml of glue, thrombin was enough to achieved occlusion of endoleak.

Results: Population of study is 23 patients (14 men, 9 women; mean age 77.2 years). The mean time of follow-up was 16 months. Technical success after endoleak treatment using TCEE technique was achieved in all cases (100%). During the follow-up time any aneurysm-related death or diameter increase of aneurysmal sac was shown and endoleak recurrence was observed in one case.

Conclusion: TCEE represents an original technique of type I and/or II endoleak treatment which seems to be safe, feasible and can offer new possibilities for the treatment of this complication.

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An Up to Eight-Year Follow-Up of Endovascular Treatment of Internal Carotid Artery Stenosis: Our Results

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Objective: Carotid artery stenting (CAS) may be an alternative to endoarterectomy not only in high-risk patients. Few data are available on the long-term clinical efficacy of CAS and on the incidence of restenosis. Our experience demonstrates that if requirements are fulfilled CAS can be considered an effective treatment with short and long-term high success rates.

Methods: April 1999–March 2008 we treated 1050 patients (1160 arteries) affected by internal carotid artery stenosis. 603 (52%) were symptomatic lesions, and 557 (48%) asymptomatic. The preprocedural evaluation was performed with DopplerUS, Angio-MR/Angio-CT and a neurologic evaluation. Antiplatelet therapy was administered before and after the procedure.

Results: Technical success was achieved in 1155 cases (99.6%) and a cerebral protection device successfully used in 1078 procedures (92.9%). The 30-day TIA/stroke/death rate was 2.16%: death (0.18%) major stroke (0.45%) and minor stroke-TIA (1.53%).

During an up-to-8-year follow-up restenoses occured in 39 cases(3.36%), of which 28 were post-CAS(2.41%) and 11 after a CAS due to post-TEA(0.95%) restenosis. Only 5 symptomatic restenoses >80% were retreated with an endovascular treatment.

Conclusions: CAS is an effective treatment with better results compared to endarterectomy.In our follow-up CAS seems to be effective in the prevention of stroke with a low restenosis rate.

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Male Varicocele: Transcatheter Foam Sclerotherapy with Sodium Tetradecyl Sulfate – Outcome in 512 Patients

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Purpose: Retrospectively evaluate the recurrence rate, resolution of pain, improvement of semen parameters, and achievement of pregnancy after transcatheter foam sclerotherapy (TCFS) in varicocele by using sodium tetradecyl sulfate (STS) foam.

Methods: We conducted a retrospective study in 512 consecutive male patients (mean age, 27.6 years; range, 16–42 years) with 694 varicoceles treated with TCFS between January 2000 & March 2008. The gonadal vein was then selectively catheterized; a foam of 3% STS and air was injected. Follow-up was performed with physical and Doppler ultrasonographic examinations; by using a questionnaire-based assessment of pain and pregnancy and semen analysis was performed.

Results: Technical success was 97.5% (677 varicoceles). Complete follow-up results (mean, 91.6 months) in 568 varicoceles (81.8%) revealed 19 (3.3%) grade II-III recurrent varicoceles and resolution of pain in 337 (96.8%) of 348 cases. Significant improvement of semen parameters was achieved in infertile patients. Of 145 patients with pretreatment sperm alterations who desired pregnancy, 65 (44.8%) achieved pregnancy.

Conclusion: TCFS in male varicocele with STS foam was associated with a low recurrence rate, pain resolution, and an improvement of pretreatment sperm parameter alterations; a substantial increase in pregnancy achievement was obtained for patients who desired pregnancy.

Day Surgery

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Mesh Fixation with Fibrin Glue in Open Inguinal Hernia Repair

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Introduction: Prosthetic meshes have shown successful results in groin hernia repair. However, chronic pain remains frequent the precise incidence in unknown but epidemiological studies suggest that about 20% of patients are affected and in 12% of

patients the chronic groin pain limit daily activities. Mesh fixation is a possible key factor in the occurrence of this complication. Thus, the use of fibrin sealant to secure the mesh may represent a useful alternative for the prevention of chronic pain.

Patients and Methods: Between January 2006 and December 2007, we employed a sutureless Lichtenstein technique in 97 consecutive patients with primary unilateral inguinal hernia. Human fibrin glue (TISSUCOL Duo®) to secure the mesh. Operation details, postoperative assessment -including postoperative pain, length of hospital stay, postoperative complications, wound healing time and convalescence were noted.

Results: The mean age of the patients was 56 years (range 19–81). Median operating time was 50 minutes and all patients were discharged within 7 hours after the operation. The median postoperative VAS score was 0,3 and no postoperative complications were observed. All patients resumed daily activities within 5 days. No recurrence were noted at a median follow up of 11 months.

Conclusions: Although the limited follow up period, this study confirms the efficacy of mesh fixation with human fibrin glue, and supports the viability of a sutureless Lichtenstein procedure. However a large randomized trial comparing fibrin sealant and suture fixation with long term follow up is warranted.

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Tension Free Modified Primary Closure for Pilonidal Disease

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Introduction: The best trreatment for sacrococcygeal pilonidal disease is still debated. We made a modification of the conventional primary closure and evaluated the surgical outcome of the technique.

Patients and Methods: From January 2004 to December 2007, 265 consecutive patients were treated. All patients underwent excision and primary closure according to our method: the cavity was closed by a double layer of interrupted resorbable sutures; the deeper layer included the deeper half of the subcutaneous tissue and the presacral fascia; the superficial layer included the external half of the subcutaneous tissue and the derma. Skin closure was performed using interrupted caprosyn 3/0 resorbable sutures or glue.

Results: Clinical presentations were: active SP abscess in 52 patients; chronic infection with multiple fistulas in large areas in 115; recurrent pilonidal disease in 43; 63 patients complained of little pain and pruritus, finally 98 patients were asymptomatic. The median operative time was 35 minutes; the median postoperative pain VAS score was 1; the median hospital stay was 8 hours; the median time off work was 10 days. Twenty-one patients demanded a small debridement of the infected wound that healed with local therapy within 5 weeks after surgery. Only 2 full wound dehiscence were detected that healed conservatively in 8 weeks. During a median follow-up of 34 months 3 recurrence was detected.

Conclusions: Although with a mid-term follow up, the study confirms safety and effectiveness of the technique. However a randomized trial with a long-term follow up is warranted.

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Clinical Experience of Milligan Morgan Haemorrhoidectomy with Ligasure™

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Introduction: Haemorrhoidectomy is frequently associated with significant postoperative pain and prolonged hospital stay; different techniques and devices have been developed to overcome these problems, including modifications of the technique (excision without legation) and introduction of new surgical instruments (Ligasure™, Harmonic Scalpel™). We evaluated the surgical outcomes of Milligan Morgan haemorrhoidectomy with LigaSure™ in an intended Day-Care setting.

Patients and Methods: Between January 2004 to December 2007, 557 consecutive patients with grade 3 or 4 symptomatic haemorrhoids underwent a LigaSure™ haemorrhoidectomy according to Milligan Morgan technique.

The operative time, postoperative pain score, duration of hospital stay, postoperative complications, wound healing time, convalescence and recurrence were documented.

Results: Median operating time was 15 minutes (range 7–35), the median postoperative pain VAS score was 1 (range 0–3) and all patient were discharged within 7 hours. The median convalescence period was 7 days (5–15) and complete wound healing time was recorded after the median of 16 days in all patients.

One case of immediate postoperative bleeding, which was surgically treated, was reported. During a median follow up of 39 months 3 recurrences were detected and 2 patients developed late anal stenosis, successfully managed using anal dilatators. None of the patients developed faecal continence impairment at the end of the observational period.

Conclusions: Ligasure™ haemorrhoidectomy can be considered a safe, simple, reproducible and fast procedure that allows low rate of early and late postoperative complications, reduction of postoperative pain and hospitalisation, fast wound healing time and quick return to work.

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Tension Free, Sutureless Inguinal Hernia Repair with Parietene Progrip

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Introduction: Open tension free techniques of inguinal hernia repair using synthetic meshes revealed an excellent clinical outcome with low recurrence rate. Nevertheless, the importance of postoperative pain, is a concern and the commercial availability of different prosthetic materials, the continuous search for alternative technical solutions are indicative of the ongoing search for the ideal technique for inguinal hernia repair. We herein present our experience with 74 patients treated with tension free, sutureless inguinal hernia repair with PARIETENE PROGRIP a new semiresorbable self fixing mesh.

