

Research Letter

Dermoscopy and LC-OCT in the Evaluation and Management of Solitary Trichoepithelioma: A Diagnostic–Therapeutic Flowchart

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Introduction

Trichoepithelioma (TE) is a rare benign skin tumor originating from hair follicles [1]. It typically manifests as either solitary lesions or multiple nodules on the face. In some cases, a hereditary predisposition may lead to the development of multiple lesions, as observed in Brooke-Spiegler syndrome. Importantly, TE presents a significant challenge in differential diagnosis compared to basal cell carcinoma (BCC), both clinically and dermoscopically [2]. Beyond dermoscopy, other non-invasive diagnostic techniques, such as reflectance confocal microscopy (RCM) and line-field optical coherence tomography (LC-OCT), can also support preoperative diagnosis.

Case Presentation

We report a case of TE clinically and dermoscopically mimicking BCC, further characterized with LC-OCT, which revealed hypo-reflective roundish lobules, clefting, and highly hypo-reflective areas corresponding to dilated vessels, in close correlation with histopathology (Figure 1). LC-OCT findings partly resemble those of BCC but also differ, particularly in the absence of a hyper-reflective stroma and the bright rims. In this case, LC-OCT alone was not decisive for the preoperative diagnosis, as the lesion remained a true BCC imitator. To provide practical guidance, we propose a diagnostic–therapeutic approach for solitary trichoepitheliomas based on dermoscopic features and non-invasive imaging, according to a previous study that classified TE as “easy-to-diagnose,” “intermediate-to-diagnose,” or “difficult-to-diagnose” on dermoscopy (Figure 2) [3]. When a patient presents with a suspicious lesion, diagnosis begins with thorough clinical and dermoscopic evaluation, considering also the lesion’s location. The flowchart incorporates dermoscopic patterns such as white ivory background color, small unfocused vessels, gray–purple structureless pigmentation, superficial fine telangiectasia, arborizing vessels, and pigmented structures, alongside the body site (face vs. other locations). "Easy" TE is suggested by a white ivory background, small unfocused vessels, gray–purple pigmentation, and superficial telangiectasia, particularly when facial. "Intermediate" TE shows similar dermoscopic features but occurs on any site or with arborizing vessels. "Difficult" TE lacks specific patterns and mimics BCC, showing arborizing vessels and pigmented structures. Management depends on the diagnostic category. For "Easy" TE, where cosmetic outcome is a priority, surgical excision may be avoided in sensitive areas. "Intermediate" TE requires careful differential diagnosis; treatment may mirror "Easy" TE but include excision if malignancy risk is higher. For "Difficult" TE, surgical excision with histopathological confirmation is essential; Mohs micrographic surgery may be indicated for centofacial lesions, especially in variants with deep dermal or subdermal infiltration.

Conclusion

The flowchart presented here provides a practical approach to evaluating suspicious lesions for TE. The overlapping dermoscopic features between TE and BCC, together with the relative rarity of TE compared to BCC, can mislead even experienced clinicians. While dermoscopy is a valuable tool for differentiation, histologic confirmation is often required. The integration of non-invasive diagnostic techniques such as RCM and LC-OCT could further enhance preoperative accuracy [4, 5], potentially enabling more conservative management—particularly relevant given the frequent occurrence of TE in cosmetically sensitive areas. However, larger studies are still needed to define specific criteria to reliably distinguish TE from BCC, a distinction that remains challenging without histological assessment.

