

Non-invasive Imaging Techniques for the Diagnosis of Clear Cell Acanthomas: Dermoscopy, Reflectance Confocal Microscopy and Line-Field Confocal Optical Coherence Tomography

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Dear Editor,

Clear cell acanthoma (CCA) is a benign tumor with variable clinical morphology that is usually recognized by its histopathological features [1]. The primary lesion is a red papule, in general well-demarcated, shiny erythematous- to brown-colored, and flattened with minimal scaling [2]. On polarized dermoscopy, there are multiple coiled vessels in a serpiginous arrangement, as well as curved polarizing-specific white lines that are parallel to the serpiginous arrangement of said vessels. The white lines are not present on non-polarized dermoscopy [3]. Glomerular blood vessels and red clods in a reticular and curvilinear pattern, resembling a pearl necklace, with combined thin and thick white intersecting lines are typical clues for the diagnosis. The primary clinical and pathological differential diagnoses that must be considered include eccrine poroma, basal cell carcinoma, squamous cell carcinoma, amelanotic melanoma, pyogenic granuloma,

lichenoid keratosis, inflamed seborrheic keratosis, and psoriasis [4]. For that reason, noninvasive imaging techniques are useful for a better evaluation to avoid excisional biopsy for histopathological examination. Reflectance confocal microscopy (RCM) at the spinous layer level shows a well-defined papular lesion edged by a highly refractile collarette structure and, at the dermal-epidermal junction level shows the tips of the dermal papillae as large, dark, irregular space. Blood vessels are seen as convoluted, black luminal or tubular structures located at the level of the papillary dermis and filled by variably reflecting moving cells [5]. RCM was successfully used to have differential diagnoses between CCAs and neoplastic or infective diseases but there are no reports in the literature that describe line-field confocal optical coherence tomography (LC-OCT) images of clear cell acanthomas [6]. In this paper, we describe a series of seven CCAs studied with dermoscopy, RCM and LC-OCT. The clinical presentation was very typical: a pinkish roundish papule (Figure 1A)

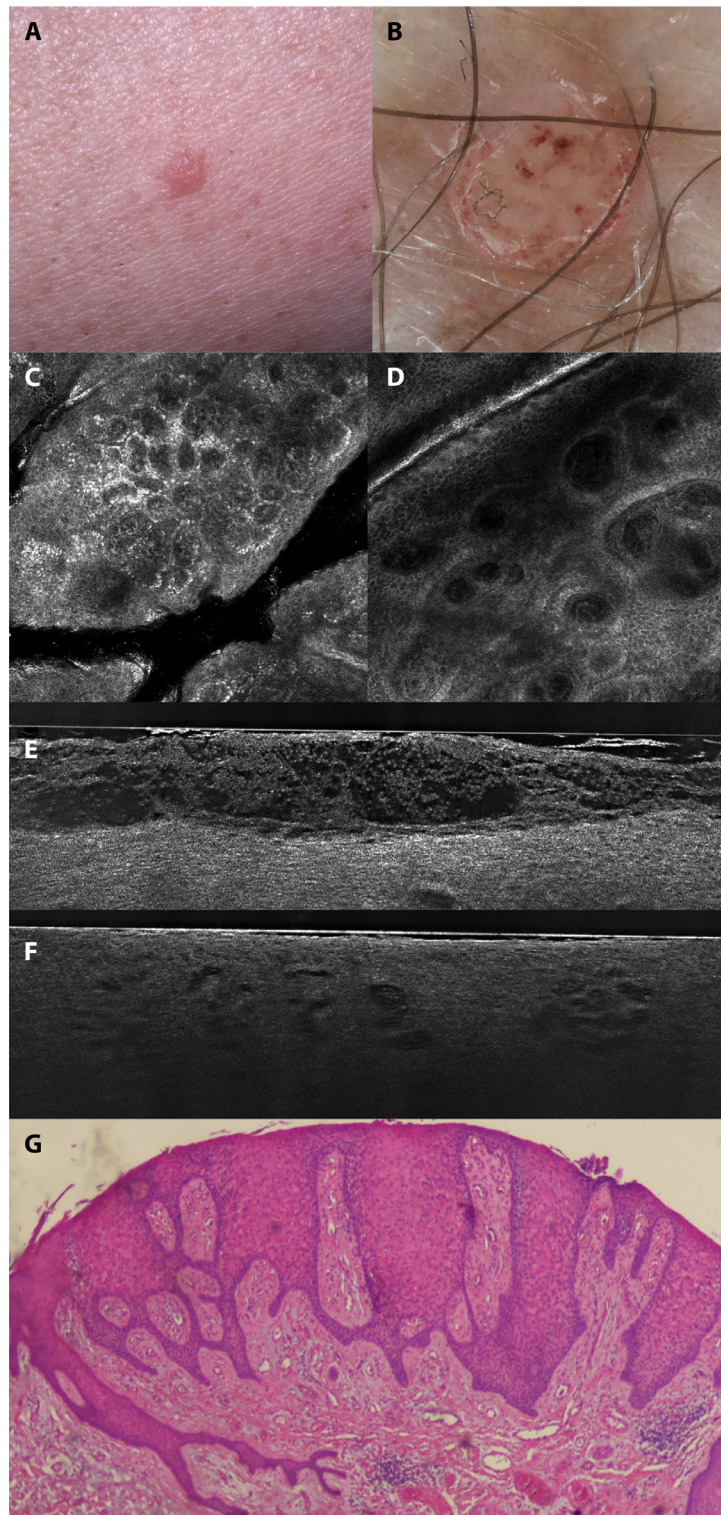


Figure 1. (A) Clinical, (B) Dermoscopic, (C, D) Reflectance confocal microscopy (E, F), Line-field confocal optical coherence tomography, and (G) Histological examination (H&E, 20x) images of clear cell acanthoma.

with, in dermoscopy (Figure 1B), multiple coiled vessels in a serpiginous arrangement, resembling a pearl necklace. RCM images were comparable with what was described in the literature: convoluted structures located at the level of the papillary dermis, filled and surrounded by variably reflecting moving cells (Figure 1, C and D). LC-OCT exam showed, in the epidermis (Figure 1E) enlarged keratinocytes,

compact acanthosis that is sharply demarcated from the surrounding epidermis, papillomatosis of varying degrees, focal parakeratosis and, in the dermis (Figure 1F) dilated vessels and a polymorphous cellular infiltrate. All these images well correlated to the histopathological examination (H&E stain) (Figure 1G), allowing us to associate the lesions with a clear cell acanthoma. In conclusion, our preliminary results find

that most of the histological features of CCA can be visualized on LC-OCT. Our findings suggest that LC-OCT may be useful for the non-invasive diagnosis of CCA, permitting it to be distinguished from other neoplastic or infectious diseases [7,8]. LC-OCT may help decrease the need for surgical excision to confirm the diagnosis of benign tumors, that can be removed with less invasive surgical techniques. However, further studies with a larger number of cases are necessary to demonstrate the diagnostic utility of LC-OCT in the clinical setting.

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