Patients and Methods: Between January 2006 and December 2007, 74 consecutive patients with primary monolateral inguinal hernia were treated. All patients underwent tension free, sutureless inguinal hernia repair with PROGRIP mesh without any fixation. All data concerning operative details, duration of operation, postoperative pain, hospital stay, wound healing time, postoperative complications and convalescence were recorded.

Results: The mean age was 51 years (range 19–77). Median operating time was 72 minutes and all patients were discharged within 7 hours after the operation. The median postoperative VAS score was 2 and no postoperative complications were observed. Return to normal work was on average after 12 days. The median follow up was 2 months.

Conclusions: In conclusion, from these preliminary results sutureless PROGRIP inguinal hernia repair seems an promising alternative to sutures in order to secure prosthesis and reduce chronic inguinal pain. A large multicentre randomized trial is ongoing to compare surgical outcomes of PROGRIP repair and suture fixation in a long term perspective.

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Trichofolliculoma: A Case Report

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Introduction: Trichofolliculoma is a rare, benign cutaneous adnexal neoplasm, originated from hair follicle, most commonly occurring on the head and neck.

Methods: A 71 years old man was admitted to the our day surgery unit with presumptive diagnosis of basal cell carcinoma of face. Clnical examination revealed an asymptomatic nodule of the nose. Excisional biopsy was performed.

Results: Histological examination revealed trichofolliculoma of the nose, totally exsected. No cell atypia or recurrence after excision was noted.

Discussion: Trichofolliculoma is an uncommon benign disease of skin that can occurred also in other place of body as upper lip, vulva, penis, scrotum. Main differential diagnosis can be performed with basal cell carcinoma, also if in litterature collision tumour of trichofolliculoma and basal cell carcinoma is reported. Excisional biopsy is necessary and it is estimated correct diagnostic and therapeutic choice.

Ophthalmic Surgery

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Posterior Chamber Phakic Intraocular Lens (PRL) for Correction of Extreme Myopia

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Purpose: To evaluate the efficacy, safety and stability of implantation of the PRL™ (IOLTECH) for the correction of extreme myopia.

Methods: Fourty-five eyes of 38 patients (mean age 33) with high myopia received a PRL pIOL. Patients were examined preoperatively and 1 day, 1 month,6 months, and 1 year postoperatively. Main outcome measures were the spherical equivalent (SE), uncorrected visual acuity (UCVA), best spectacles-corrected visual acuity (BSVCA) and adverse events.

Results: The mean power of the pIOL was -15.34 diopters (D)± 3.45 (SD)(range -11.00 to -19.00), for a preoperative SE of -18.45 ± 4.56 D (range -12.50 to -22.00). The mean preoperative BSCVA was 0.50 ± 0.45 (follow up 14 ± 7.5 months). The mean postoperative SE was -0.43 ± 1.45 D at 1 month; the refraction remained stable throughout the follow-up period.

71.2% of eyes were within ± 1.00 D. Sixty-five percent of patients had UCVA > 0.5, and 88.2 % of patients had BSCVA > 0.8.

Conclusions: The results confirmed the long-term safety, efficacy, and predictability of PRL implantation for high myopia.

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Retinal Safety Study of Intravitreal Genistein in a Rabbit Model

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Purpose: To evaluate the preclinical safety of intravitreal genistein in rabbit eyes over a short-term period.

Methods: Twelve New Zealand albino rabbits were selected for this study. Four concentrations of genistein were prepared: 24 mg/0.1 mL, 135 mg/0.1 mL, 270 mg/0.1 mL and 540 mg/0.1 mL. Each concentration was injected intravitreally in one eye of three rabbits. As a control, the vehicle solution was injected into the other eye of each animal. Retinal safety of intravitreal genistein was studied with electroretinography (ERG) and histologic exam in rabbits. ERG recordings were made before the injection and 3 weeks after. Eventually, the rabbits were euthanatized and the retinas examined by light microscopy. Immunohistochemical staining with caspase-3 and -9 was also performed to evaluate apoptotic expression in all study and control eyes.

Results: ERG studies showed no significant difference between control and genistein-injected eyes at any of the doses in the rabbit model. Histological examination revealed no retinal abnormality in the rabbits injected with each concentration of genistein. Immunohistochemical staining with caspase-3 and -9 showed no different apoptotic protein expression in all study and control eyes.

Conclusions: Our results indicate that genistein is a safe intravitreal drug in the rabbit model up to 540 mg. If proven safe and efficacious in further studies, intravitreal injection of genistein could be considered an alternative therapy to that currently used in selected patients.

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Prulifloxacin Versus Ciprofloxacin Penetration Into the Aqueous Humour

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Purpose: To evaluate the penetration of prulifloxacin versus ciprofloxacin into the aqueous humor after oral administration.

Setting: S. Maria della Misericordia Hospital, Perugia, Italy.

Methods: Fortyfour patients having cataract surgery were randomly divided into 2 groups the day of preoperatory visit before surgery. The first group received 2 oral 600 mg doses of prulifloxacin at 24-hour intervals before surgery. The second group received 2 oral 750 mg dose of ciprofloxacin at 12-hour intervals before surgery. At the time of surgery, 0.1 mL aqueous fluid was aspirated from the anterior chamber just before the operation and immediately stored at – 4°C. Drug concentration were measured using HPLC.

Results: The mean aqueous level of prulifloxacin was 0.04 μg/mL ± 0.04 (SD); of ciprofloxacin , 0.18 μg/mL ± 0.14 (SD). The mean aqueous levels of prulifloxacin were not above the 90% minimum inhibitory concentration for most of the common microorganisms that cause endophthalmitis but also concentration of ciprofloxacin were not above the 90% minimum inhibitory concentration for most of the common microorganisms that cause endophthalmitis.

Conclusion: Therapeutic concentration of ciprofloxacin was not reached with oral administration. This antibiotic may be not effective for prophylaxis and as adjuvant therapy of bacterial endophthalmitis. Also therapeutic concentration of prulifloxacin was not reached with oral administration and this antibiotic should not administrated for prophylaxis and as adjuvant therapy of bacterial endophthalmitis.

Abdominal Wall Surgery

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Sportmen Hernia

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Sportsmen often suffer prolonged inguinal pain which can become a serious debilitating condition and may place an athletic career at risk. Sportsman's hernia (SH) is a controversial cause of chronic groin pain in athletes and other physically active people. This chronic groin pain in athletes forms a major diagnostic and therapeutic challenge and there is no evidence-based consensus available to guide decision-making). The basic pathology of a sportman´s hernia varies from one author to another, considering the presence of an occult hernia, a tear in the transversalis fascia or a muscle strains. Management of groin injuries is a difficult problem requiring a multidisciplinary approach to diagnosis and treatment planning can be challenging, and diagnosis can be difficult because of the degree of overlap of symptoms between the different problems. The final diagnosis often reflects the speciality of the doctor. Conservative treatment of SH does not often result in resolution of symptoms. These techniques, an open or laparoscopic hernia repair, offers good results with no complications and in most of the series an operative treatment can return the patient to his sport within.

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Hernia Surgery in Contaminated Fields. Options and Expectations

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Introduction: Hernia surgery (both groin and abdominal) in contaminated fields is an extremely demanding procedure. Infection might be referable to primary contaminated fields or to secondary infection of previously implanted mesh both needing defect repair. There is no safe indication to use non absorbable polypropylene mesh in primary or secondary repair in infected patients especially in resection of strangulated hernia and in colorectal surgery associated with large incisional hernia. Therefore simple suture of the defect if feasible or a traditional staged procedure might be performed although they are affected by high recurrence rate.

Methods: Modern hernia surgery in severe septic conditions includes absorbable mesh derived from human or animal source (dermal collagen, acellular dermal matrix) or homologous tissues remodelling (pedicled or free muscular and fascial flaps). Septic tissues and infected meshes should be removed if feasible to prevent ongoing infection.

Results: Surgical outcomes, infection, recurrence, complication rates and return to normal life activities are reported.

Conclusion: Autologous reconstruction or implant of absorbable mesh provides good chance of successful repair of the abdominal defect with low recurrence rate and septic consequences.

