

Case report demonstrating pitfalls of dermoscopy, OCT & AI, highlighting the importance of LC-OCT



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I. Introduction & Objectives

- Instructive case report from our clinic
- Showing the limitations of dermoscopy, optical coherence tomography (OCT) and AI (artificial intelligence) and highlighting the need of line-field confocal-(LC)-OCT as a complementary imaging modality

II. Materials & Methods

- 85-year-old patient from our surgical outpatient clinic
- Suspicious skin lesion (2x2.5cm) on the right upper arm had been present for about 15 years
- Patient had not noticed any change
- Further assessment of the lesion with dermoscopy, OCT and LC-OCT (with AI) and histopathology

III. Results

Clinic

Lesion divided into two parts: one part brownish & flat; other part reddish & partly palpable

→ Suspicious of a collision of lentigo solaris and basal cell carcinoma (BCC)

Dermoscopy

- Brownish part: black peppering, a reticular network with peripheral breaks and poorly identifiable follicular structures
- Reddish part: milium and short arborizing vessels

OCT

- Brownish part: dark melanocytic mass
- Reddish part: blurred nodular structure in most OCT scans; some scans with definable nodules with mostly low-echoic content and clefting, mimicking a BCC

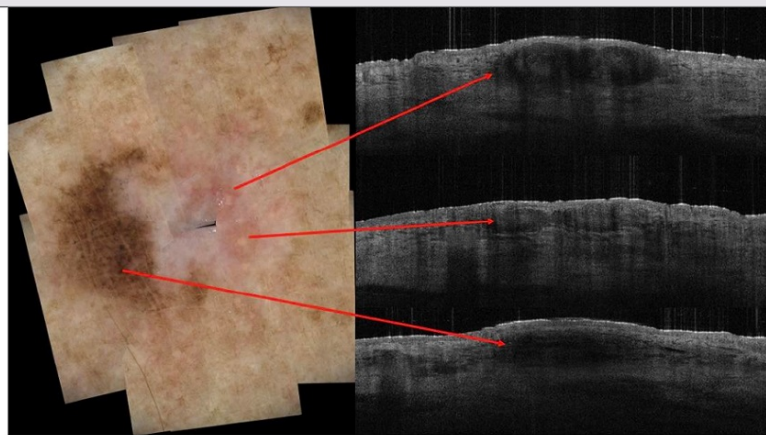


Figure 1: Dermoscopy and OCT of the lesion

LC-OCT

- Brownish part: rete ridges surrounding adnexal opening with well-demarcated dermoepidermal junction (DEJ); focally aggregated bright, triangular, non-nucleated cells, corresponding to melanophages in dermis along with bright stellate spots correlating with lymphocytes and disrupted DEJ; sharply defined papillae with chaotic features and loss of edged papillae
- Reddish part: nests of atypical melanocytic cells; only a few dendritic, light-coloured cells

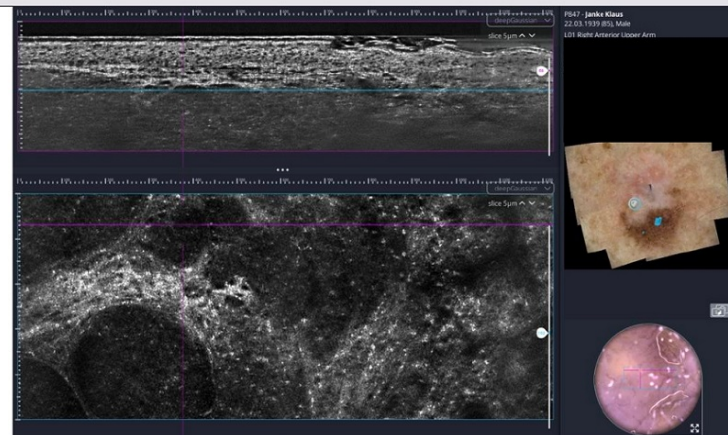


Figure 2: LC-OCT with nests of atypical melanocytic cells

→ AI diagnosed it as a BCC with 100% probability

→ Histology: secondary nodular lentigo maligna melanoma, tumour thickness 0.5 mm

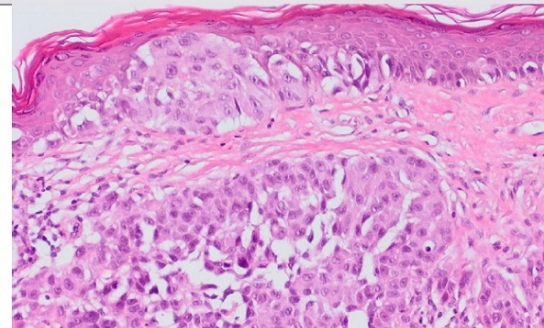


Figure 3: Histology

IV. Conclusions

- When evaluating a clinically unclear skin tumour, all available imaging modalities should be used.
- The entire lesion must be thoroughly examined, as different patterns may exist within a lesion, and only a comprehensive evaluation can provide the full picture.
- Do not rely solely on AI and if uncertainty persists, perform a biopsy or excision.