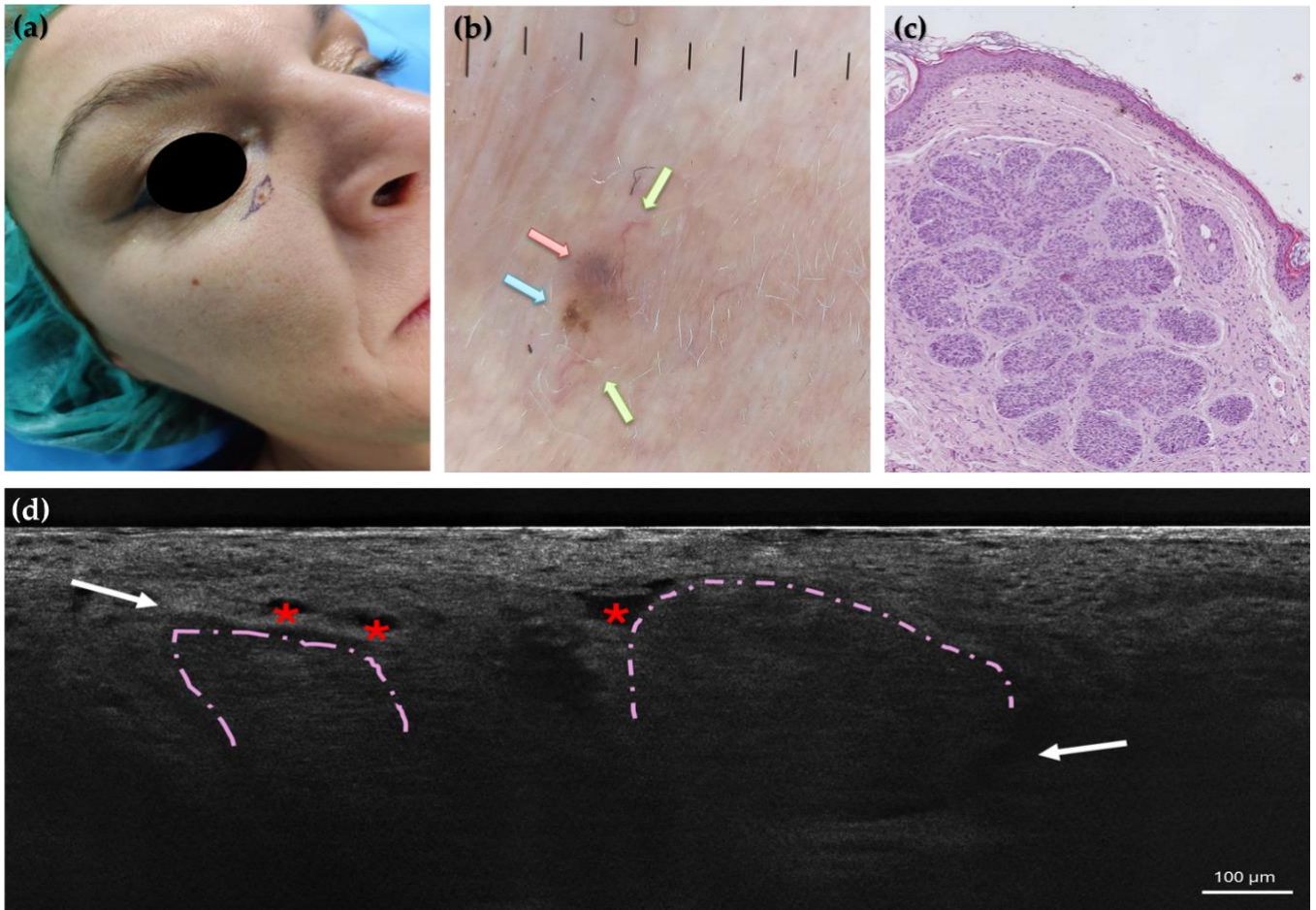


Figure 1. (A) A 54-year-old woman with no personal or family history of cutaneous neoplasms presented with a translucent, dome-shaped, pigmented papule in the right nasojugal sulcus. She had previously been evaluated at another dermatology unit, where a clinical diagnosis of BCC was suggested. (B) Dermoscopy under polarized light showing thin, in-focus vessels (green arrow), blue-gray nests (red arrow), and pigmented structures (blue arrows). (C) LC-OCT image of the lesion, with dashed violet lines outlining hypo-reflective lobules corresponding to tumor nests on histology. White arrows indicate clefting, and red asterisks mark vascular structures. Bright rims and hyper-reflective stroma are absent. (D) The patient underwent excisional biopsy. Histopathological examination revealed a well-circumscribed, non-ulcerated tumor in the superficial dermis, without connection to the overlying epidermis, composed of uniform basaloid cells arranged in epithelial aggregates within a fibrocystic stroma. No nuclear pleomorphism, necrosis, or atypical mitoses were observed, consistent with trichoepithelioma (Hematoxylin and Eosin; 10 \times).