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Laparoscopic Ventral Incisional Hernia Repair. A Single Institutional Experience

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Ventral incisional hernias remain a common but partially unresolved problem, with reported recurrence rtes for open repairs as high as 25–50%. laparoscopic ventral hernia repair(LVHR), first introduced in 1993) offers several theoretical advantages. The need for extensive soft tissue dissection is avoided, natural intraabdominal pressure helps to hold the mesh in place and it allows the identification and effective treatment of so-called "Swiss cheese" defects. We report our experience of LVHR from March 2004 to March 2008 with PTFE dual mesh anchored circumferentially with spiral titanium tacks. 98 patients, 21 with recurrent hernias,were treated:55% sovra-, 30% sub- and 10% peri-umbilical, 5% parastomal. The mean diameter of the defect was 8cm. 2 procedures were converted to open,there were no documented enterotomies during adhesiolysis and average operating time was 75 minutes(range 25–145) and average length of postoperative stay was 3.1 days(range 2–7). 11 seromas were documented and no cases of infection of the prosthesis occurred. Mean follow-up was 22 months (range 0–46) during which 4 recurrences were seen. Our data, comparable with that reported in the international literature, lead us to sustain that laparoscopy is safe and feasible and provides the patient with the well documented advantages of minimally invasive surgery.

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Laparoscopic Treatment of Ventral Incisional Hernias: a Single-Institution Experience

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Background: Incisional ventral hernias are a quite common complication of abdominal surgery. Many reports show safety and feasibility of the laparoscopic approach, reducing recurrence rates from 25–52% to 3.4–9%. We report a single centre experience in the laparoscopic treatment of incisional hernias.

Material and Methods: From May 2004 to December 2007, 122 patients (46 men, 76 women) with incisional ventral hernia underwent laparoscopic repair. Mean age was 65.1 years (range 27–93); mean ASA score was 2.1. Different types of mesh have been used. Mean mesh area was 413 cm^2 (range 100–750). Surgery was performed through 2 trocars in 46 patients, 3 trocars in 71 and 4 trocars in 3.

Results: Mean operative time was 76.0 min. Mean hospital stay was 4.7 days (range 2–18). Complications were observed in 16/72 patients (22.2%): seromas, cellulitis, sepsis. Mortality was 1.38%: death due to systemic sepsis. Four patients required conversion to open surgery because of extensive adhesions from previous surgery. No case of mesh removal was reported.

Conclusion: Our experience support the feasibility and safety of laparoscopic repair of incisional ventral hernias. Low morbidity, short hospital stay and a fast return to activities of daily living were observed.

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Complete Two-Years Follow-Up in Laparoscopic IPOM Ventral Hernia Repair: Results of a Single Center Experience

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We report our initial experience on intraperitoneal onlay mesh (IPOM) laparoscopic repair in 30 patients (57% females) with abdominal hernia (27 incisional, 3 primitive - 7 recurrences, 3 emergencies) and consequent two year follow-up. Median age was 59.8 yrs (28–83), and BMI was 30.4. Mean defect diameter was

5.1cm (3–11), 43.3% were multiple. Open lateral access was the procedure of choice. We applied double layered meshes, all with at least a 4 cm overlap fixed by a double ring of endo-anchors (18 pts) or tack-spirals (12 pts). Average operative time was 84 min. Intra-operative complications were 1 jejunal lesion (treated without conversion) and 3 minor parietal bleedings due to fixation (controlled with bipolar coagulation). Drainage tube in Douglas was maintained for 1 day. No conversions were required. Median stool passage was in 2.2 day (concomitant to reprise of oral intake), 3 (10%) had prolonged ileus. Medical morbidity accounted 6.7%. No patient required NSAIDS for more than 2 days. Median discharge was in 5 days (3–12). Compressive dressing was kept for 30 days. Follow up was exploited with examination at 1, 3, 6, 12, 24 months, abdominal CT scan at 1 year, parietal US whenever pain was referred or a sieroma suspected. We evidenced 3 (10%) seromas, of 2–3 cm and asymptomatic. One (3.3%) sub-xyphoideal recurrence has been observed, at 6 months, not treated. Pain (VAS scale 3 to 4) was reported by 23.3% of patients, and ceased spontaneously within 3 months. Weight gain (>10%) was common (60% at one year). Long-term follow-up highlighted safe and satisfactory results for IPOM. Its application, when indicated, is recommended.

Thoracic Surgery

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Endoscopic Placement of One-Way Valves in Native Lung Hyperinflation (NLH) after Single-Lung Transplantation for Emphysema

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Introduction: Double-lung transplantation is considered the best therapeutical approach in end stage pulmonary emphysema. In selected cases single-lung transplantation has been considered an alternative option in spite of the risk of development of posttransplant native lung hyperinflation. Recently endobronchial blockage with one-way valves has been proposed for avoiding the perioperative risks of hyperinflation.

Methods: We report a case of 59-years-old women that was referred to our center for a history of emphysema due to alfa1-antitripsina deficiency underwent left single-lung transplantation because of previous right lung volume reduction treatment. After five months chest radiography showed NLH with mediastinal shift accompanied by increasingly progressive respiratory failure. We describe the successful result obtained by placement of three Zephir 4.0 EBVs in segmental lower lobe bronchi.

Results: The procedure was uneventful. Subjective improvement of dyspnea was already noted on the next day. One and three months after the approach, there was a respiratory improvement, confirmed by pulmonary function testing and chest radiography.

Conclusions: This preliminary report may suggest that this non-invasive bronchoscopic treatment may be considered a viable option in supporting the transplanted lung after the hyperinflation of the native lung.

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Surgical Treatment for Locally Advanced Non-Small-Cell-Lung-Cancer : Our Instutional Experience

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Introduction: From 2002 to 2006, 64 consecutive patients were treated in our Institute for locally advanced lung cancers : 56 males and 8 females with a median age of 64,7 years; smokers were 90%.

Materials and Methods: Endo-thoracic structures directly involved by the tumour were : pulmonary artery branch, pulmonary veins in their intra-pericardial portion and/or left atrium (*n=18*, 28%) mediastinal pleura (*n=16*, 25%), main bronchus (*n=15*, 23%), thoracic wall (*n=9*, 14%), pericardium isolated (*n=4*, 6%), Superior Sulcus Tumours (*n=2*, 3%). The lymph node status was N0 in 30 patients (46%), N1 in 17 (27%), N2 in 17 (27%). TNM staging were IIIB in 32 (50%), IIIA in 16 (25%), IIB (T3N0) in 16 patients (25%). T4 were found in 32 patients (50%) : among these, there were 14 T4N0M0 (22%). The lung resections consisted in 35 pneumonectomies (55%) , 25 lobectomies (39%) and 4 sleeve resections.

Results: There were no operative deaths; postoperative mortality rate was 6%. Overall survivals at 1 year was 78%, at 3 years 48% with a median of 25 months; for T4N0 disease were 71% at 1 year and 40% at 3 years; 19 patients (30%) had disease recurrence; they all were N1 or N2.

Conclusions: Lymph node involvement seems to be the worst factor that influence negatively the final outcome; on the other side, "T" factor is not an absolute contraindication to surgical treatment, even in its major extension.

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Association of Thymoma and Myasthenia Gravis: Oncological and Neurological Results of the Surgical Treatment

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Background: Thymoma occurs in about 10–20% of myasthenic patients. Surgery is mandatory in this subset of myasthenic patients. The objectives were to analyze the clinical features of

these patients and the oncological and neurological outcomes after thymectomy.

Methods: Clinical and pathological data, complete remission rate as well as overall and disease free survival were retrospectively analyzed in myasthenic patients who underwent extended thymectomy for thymoma between 1993 and 2006.

Results: 123 (60 M and 63 F) with a mean age of 56 years underwent extended thymectomy. The WHO histologic classification was: A in 22 cases, AB in 18, B1 in 33, B2 in 22, and B3 in 28. The Masaoka clinical staging was: I in 10 cases, IIA in 33, IIB in 50, III in 14, IVA in 15, IVB in 1. With a overall mean follow-up of 76 months 42 patients had a complete remission, 39 a remission with medications, 35 an improvement, 3 remained nearly in the same status and 4 worsened. At the last follow-up, 112 patients were alive; 11 with disease. Four deaths were related to the tumor. Actuarial five-year and ten-year survival was 93.4% and 79.6%.

Conclusions: Neurologic outcomes of the myasthenic thymoma patients were comparable or even better than those of the non-thymoma patients. As concerns the overall and disease-free survival it was dependent on the Masaoka stage and WHO classification.

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Preventive Local Anesthesia in VATS Sympathectomy

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Background: The aim of our study was to evaluate the effectiveness of intercostal preventive anesthesia in patients undergoing thoracic sympathectomy through VATS.

Method: We prospectively evaluated 18 consecutive patients undergoing bilateral VATS sympathectomy for hyperhidrosis. Each patient was randomised to receive, on one side, a total dose of 15 ml 0.5% bupivicaine injected to the port sites before incision and, on the other side, 15 ml of saline. All patients were interviewed at 4 hours, 1 day and 7 days after surgery. Pain intensity was recorded for each chest side by the means of the "visual analog scale" (VAS).

