Dermatology Practical & Conceptual

Sub-Ultraviolet Reflectance and Ultraviolet-induced Fluorescence Dermatoscopy in Action: Shedding Light on a Case of Balloon Cell Melanoma

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Introduction

Balloon cell melanoma (BCM) is a rare entity, with about one hundred cases reported in the literature [1] and less than ten dermatoscopic reports [2]. Its distinctive morphology may result from defective melanogenesis and subsequent vacuolar degeneration of the melanocytes. Sub-ultraviolet reflectance dermatoscopy (sUVRD, e.g., Casio DZ-100) and ultraviolet-induced fluorescence dermatoscopy (UVFD, e.g., Dermlite DL5) are two emerging dermatoscopic techniques [3]. Here we report a BCM captured with conventional dermatoscopy, sUVRD and UVFD.

Case Presentation

A standing out pigmented lesion was noted in a routine skin check in 62-year-old male with familial neurofibromatosis type 1 (Figure 1A). Polarized dermatoscopy showed a suspected melanoma with chaos of colors, structures, and border abruptness featuring multicomponent pattern (structureless + lines reticular + clods) and gray structures (Figure 1B). Over a peripheral tan background, multiple aggregated polarizing-independent yellow-white clods were present, suggestive of collision with a sebaceous nevus or a BCC (Figure 2A). The structures were neither enhanced with

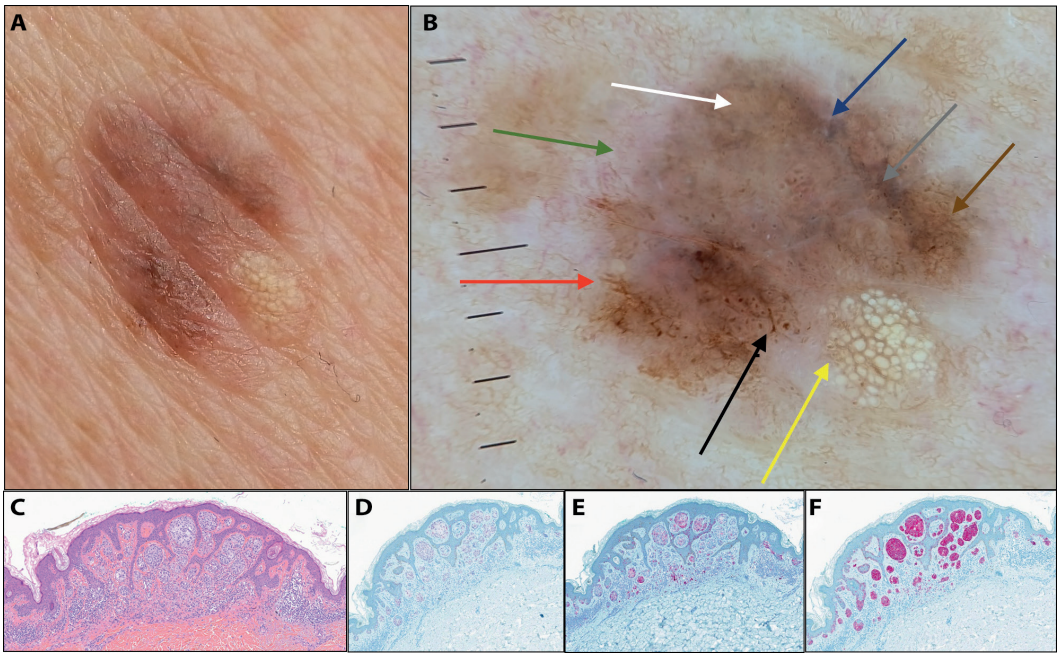

Figure 1. A) Compound nevus-associated balloon cell melanoma. Clinical presentation as a macule at the right scapula; B) Polarized dermatoscopy: brown lines reticular, peripheral (brown arrow), clods (black arrow), radial lines, segmental (red arrow), brown structureless area (white arrow), blue-gray structureless area (blue arrow), gray dots (gray arrow), depigmented area, peripheral (green arrow), yellow-white clods (yellow arrow); C) Pathology reveals a dermal-predominant compound nevus with a congenital-like pattern left aspect of the specimen, and large dermal nests of ballooned melanocytes with a focal junctional component on the right aspect, accompanied by dense lymphocytic infiltrate (H+E routine stain); D) Heterogeneous expression of PRAME in the nested area; E) Decreased expression of p16 in the nested area; F) Contrasting MelanA expression between the two areas.

