Letter to the Editor

Central nervous system and osteodural multiple myeloma

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I read with interest the case report of Xu and colleagues (1), in which they described a 53-year-old male patient admitted to the Neurosurgery Department for visual impairment and a intracranial (IC) right temporal mass that revealed to be a plasmacytoma. In particular, cranial magnetic resonance imaging showed a 3.5 cm × 2.1 cm right temporal bone tumor. The patient underwent endoscope- assisted surgery from the skull base. Postoperative pathology revealed no brain malignancy and a diagnosis of plasmacytoma was made. Blood and marrow workup revealed a multiple myeloma (MM) immunoglobulin G (Ig) lambda with a multiple bone localizations and cranial involvement. Patient responded well to ixazomib, lenalidomide and dexamethasone and radiotherapy (RT). Authors stated a central nervous system (CNS) involvement, but it seems probably a para-osseous mass involving the temporal bone. I would like to report our experience (not cited by the authors) (2) to underline the importance that the different localization of CNS or para-osseous myeloma can make on therapy and prognosis. We have been interested in studying cranial myeloma for several years (3-5) and collected cases from hematological Institutions in Italy from 2000 until 2010. IC involvement in MM is uncommon and often it arises from a bone mass in the skull base or dural involvement, i.e., osteodural (OD) (5). CNS MM is characterized by intra-parenchymal lesions or CNS diffusion that consists with the detection of myeloma cells in the cerebrospinal fluid (2). Prognosis is usually poor in these patients, however in our national trial we showed that novel drugs (such as first and second-generation proteasome inhibitors and immunomodulatory drugs) (6) associated with RT and autologous stem cell transplantation (ASCT) can ameliorate responses and ultimately progression free and overall survivals (PFS, OS). In fact, OD myeloma seem to behave differently from true CNS MM because it can respond as well as the usual myeloma.

Briefly, we described 50 patients and differentiate 38 OD localizations and 12 CNS localizations: median survivals were 25 months for OD and 12 months for CNS myeloma patients. Better prognosis was seen in those patients treated with ASCT and bortezomib or lenalidomide. Achieving a complete response (CR) or very good partial response (VGPR) was predictive of survival in all IC [CR + VGPR *vs.* partial response (PR) + no response (NR), not reached *vs.* 12 months, respectively, P=0.004]. This was confirmed in both CNS and OD MM (not reached *vs.* 5 months, P=0.008; not reached *vs.* 20 months, P=0.03, respectively). When we compared ASCT *vs.* chemotherapy in IC and OD this was not significant because of a low number of patients analysed but a trend for better survival was seen (P=0.03). Patients receiving RT *vs.* no RT did not have benefit (P=0.6), while a benefit was observed in MM patients treated with novel drugs + RT *vs.* other therapies (P=0.001). Age >65 years was not predictive for survival, but β2-microglobulin >5.5 was a poorly associated with survival (P=0.002). IC MM had a better PFS when B_2 microglobulin was <5.5 (P=0.004)

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and when novel agents *vs.* chemotherapy were compared (P=0.02). Also when RT was associated with novel agents and compared with chemotherapy treated patients (P=0.02).

We recently define real-life practical guidelines (7) to help decision making and awareness of CNS myeloma. When a patient with a cranial mass enters our hospital, MM should be searched for a differential diagnosis. It is mandatory to assess all the diagnostic features to look for a monoclonal component in the serum and urine such as: serum and urine total protein and electrophoresis, serum and urine immunofixation. Some drugs can reduce the bulk of disease and patient could ultimately benefit from high dose therapy and RT. In conclusion, we need to differentiate between CNS and OD myeloma, to collect and describe cases with IC myeloma from clinical and biological point of view and as shown by Xu and colleagues, teamwork (neurosurgery, hematology, RT) is fundamental for success in treating these patients.

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Footnote

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Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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