Results: No major postoperative complications were observed. Two patients (11.1%) had pleural fluid that resolved spontaneously. At 4 hours after surgery, wound pain was significantly reduced on the pre-treated side (p=0.003) and this trend was confirmed at 1 day (p=0.008). Preventive anesthesia also reduced chest wall paresthesia at any postoperative control (4 hours (4 hours: p=0.04; 1 day: p=0.03; 7 days: p=0.02). Only 2 of 18 patients (11.8%) needed postoperative additional analgesia. No patients had postoperative pain or paresthesia causing functional impairment.

Conclusion: Our results suggest that intercostal preventive analgesia is effective in the control of postoperative pain after VATS procedures, like thoracic sympathectomy for hyperhidrosis.

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The Role of 99m Technetium- Hexakis-2-Methoxyisobutylisonitrile (Mibi) in the Detection of Neoplastic Lung Lesions

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Objective: Our objecttive was to determine the role of 99m Tc-MIBI in the detection of neoplastic lung lesions.

Methods: We studied 38 consecutive patients with clinical and radiological suspicion of lung cancer. Each patient was submitted to chest Single Photon Emission Tomography (SPET) after 99m Tc-MIBI injection. Qualitative analysis was performed to localize abnormal activity in the radiologically demonstrated lesion. Semiquantitative analyse was made by calculating tumor/controlateral normal lung ratio (T/N). Finally, the scintigraphic findings were correlated to the histopathological diagnosis.

Results: In 30 patients were diagnosed 22 squamous cell carcinomas, 2 adenocarcinomas, 3 large cell carcinomas, 1 small cell carcinomas, 2 metastatic lesions. In 8 patients benign lesions were found: 3 hamartomas, 2 non specific inflammatory infiltration, 2 tubercolomas, 1 suppurating inflammatory infiltrate. Qualitative analyse SPET demonstrated that abnormal activity accumulation was significantly correlated to the malign lesions (accuracy: 86.4%, sensitivity: 90%, specificity: 75%, p=0.0003) and to the size of tumors (p=0,007). Semiquantitative analysis showed that for a T/N ratio higher than 1.32 value, sensitivity, specificity, positive predictive value and negative predictive value were 83.3%, 100%, 100% and 61.5% respectively.

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Usefulness of Thoracoscopic Approach in the Management of Thoracic Trauma

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Background: In the last decade videothoracoscopic approach (VT) has gained large consensus in the treatment of thoracic trauma, especially when dealing with clinically stable patients.

Methods: From January 1996 to December 2007 we performed 51 VT for acute thoracic injuries. In 41 cases the patient was a car accident victim, 10 cases showed an open wound (8 stab wounds, 2 gunshot). All the patients were clinically stable. We observed 22 emothoraces, 12 emo-pnx, 1 limphatic fistula, 10 open wounds, 5 diafragmatic hernias and 1 endopleuric foreign body. In 48 patients we performed a videothoracoscopic approach through 2 or 3 ports. In 3 cases a minithoracotomy was necessary to adequately control hemostasis and aerostasis. For diaphragmatic hernias VT was only diagnostic and the lesion was repaired through laparotomy.

Results: We observed no mortality or morbility. Median drainage time was 5.6 days (range 4–12). Median intrahospital stay was 7 days (range 5–14).

Conclusions: Since its introduction, VT has narrowed the indications for thoracotomy in the management of thoracic trauma making easier for the surgeon to obtain a correct diagnosis and at the same time a quick treatment. We think that videothoracoscopic approach is a safe and feasible practice in every kind of thoracic trauma, but is also important to be prepared for a thoracotomy if necessary.

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Preliminary Experience with "daVinci S" Robot In Thoracic Surgery

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Background: The da Vinci Surgical Robotic System was purchased at our institution in January 2007. We report here our first experience of general thoracic surgery with a robotic assisted technique (RATS).

Methods: RATS was performed in 6 patients. The system consists of a master console cable-connected to a surgical arm cart. The surgical instruments are attached to the arms of the robot and introduced via special ports. The surgeon, sitting at the console, operates via highly sensitive motion sensors the tip of the instruments.

Results: We performed 3 right lower lobectomies, 1 middle lobectomy, 1 pleuro-pericardial cyst resection and a macrobiopsy of an anterior mediastinal lesion. 4 cases were successfully completed with the robot. In 2 cases we had to complete the procedure by thoracotomy due to the absence of fissures. There was no surgical mortality, no relevant intraoperative blood loss and no major surgical complication in any of the patients. As a minor complication, after lobectomy we observed a persistent air leakage that was treated conservatively. Patients were discharged from hospital between 4 and 18 postoperative days.

Conclusions: Various thoracic robotic procedures have been showed to be feasible and safe, especially in operating difficult to reach anatomical regions. Further experience is needed to evaluate the clinical impact of the robotic approach.

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Endoscopic Thoracic Sympathectomy for Primary Hyperhidrosis: Results of 1025 Procedures and Advantages of Single-Lumen Intubation and Low Volume Ventilation

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Introduction: Endoscopic thoracic sympathectomy (ETS) is a minimally invasive treatment for palmar-axillary hyperhidrosis. We describe our results, feasibility and advantages of single-lumen intubation without CO_2.

Methods: From 6/2002 to 3/2008, 513 pts (age 16–69) underwent 1025 ETS of ganglia T2-T3 or T4. All procedures were bilateral and simultaneous except 1 pt with previous monolateral open ganglia resection in other hospital. We used three 5 mm axillary trocars and 30° optical systems. In the first 233 pts we used a double-lumen endobronchial tube. To avoid risk of tube inappropriate position or of tracheal injury we performed in 78 pts a single-lumen approach with CO_2. To reduce risk of CO_2 use we performed and now use a single-lumen intubation with low volume ventilation or block for 30" to collapse lung.

Results: No deaths or conversion to thoracotomy. Therapeutic success 99,6%. Patient's satisfaction 99,8%. 7 pts with previous clipping in other hospitals were successfully re-operated. 1 pt had a unilateral transient Horner's syndrome (36 hours). Transient compensatory hyperhidrosis in 17% patients.

Discussion: ETS is a safe procedure with low morbidity. Compensatory sweating is the most common side effect that require an important information. Surgery with single-lumen intubation without CO_2 is feasible, allows excellent visual acuity with fewer complications.

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Conservative Treatment vs Surgical Therapy for Iatrogenic Tracheal Injuries

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Introduction: We review our experience in managing tracheobronchial injuries after endotracheal intubations or endobronchial interventions and discuss the criteria for operative/nonoperative management.

Methods: From 1987 to 2008 60 tracheobronchial injuries were diagnosed. Lacerations showed clinical signs and typical X-rays. When injury is suspected are indicated bronchoscopy, Thorax CT. In 21 pts the tracheal tear (3–11 cm) was promptly repaired, by way of a right-sided posterolateral thoracotomy with primary multiple interrupted sutures and a pedicled intercostal

muscle protection. 3 pts required only a tracheotomy. The treatment was nonsurgical in 36 pts with clinical, radiological and endoscopic follow-up.

Results: 2 surgical pts died: 1 with associated esophageal laceration; 1 with sepsis, mediastinitis, myocardial infarction. Conservative therapy was successful in all the cases without sequelae. Early and late endoscopic follow-up showed no signs of tracheal stenosis or megatrachea.

Discussion: Conservative treatment is a safe and effective option in selected patients. Nonprogressive pneumothorax and mediastinal emphysema, uncomplicated ventilation, sufficiently covered tear, length <3 cm are main criteria. When surgery is necessary a pedicled muscle flap ensure a safe protection of suture. Delay in diagnosis is the single most important factor-influencing outcome.

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Cold Coagulation of Blebs and Bullae in the Spontaneous Pneumothorax: A New Procedure Alternative to Endostapler Resection

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Background: New improvements in the treatment of spontaneous pneumothorax may reduce the invasiveness of the procedure. We recently experienced a new device to coagulate blebs, avoiding endostapler resection.

Methods: Among patients with spontaneous pneumothorax undergoing thoracoscopic treatment, stage III and IV Patients (According to Vanderschueren's classification) were treated with a new device, based on coupling saline solution perfusion with radiofrequency energy (Floating Ball) allowing to coagulate the tissue avoiding burning.

Results: From 2004 to 2006, 25 patients were treated. They were 22 males and 3 females with a mean age of 27.7 years. In 7 cases we utilized thoracic epidural anaesthesia with the patients awake and spontaneously breathing, the others undergoing general anaesthesia. Mean operation time was 23 minutes. Post-operative drainage period and hospital stay were on average 2.5 days and 3.1 days respectively. Prolonged air leak occurred in 2 patients, one requiring re-operation after 8 days. On a median follow-up period of 17 months 1 recurrence occurred.