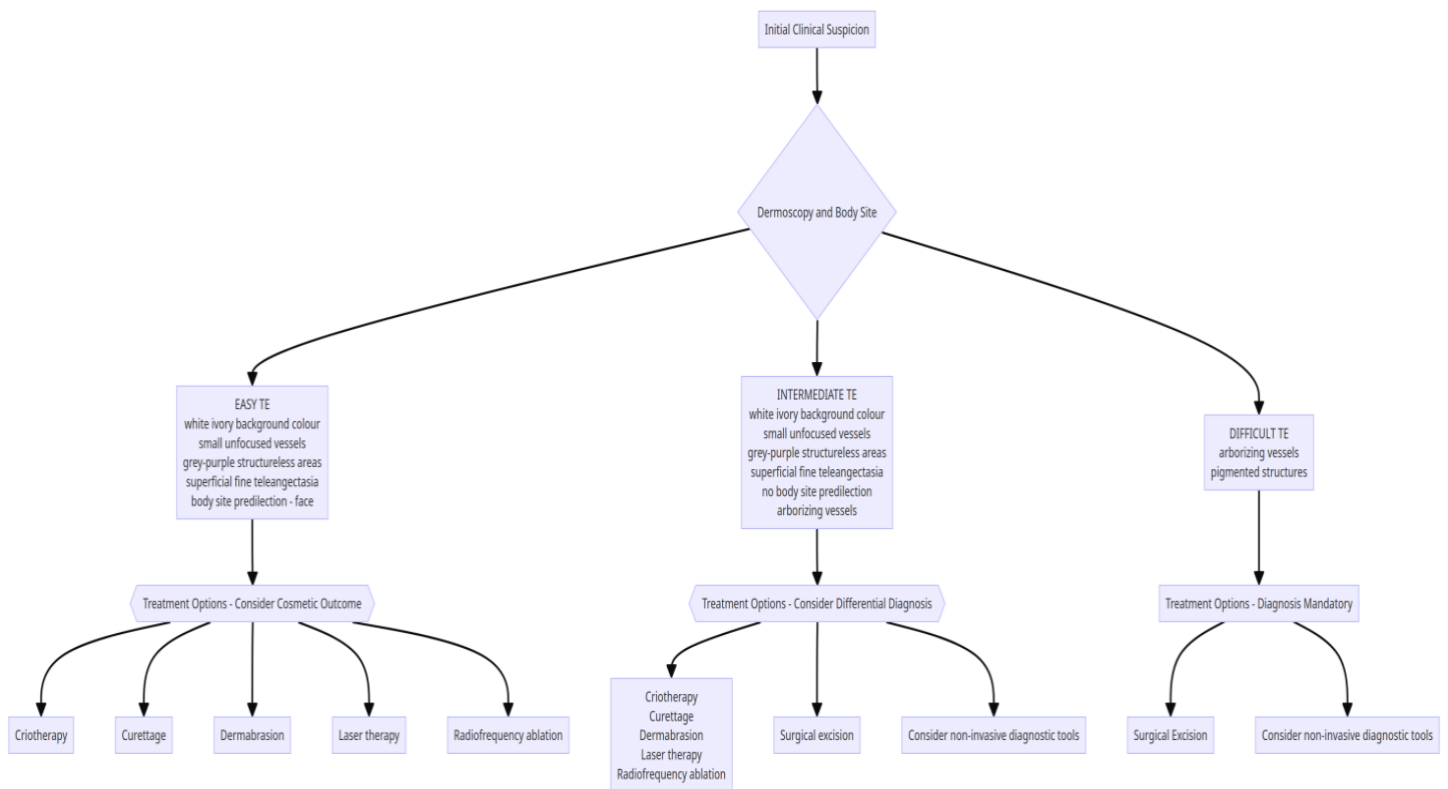


Figure 2. The flowchart presents a potential diagnostic-therapeutic approach for lesions suspected to be trichoepitheliomas (TE), based on dermoscopic evaluation.

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