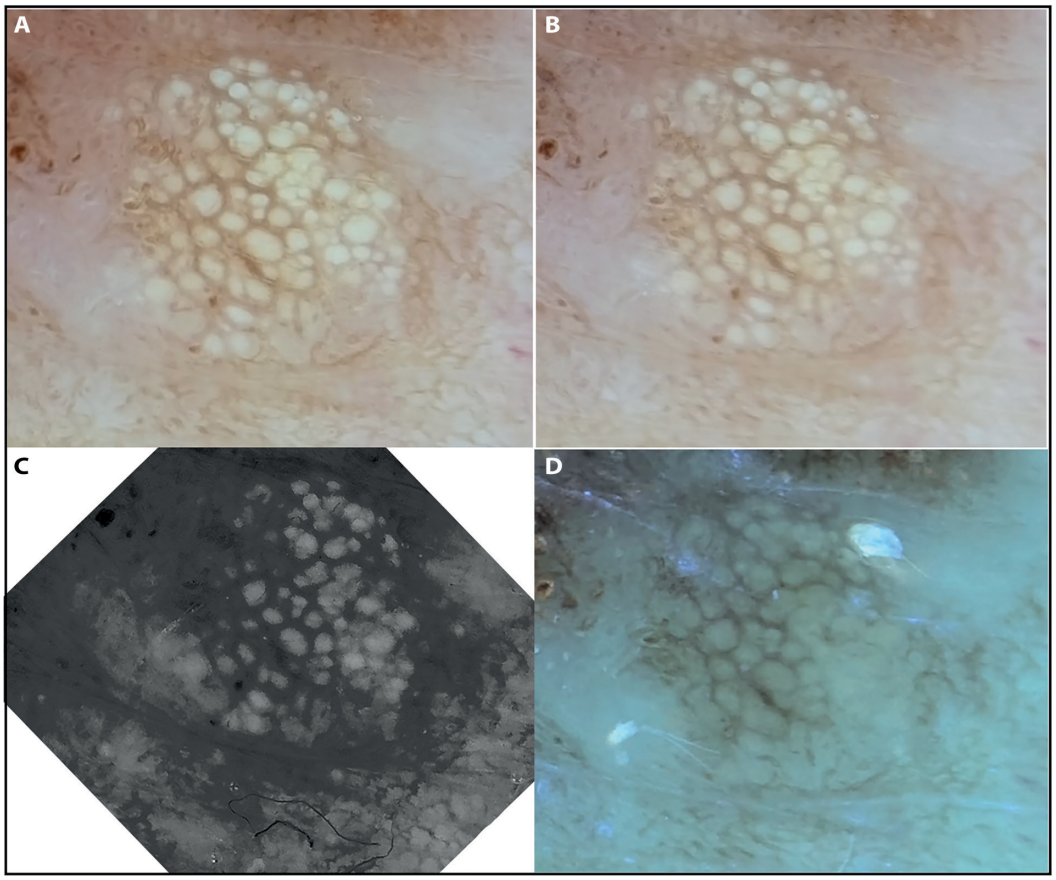

Figure 2. A) Highlight on the balloon cell zone. Polarized; B) Non-polarized; C) Sub-UV reflectance; D) UV-induced fluorescence dermatoscopy.

non-polarized dermatoscopy (Figure 2B) nor with UVFD (Figure 2D), ruling out epidermal cysts and calcifications, yet were hyperreflective under sUVRD (Figure 2C).

Histopathology confirmed compound nevus-associated BCM with large dermal nests of balloon melanocytes (Breslow thickness 0.7 mm, BRAF V600E+), without ulceration or regression (Figure 1C-F).

Conclusion

Nevus-associated BCM may simulate collision lesions, such as nevus/seborrheic keratosis or nevus/BCC. Multimodal dermatoscopy, including UVFD and sUVRD may facilitate accurate interpretation of visualized structures in atypical pigmented lesions.

Ethics Statement: The patient in this manuscript has given written informed consent to the publication of his case details.

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