Conclusions: Cold coagulation of blebs seems to be effective in the treatment of primary spontaneous pneumothorax. Due to its advantages (i.e. less invasiveness, easiness, quickness) it appears to be particularly suitable to be associated with awake epidural anaesthesia.

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Thoracoscopic Approach to Mediastinal Parathyroid Adenoma, Our Experience

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Objective: The role of thoracoscopy in functional and benign thoracic diseases is constantly growing; we report our recent experience in the treatment of ectopic mediastinal parathyroid adenoma (PA) by thoracoscopic resection.

Materials and Methods: Between January 2005 and September 2007 3 patients with a mediastinal PA underwent surgical resection. All patients presented with initial osteoporosis and bone pain. Average serum PTH was 201±13 pg/dl. Scintigraphy with TC99m-sestaMIBI showed an area of increasing uptake in mediastinum of all patients, despite in one patients CT-scan was unable to locate an anatomical corrispective lesion in the uptake area.

Results: All patients had a radical resection without intraoperative or postoperative complications. Conversion to open procedure was unnecessary, even in the patient with undetected PA at CT scan: in this case all anterior mediastinal fat around the uptake area was removed and the confirmation of a complete resection came from downfall of intraoperative dosage of PTH in blood vessels.

Conclusions: Combined CT/RMN and Tc99m-sestaMIBI scintigraphy images, intraoperative dosage of PTH and eventually histological examination of specimen make all patients affected by mediastinal PA candidate to thoracoscopy. Complete resection can be achieved with better aesthetic and functional results.

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Clinical-Pathological Prognostic Factors in Bronchial Carcinoid Tumors

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Introduction: Bronchial carcinoids are rare, well-differentiated neuroendocrine malignant tumors. The histologic distinction between typical (TC) and atypical carcinoids (AC) basically lies on cellular differentiation, mitotic activity, and presence of necrosis; at single patient level, however, none of these features enables a reliable prediction of the clinico-pathological outcome.

Objective: To evaluate type of surgery, long term survival and clinico-pathologic factors influencing outcome in bronchial carcinoid tumors.

Patients and Methods: We reviewed data of 252 patients who underwent surgery for carcinoid tumor in our Institution.

The long-term outcome of 67 bronchial carcinoids was also correlated with a panel of immunohistochemical markers exploring cell differentiation (chromogranin, NSE, TTF1), cell turnover (Mib1) and apoptosis (Bcl2, Bax).

Results: There were 174 (69%) patients with TC (167 N0, 6 N1 and 1 N2) and 78 (31%) with AC (56 N0, 13 N1, 9 N2). Surgery consisted of 163 (64.7%) formal lung resections, 76 (30.1%) sleeve or bronchoplastic resections and 13 (5.2%) wedge resections. TC showed a more favourable prognosis than AC (10-year survival rate 93% and 64%; p=0,00001) as well as N0 patients in comparison with N1–2 patients (10-year survival rate 87% and 50%; p=0,00005). At univariate analysis of the 67 cases, tumor recurrence correlated significantly with: tumor location (p=0.01), mitotic index (p=0.003), necrosis (p= 0.002), tumor vascular invasion (p= 0.0001), Mib1 expression (p=0.005), Bcl2 expression (p=0.024), and limph-node metastasis (p=0.028). Mib1 and Bcl2 significantly discriminate between recurrent versus non-recurrent tumors (Mib1, p=0.0001; Bcl2, p=0.01).

Conclusions: Typical histology and N0 status were important prognostic factors in carcinoid tumors. Mib1 and Bcl2 significantly discriminate between recurrent versus non-recurrent tumors, producing a biologically plausible, diagnostically suitable immunohistochemical pattern. Parenchyma-sparing procedures must be considered the treatment of choice with systematic lymphadenectomy.

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Prognostic Implication of Micro-Residual Disease At the Bronchial Resection Margin in Patients Who Underwent to Sleeve Lobectomy for Lung Cancer (A Matched Case-Control Study)

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Objectives: Patients who underwent sleeve lobectomy with positive resection margins represent a special problem because most of them cannot tolerate further resections. We sought to evaluate the impact of microscopic residual disease after sleeve lobectomy for lung cancer.

Material and Methods: Bbetween 1980 and 2007, 282 sleeve lobectomies were done for lung neoplasm. 18 (6.4%) patients (Group A) had a final diagnosis of micro-residual disease (R1) at bronchial resection margin. R1 was classified into carcinoma in situ (n=7), invasive mucosal (n=11), peribronchial (n=1) and lymphatic (n=0). Histology revealed 12 squamos and 1 adenocarcinoma, 6 carcinoids.

On the basis of clinical, surgical and pathological characteristics another 18 patients (Group B) were matched for comparison.

Results: No anastomotic related complications were recorded in both groups. Locoregional recurrence affected 5 patients (27.8%, 2 anastomotic) in Group A – 4 of them received postoperative radiotherapy-, and 3 patients (16.7%, 1 anastomotic) in Group B (p=0.42). Patients with carcinoid histology had no local recurrence. No difference in overall survival was observed between group A and B (5-year survival 42 vs 48%, respectively; p=0.60); considering the patients with NSCLC a similar result was found. Two groups didn't differ in disease free survival (5-year 48.5 vs 61%; p=0.66).

Conclusions: Positive resection margins other than lymphatic infiltration didn't impact anastomotic integrity, locoregional recurrence rate, long term survival and disease free survival in patients with NSCLC and carcinoids who received sleeve lobectomy. Postoperative radiotherapy didn't affect the local recurrence rate.

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VO2max as Predictor of Mean Post-Operative Stay in Patients Submitted to Thoracic Surgery

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Introduction: We analized the efficacy of VO2max as predictor of mean post-operative stay (MPS) after thoracic surgery, compared to 6-min walking test (6MWT), METS (metabolic equivalent tasks) and left-ventricular (LV) ejection fraction (EF) at rest.

Methods: Forty-six patients, mean age 65 years, were submitted to functional evaluation before thoracic surgery and were stratified by direct and estimated VO2max determination, 6MWT, METS and LV-EF. MPS was considered for each group.

Results: 16 lobectomies, 20 wedge resections, 3 pneumonectomies, 2 pleurectomies, 2 LVRS, 3 biopsies were performed through thoracotomy. METS: >4 (n=29), MPS 7.4 days; <4 (n=16), MPS 11.1 days (r-0.31). 6MWT (mt): <400 (n=7), MPS 10.2 days; 400–500 (n=16), MPS 7.6 days; >500 (n=18), MPS 7.1 days (r-0.44). Direct VO2max (ml/kg/min): <10 (n=5), MPS 11.2 days; 10–15 (n=15), MPS 9.1 days; >15 (n=23), MPS 7.1 days (r-0.31). Estimated VO2max (ml/kg/min): <10 (n=11), MPS 9.4 days; 10–15 (n=18), MPS 7.5 days; >15 (n=4), MPS 5.2 days (r-0.50). LV-EF: <40% (n=4) MPS 7 days, >40% (n=34) MPS 12 days (wedge resections); <40% (n=1) MPS 16 days, >40% (n=13) MPS 15.9 days (typical resections).

Discussion: In our experience both 6MWT and VO2max were significantly correlated to MPS after thoracic surgery, whereas we did not find a significant relationship between LV-EF at rest and MPS. METS remains a valid but subjective test.

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New Technique for the Correction of Pectus Excavatum: Nuss Procedure

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Introduction: Pectus excavatum is a congenital deformity of the sternum which may cause compression of the thoracic structures and impaired cardio-respiratory function. Classic surgical techniques for the correction of pectus excavatum are all based on sternum remodelling by cartilaginous resection. We experienced the new MIRPE (Minimally Invasive Repair of Pectus Excavatum)

Methods: Two patients with "pectus excavatum" presented to our divisions: a 15-year-old boy with S-shaped scoliosis and dyspnoea and a 14-year-old girl. For both the patients we used the Nuss surgical procedure which consists in slipping in one or more concave steel bars into the chest, underneath the sternum, through two thoracostomic accesses. The bar is flipped to a convex position so as to push outward the sternum, correcting the deformity. As these were our first Nuss-technique cases, we decided to observe the patients for a longer period and to discharge them respectively in the 9th and 7th postoperative day. We planned for both the patients to remove the bar after three years.

Results: Main advantages of the Nuss technique are a good aesthetic result and an important reduction of the Haller index.

