

Line-field Confocal Optical Coherence Tomography Features of Merkel Cell Carcinoma

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Case Presentation

A 74-year-old male presented with a 1 cm rapidly growing red ulcerated nodule located on the right upper eyelid (Figure 1A). Dermoscopy showed arboriform and linear vessels and structureless pinkish-white areas (Figure 1B). Based on clinical and dermoscopic criteria, the differential diagnoses included basal cell carcinoma (BCC), amelanotic melanoma, and Merkel cell carcinoma (MCC). Line-field confocal optical coherence tomography (LC-OCT) examination displayed a flattened dermal-epidermal junction due to the nodular dermal proliferation of hyporeflexive nests separated by hyperreflective collagen septa with some bright round cells, better highlighted in the horizontal image (Figures 1C and D). In addition, basaloid lobules with millefeuille pattern, indicating BCC, or nests of atypical melanocytes were absent. Hence, the

dermal proliferation of hyporeflexive nests and bright round cells at LC-OCT, as previously described by Soglia et al. [1], raised the suspicion of MCC, which was later confirmed by the histopathological examination (Figure 1E).

Teaching Point

MCC is an aggressive neuroendocrine tumor with often unspecific clinical and dermoscopic features [2] that is histopathologically characterized by dermal nodules with cells clustered in sheets or nests (Figure 1E). LC-OCT, through its high resolution and penetration, may be a valid additional tool in the diagnosis of MCC [1]. LC-OCT's non-invasive, real-time, near-histologic resolution allows visualization of dermal proliferation of hyporeflexive nests and bright cells as well as peri-nodular black silhouettes

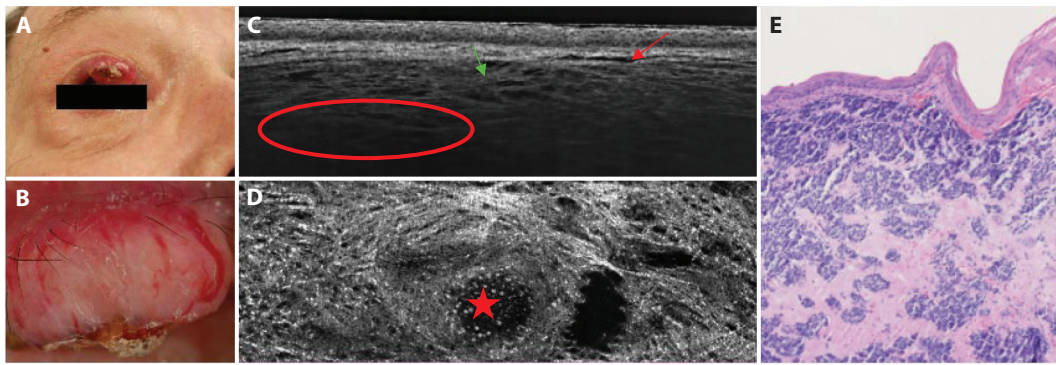


Figure 1. Clinical, dermoscopic, vertical, and horizontal LC-OCT and histopathological appearance of Merkel cell carcinoma of the right upper eyelid in a 74-year-old male. Clinical appearance of a nodular lesion localized on the right upper eyelid (A). Dermoscopy revealed the presence of arboriform and linear vessels and structureless pinkish-white areas (B). Vertical LC-OCT showed a flattened dermal-epidermal junction due to dermal nodular proliferation with perinodular vessels (red arrows). The dermis presented hyporeflective nests (red circle) separated by collagenous septa (green arrow) and bright round cells (C), prominent in the horizontal image (red star) (D). Histopathological examination showed dermal proliferation of layers and nests of small homogeneous cells, somewhat discrete, interspaced by connective septa (H&E staining, 100x) (E).

corresponding to extensive neoangiogenesis due to rapid tumor growth displayed by dermoscopy as arboriform and linear vessels.

References

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