Discussion: In our experience, the Nuss MIRPE has been a good and effective method of pectus excavatum repair leading to a much shorter operating time, minimal blood loss and early return to full activity.

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Solitary Fibrous Tumor of the Pleura: Our Experience

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Introduction: Solitary fibrous tumors of the pleura (SFT), formerly named benign fibrous mesotheliomas, are very rare neoplasms (approximately 500 cases have been described in the literature).

Materials and Methods: 18 cases were studied and treated in our Institution from 1984 to 2007. They were 7 males and 11 females with a median age of 56 (range 33–77). All the patients underwent surgical treatments. Apart from 1 case with hemangiopericystic features (the largest one), all the cases were, histologically, the fibrous type of the pleural mesothelioma.

Results: Resections were radical and no recurrence occurred. Peri-operative mortality rate was 0%. Prognosis is excellent and we have registered the follow up until now; survival rates at, respectively, 10-, 5- and 3-years are 86.7%, 75% and 66.7%; 1 patient died after 18 months (malignant type); 2 patients died of unrelated disease after 24 and 53 months respectively.

Discussion: SFTs are rare benign tumors of the pleura that can sometimes present malignant features. They don't usually produce recurrences but can grow locally if surgery is not radical. Surgery is the treatment of choice and chemo or radiotherapy have not at present been indicated.

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Autofluorescence Bronchoscopy in Patients with Lung Cancer

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Introduction: This study aims to asses the role of autofluorescence bronchoscopy (AFB) in patients candidates to and in follow-up after resection for lung cancer.

Methods: From May 2002 to October 2007 we performed a WLB-AFB (D-light/AF system, Storz, Germany) in 561 patients (455 men, 106 women), mean age 64 years (range 17–85 years), who were divided in two main groups: group A (266 patients at risk of lung cancer, 142 of which in follow-up after resection for lung cancer) and group B (295 patients with lung cancer candidates to surgical resection).

Results: 691 WLB-AFB (366 in group A, 325 in group B) and 212 biopsies of suspected areas were performed. In group A, on 231 WLB-AFB in 142 follow-up patients, we detected in 3 of them 5 areas of dysplasia and 2 of carcinoma in situ. In group B, in the evaluation of the endobronchial extension of the disease in patients with endoscopically visible neoplastic lesion, we observed a discordance between areas of lesion evident with WLB and with AFB in 48 cases, which was confirmed as positive in 31 of them at pathological examination.

Discussion: In our experience AFB has revealed to be a valid procedure both for the early diagnosis of lung cancer recurrence in patients in follow-up after resection and for the precise preoperative evaluation of the endobronchial extension of the disease in patients candidates to surgical resection.

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Results of Surgical Resection of Malignant Thymomas

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Introduction: The Authors report the analysis of their experience with patients submitted to surgical treatment for malignant thymoma, in order to evaluate survival related to histology, stage, myasthenic symptoms and completeness of surgical resection.

Methods: From 1985 to 2007 we operated on 170 patients (98 women, 72 men), mean age 47,5 years (range: 9–82 years), with thymic diseases. We performed 126 thymectomies (74%) and 44 diagnostic biopsies (26%).

Results: There was no operative mortality. Histological examination revealed malignant primary thymic tumor in 123 cases, 78 (63%) of which were thymomas. In the thymoma group (n=78, 46 women, 32 men; mean age 55,5 years, range: 16–82 years) mean follow-up was 119 months (range: 0–238 months). 5-year overall survival rate was 80%; 5-year survival rate by histological subtype was 91% for mixed, 89% for lymphocitic, 65% for epithelial, 67% for spindle-cell one; by stage, 91% in stage I, 81% in stage II, 55% in stage III; by presence or absence of myasthenic symptoms, 83% and 80%, respectively; in resected thymomas was 92% for R0, 79% for R1–2.

Discussion: Surgical resection is the gold standard for treatment of malignant thymomas; extended resections appear to be justified, as in our experience complete resection revealed to be the most important prognostic factor.

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Treatment of Pleural Empyema: Our 50-Year Experience

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Introduction: We report our 50-year experience in management of pleural empyema.

Methods: From 1958 to 2008 we evaluated and treated 1057 cases: most of them (553; 52,3%) were caused by pneumonia; 226 (21,4%) by direct infection; 52 (4,9%) were complication of pneumonectomy, 92 (8,7%) of lobectomy; various conditions were responsible in 134 (12,7%).

Results: In 210 (19,9%) simple pleural drainage and cleansing led to complete resolution. Chronic illness developed in 847 (80,1%): 707 underwent decortication, with complete resolution in 692, 7 required subsequent musculocutaneous flap closure, 8 died of sepsis; of the remaining 140, after drainage, 138 underwent thoracostomy, with subsequent muscular or musculocutaneous flap transposition and thoracoplasty in 115: complete resolution occurred in 105, a new empyema in 7, 3 died. In one patient right thoracotomy allowed to successfully repair a left broncho-pleural fistula; in another one a right broncho-pleural fistula was repaired transposing a double muscle-rib flap in the bronchial lumen and a rectus abdominis musculocutaneous flap in the pleural space.

Discussion: Early diagnosis and drainage of the pleural cavity are fundamental in the management. Empyemas sustained by persistent infection or broncho-pleural fistula require open drainage and successive thoracoplasty with muscular or musculocutaneous flap transposition.

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A Case of Permagna Hiatal Hernia

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Introduction: A recent case of permagna hiatal hernia in a 64 year-old patient, female, affected by multi-infarctual dementia is described.

Methods: The patient got to our attention in March 2008, with dyspnoea and CT evidence of massive hernia of abdominal visceral organs in the mediastinum and bilaterally in the thorax. Retroperitoneal organs, liver, spleen and diaphragm were extremely displaced downward in the abdomen.

We adopted a left thoracotomy with laparotomy to reduce organs in the abdominal cavity and performed the Toupet antireflux plastic technique. Moreover, the right pleural cavity was drained by a trans-mediastinal trocar going out the thorax through a left thoracostomy. During post-surgery course, a protracted haematic leak from right drainage was observed, with chest x-ray evidence of clots occupying the pleural cavity. We performed a right thoracotomy for bleeding control and pleural toilette.

Results: One week later we have assisted to a complete functional recover of gastrointestinal tract.

Discussion: The association of laparotomy and bilateral thoracotomy in such a very uncommon hiatal haernia probably is the only safe surgical approach.

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Video-Assisted Thoracoscopic Approach in Thoracic Trauma

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Objective: Chest cavity direct exploration allows an accurate evaluation of the injuries caused by trauma. Sometimes it allows a precious treatment of the lesions, containing complications thanks to less invasively.

Material and Methods: From May 1997 to June 2004, 1176 patinets underwent videoassisted thoracoscopy surgery (VATS) in our Unit, 291 performed VATS in emergency for thoracic trauma.

Results: We performed 285 diagnostic and therapeuric VATS and 6 diagnostic VATS. For these 6 patients we had thoracotomic conversion.

Conclusion: VATS performed in emergency is a valid approach in thoracic trauma. It can be used for a diagnostic purpose or as a theapeutic option versus thoracotomy.

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Lobectomies with Resection and Reconstruction of the Pulmonary Artery for NSCLC. Results in 41 Patients

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Introduction: Lobectomies with pulmonary artery resection and reconstruction (PARR) are seldom indicated for the treatment of centrally located lung cancer. The main indication is direct infiltration of the pulmonary artery (PA), by the primary tumor or by extracapsular metastatic nodes. The operative techniques are still not definitively codified.

Material and Methods: We report our experience from 2000 to 2008: 41 procedures have been performed (M:F=33:8; median age 63). 4 patients (pts) underwent to complete vascular sleeve resection; in the remaining we used different kind of resection and primary suture. In 31 pts (75,6%) PARR was carried out with a standard left upper lobectomy and in 10 pts (24,4%) with a bronchial sleeve lobectomy. The postoperative (p.o.) course has been smooth in 38 pts (92,7%).

Mortality was 4,9% (2 pts): 1 pt died for acute renal failure and pulmonary oedema, the other one for bronchovascular fistula. Pathological stage was: 6 pts stage IA, 15 pts IB, 9 pts IIA, 4pts IIB, 7pts IIIA. Oncologic results was related to the stage of lung cancer.

Discussion and Conclusion: Conservative techniques for the treatment of NSCLC may lead to the same oncologic results than pneumonectomy, but with better p.o quality of life.

The surgical risk of lobectomy with PARR is acceptable and lower than pneumonectomies; survival is conditioned by stage and – more specifically – by lymph node metastatic involvement.

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Successful Lung Resection in Single Lung Patient for Recurrence of Chest Wall Sarcoma

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Introduction: Single lung patients pose unique treatment problems and lung surgery is often contraindicated. In terms of intra and perioperative management, it is extremely difficult to perform a lung and eventually a chest wall resection.

We herein describe the outcome of resections of chest wall sarcoma involving lung after pneumonectomy performed for the same malignancy.

Methods: A 81 year-old woman, presented a voluminous right chest wall mass that was resected and diagnosed as leiomyosarcoma. One year later the patient presented a local recurrence and a second resection was performed.

Follow-up CT scan showed abnormal masses on the left lung (controlateral) suggesting metastases. The patient underwent a left pneumonectomy for metastases removal.

25 months later, because of a right chest wall and lung recurrence (remaining lung) a wedge and chest resection was performed. The hospital stay was 10 days complicated by an heavy wound infection healed in 2 months.

Discussion and Conclusions: Limited lung and chest wall resection on a single lung is a feasible procedure probably associated with acceptable morbidity and mortality. According to the recent literature long-term survival with a good quality of life can be achieved in such a kinds of patients.

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Lung Transplants: Role of Bronchoscopy

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Materials and Methods: This study involved 28 lung transplants carried out in two centres between January 2002 and May 2006: single lungs n=7 (25%), heart-lung n=12 (43%), sequential double lungs n=9 (32%). In the pre-operative phase, bronchoscopy made it possible to identify 6 cases of pulmonary infection and one case of a broncho-tracheal anatomical anomaly, in this latter case providing indications that proved fundamental as regards the implant technique to be adopted. At the time of the implant,

bronchial anastomosis control was always used for intubation and bronchoaspiration-BAL was employed for microbiological examination.

Results: In the peri-operative period, bronchoscopy made it possible to position 5 stents (18%): 4 bronchial stents (3 for stenoses and one due to a split suture) and one tracheal stent (stenosis). Bronchoscopy was an indispensable aid in diagnosing cases of rejection (n=2, 7%) and post-operative infection (n=8, 28%). The positioning of stents made it possible to achieve complete airways patency all of the treated cases with no recurrence of stenosis and a significant positive impact on survival.

Discussion: Bronchoscopy remains the diagnostic procedure of choice for monitoring transplanted patients, with a diagnostic accuracy of more than 80% in the early diagnosis of rejection and post-operative infections (BAL and TTB).

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Bronchogenic Cysts: Review of 30 Year Experience

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A few reports of major complications after surgery for bronchogenic cysts have been reported. The purpose of this study is to analyse the complicated and unusual cases of 30 consecutive bronchogenic cysts who underwent resection at our Institution from 1975 to 2005.

We described and analyzed separately 3 cases of mediastinal bronchogenic cysts carachterized with important surgical complications or very unusual pathological findings.

Surgery was performed through a thoracotomy in 25 patients and by VATS in 5 patients. Two patients experienced an iatrogenic injury of controlateral main bronchus during excision of mediastinal cyst; in one of these patients we observed late development of foreign body granuloma related to migration of cyanoacrilate, used to reinforce the suture of the bronchial tear, towards bronchial wall. In one patient, the histological examination of the resected specimen showed the presence of large cell anaplastic carcinoma arising from the wall of a mediastinal bronchogenic cyst.

Bronchogenic cysts should be excised without waiting until the cysts become symptomatic or infected leading to a more difficult surgery with its attendant complications. The small risk of developing a malignancy within a bronchogenic cyst also justified early intervention, at the time of diagnosis.

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Surgical Resection of Four Synchronous Primary Cervico-Thoracic Tumors in Patient with MEN Type 1

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Introduction: Probably the first world report of simultaneous surgical resection of four primary neoplasm in the same anatomical district and from the same access. The bigger one was a giant tumour of the anterior mediastinum, in the neck two parathyroid adenomas and the last one a small endobronchial tumour of the right lung.

Methods: The patient was a 44 years old man with an history of primary hyperparathyroidism. The surgical approach was by median sternotomy and collar incision, the mediastinal mass was excised first, second step was neck dissection with resection of two enlarged inferior parathyroid glands and then an anatomic segmentectomy of the superior segment of the right lower lobe to resect the small tumour at the origin of the segmental broncus. Intraoperative documentation of reduction of the parathyroid level was obtained.

Results: Final pathology reveals a completely resected typical carcinoid of the mediastinum and broncus and two parathyroid adenomas. The procedure was complicated by a transient recurrent laryngeal nerve paralysis managed conservatively. Bronchoscopic toilettes were required in the immediate post-operative period (3 days). The remainder of the patient's postoperative course was unremarkable and was discharged 12 days after the operation. In particular calcium and PTH levels were normal. 6 month follow-up was completly normal.

Discussion: We reported a singulair case of four synchronous primary tumors completely removed in the same time by the same surgical acces. Radical resection gives good results in terms of survival, endocrinologists point of view and quality of life.

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An Unusual Case of Pulmonary Mass

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A 72-years old man, who had undergone laparoscopic cholecystectomy 6 years ago, presented with haemoptysis. Bronchoscopy was negative. Thorax computed tomography (CT) scan demonstrated a mass in the right lower lobe, with irregular edges, and calcification inside, adjacent to the pleural and diaphragmatic surfaces; surrounding parenchyma had a ground glass appearance. The CT-PET detected a high-metabolism area in the postero-basal segment of the lower lobe, with parietal pleura thickenig and liver

infiltration across the diaphragm. CT-guided fine needle biopsy was non diagnostic.

Surgical exploration though right thoracotomy showed chronic pulmonary infiltrate (wedge resection) extensive pleural and diaphragmatic thickening.

A gallstone was found adjacent to the diaphragmatic surface of the lower lobe in proximity of a small defect , connecting the chest cavity with the subdiaphragmatic space, totally obliterated by fibrous tissue.

The patient was discharged from the hospital in 13th post-operative day.

Discussion: Supradiaphragmatic involvement is a rare, late, complication of laparoscopic cholecystectomy. A spilled gallstone may migrate into the chest following a subphrenic abscess.

In patients previously submitted to laparoscopic cholecystectomy with a right pleuro-pulmonary lesion and calcifications, the differential diagnosis should include a spilled gallstone.

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Preoperative Embolization in Surgical Management of Giant Thoracic Sarcomas

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Resection of giant thoracic sarcomas may be demanding due to problematic surgical exposure and possible rich vascularity. When the tumor is so large that a difficult or hazardous removal may be expected, piecemeal excision may be the only option available. In highly vascular sarcomas piecemeal resection entails significant risk of severe bleeding. Decrease in tumor's size can rarely be reached by induction chemio or radiotherapy for low response of sarcomas. We report our experience with 4 cases of giant, highly vascular thoracic sarcomas treated by preoperative embolization and followed, after 48hours by successful surgical excision. With such technique reduction in tumor's size was obtained, ranging from 20 to 30%; perilesional edema facilitated in all cases surgical dissection of the mass from the adjacent structures;piecemeal removal of the tumor was carried out in two patients with minimal blood loss. In one patient an oligosymptomatic microembolization to the left upper limb was observed with symptoms spontaneously subsiding within 48 hours. Preoperative embolization of giant thoracic sarcomas is useful to decrease perioperative blood loss and to facilitate surgery. In huge, highly vascular tumors, preoperative embolization may be essential in order to achieve total excision, especially if piecemeal removal could be required.

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Immunocytochemical Detection of Micrometastases in the Bone Marrow: Prognostic Impact on Early Stages Lung Cancer

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Objectives: To verify the prognostic impact of occult tumor cells in the bone marrow of stage I and II non-small cell lung cancer patients using cytokeratin as a micrometastatic markers.

Methods: 152 patients operated for stage I and II NSCLC, were entered into the study. Bone marrow from fragment of resected ribs, and primary tumors were stained by anti-cytokeratin 18 antibody. 14 bone marrow specimens from patients without malignancy were used as control group. Cancer recurrence was the study end point.

Results: All primary tumors were positive to cytokeratin; occult tumor cells were detected in 38 bone marrow specimens (25%. The prevalence of the occult tumor cells was not related to age, gender, tumor stage, histological differentiation or grade. The mean follow-up time was 35.3 months; 68 patients developed recurrence; the mean time for recurrence was 21.2 months. The disease-free interval was not related to occult tumor cells in the bone marrow. This result didn't change grouping the patients by tumor stage. The stage was the best predictor of cancer recurrence, Cox proportional hazard: 2.09 ($p = 0.0026$).

Conclusions: Our study confirmed that immunocytochemical analysis detects micrometastases in the bone marrow of at least 25% of patients surgically treated for I and II stage NSCLC. These occult tumor cells haven't any impact on disease-free interval.

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Preventive and Preemptive Analgesia in Thoracic Surgery: Preliminary Results

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The aims of this randomized and double blind study were to investigate the effects of intercostal nerve block and NMDA-antagonists, as preemptive and preventive analgesia in thoracic surgery. 53 consecutive patients undergoing posterolateral thoracothomy were randomized to receive one of the following analgesic regimens: preoperative intercostal nerve blocks from T2 to T10 with bupivacaine and oral dextromethorphan (A) or placebo (B), nerve blocks at the end of surgery and preoperative oral dextromethorphan (C) or placebo (D). Visual analogue pain scores and analgesic consumption were assessed for 3 months during the postoperative period. 28 male and 25 female patients were included in the study. The four groups were comparable with respect to age, surgical procedure and preoperative respira-

tory function. During the first hours after operation there were lower pain scores in groups C and D. While pain and analgesic consumption of groups A and B is lower during all postoperative period. Particularly, group D showed higher pain scores until hospital discharge. No advantage results from dextromethorphan before and after operation. Preemptive analgesia with bupivacaine intercostal block prior to surgery appeared to reduce the severity of acute postthoracotomy pain. Preventive analgesia with dextromethorphan showed a positive trend on postoperative pain.

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Omentoplasty and Thoracoplasty for Left Main Bronchus Fistula after Pneumonectomy and Aortic Arch Substitution. Case Report

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Bronchopleural fistula is a critical complication after general thoracic surgery. We report a case of a 39-year-old man affected by empyema and a large left main bronchus fistula after pneumonectomy required for bleeding during aortic arch substitution. We initially treated the patient with unsuccessful endobronchial appositions of biological glue and submucosal injection of sclerosant drugs. Because of the failure of these procedures we decided to manage the condition of the patient with surgical approach. The omentum was prepared and mobilized after a laparotomy and the pedicled omental flap was transposed into the left pleural cavity through the diaphragm after a posterolateral thoracotomy. The flap was fixed on the dehiscent bronchial stump with a suture and with apposition of surgical glue. After the omentoplasty we performed a toracoplasty with resection of the lateral tract of the 3°, 4°, 5°, 6°, 7°, and 8° ribs and collapse of chest wall including the parietal pleura, the intercostal pedicled muscles and the latissimus dorsi, for a complete obliteration of pleural cavity. In this way we treated the bronchial fistula with the omentoplasty and the empyema with the thoracoplasty. Postoperative course was positive, without major complications. The CT-scan at 1 year after the operation revealed a complete obliteration of residual pleural space.

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Giant Solitary Fibrous Tumor of the Pleura: a Case Report

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We report the case of a solitary fibrous tumor of the pleura in a 56 year old non-smoker woman, who presented with dry cough, unresponsive to common medical therapy. Her past medical history consisted in resection of a solitary fibrous tumor of the pleura sixteen years ago. Chest CT showed the presence of the mass and MR study demonstrated it to be made of five well-defined rounded lesions originating from both the parietal and visceral pleura, compressing right inferior lobe. A transthoracic TruCut needle biopsy of the mass was consistent with the diagnosis of solitary fibrous tumour of the pleura. The angiographic study revealed vascolarization of the mass arising from two pathologic intercostal arteries, which were embolyzed. At surgery the right inferior lobe was entrapped by the mass while upper lobes appeared compressed by multiple rounded encapsulated lesions originating from both parietal and visceral pleura. En bloc excision of the tumour with the involved lung with mediastinal lymphadenectomy were performed . At definitive histological examination the mass was made of dense whorled fibrous tissue and the diagnosis of solitary fibrous tumour of the pleura invading pleura and lung parenchyma was confirmed by immunohistochemistry. The postoperative course was uneventful and no signs of tumour recurrence have been demonstrated after 10 months from surgery.

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Transbronchial Needle Aspiration Under Direct Endobronchial Ultrasound Guidance of Pet Positive Isolated Mediastinal Adenopathy in Patients with Previous Malignancy

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The diagnostic accuracy of endobronchial ultrasound (EUS) guided transbronchial needle aspiration (TBNA) for the diagnosis of isolated mediastinal lymphadenopathy in patients with previous malignancy is not well defined. The purpose of this prospective and controlled study was to assess the yield of endobronchial ultrasound guided transbronchial needle aspiration to reveal mediastinal lymph node metastases. 21 lymph nodes were tested by transbronchial needle aspiration on 16 consecutive patients, each patient underwent to mediastinoscopy or thoracoscopy immediately after the needle aspiration for histological confirmation. A cytological sampling adequate for diagnosis was obtained in 14 patients (87.5%), the two cases of inadequate sampling resulted as negative for cancer. The EUS guided TBNA gives a sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of 88.9%, 100%, 100%, 83.3%, and 92.8% respectively. The disease prevalence was 64.2%. All the endoscopic procedures were well tolerated and no immediate complications were recorded. The TBNA under EUS guidance is a valuable technique for cytological diagnosis of isolated mediastinal lymphadenopathy in patients with history of malignancy. Tissue sampling by invasive surgical procedures remains mandatory in case of non adequate or negative transbronchial needle aspiration cytology.

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Pseudosequestration of the Right Upper Lobe Treated Without Surgery

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Pseudosequestration of the lung is a rare malformation that occur with systemic pulmonary arterialization without sequestration localized at lower lobes. Artery ligature is considered the standard treatment We present an unusual case of asymptomatic pulmonary pseudosequestration of right upper lobe treated by embolization. A non-smoker 46-year-old Chilean male presented a chronic cough, unresponsive to any therapeutic interventions. The chest x-ray, the pulmonary function tests and the bronchoscopy were normal. Particularly, the tracheobronchial tree was regular in size, configuration and position. Spiral CT showed a large anomalous artery arising from the lower thoracic aorta and supplying posterior segment of the right upper lobe. The drainage was in the left atrium. There were no bronchial or parenchymal abnormalities. At echocardiography, normal pulmonary artery pressures were estimated and there was no evidence of a left to right shunt. During selective angiography of the aberrant artery, a mild haemoptysis occurred. Suddenly, the embolization was carried out with ten spiracles. The bleeding stopped and after 5 minutes and there was no detectable flow in the embolized vessel. There were no postembolization major complications, but fever for two days. Six months later, the cough was absent and the chest CT demonstrated a total occlusion of the aberrant systemic artery.

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Predictors of Early and Long Term Outcome after Pneumonectomy

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Introduction: Despite of increased number of parenchymal-sparing thoracic procedures, pneumonectomy still remains a valid surgical option for the treatment of lung cancer. We reviewed our series of pneumonectomies analyzing the potential predictors of early and long term outcome.

Methods: This is a retrospective study of 207 patients (157 male and 50 female) underwent pneumonectomy for lung cancer. We collected demographic characteristics, preoperative functional status, postoperative complications and outcome. Univariate analysis, Kaplan-Meyer survival, and Cox regression were performed.

Results: Mean age was 58±10.5 years. We performed 121 left and 86 right pneumonectomies. We observed 51 (24.6%) postoperative complications (mostly, broncho-pleural fistula, empyema and cardiacs). Perioperative mortality rate was 5.3% (11 patients). Overall survival was 85±3%, 44±4%, 22±3% at 1, 3 and 5 years, respectively. Univariate and multivariate analysis showed that advanced stage and extended operation were independent predictors of a poor long term outcome.

Conclusions: Pneumonectomy continues to be a valid choice for the thoracic surgeons. Patients with advanced stage or who must undergone extended procedures seem to have a poor outcome.

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Airway Disobliteration by Rigid Bronchoscopy (Results in Over 1000 Treated Patients)

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Introduction: From 1991 to 2007 , 1002 endoscopic mechanical or laser Nd:YAG recanalizations were done in 715 patients with neoplastic or infiammatory stenosis. In particular after recanalization various types of endoprostheses were positioned in 273 patients.

Results: As to endoscopic palliation results were optimal in more than 90% of cases (complete recanalization/stenting), inadequate in less than 10% of cases.

Perioperative mortality was 0,09% (1 case); Major complications were 1% while minor complications 2,6%.

Surgical resection was carried out after endoscopic recanalization, immediately or delayed, in 75 patients (41 cases of neoplastic and 34 cases of inflammatory stenosis).

Conclusion: Endoscopic recanalization end/or tracheobronchial stenting are effective techniques with a low incidence of complications. These procedures allow satisfactory palliation and prepare patients for possible surgical resection. Every single case needs thourough evaluation in order to avoid undue application of such techniques when surgery alone could be the appropriate solution.

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