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The role of reflectance confocal microscopy in a case of Bowen's disease difficult to diagnose

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ABSTRACT There have been limited reports describing reflectance confocal microscopy (RCM) features of Bowen's disease (BD). Herein, we describe the RCM features of a pigmented BD with atypical dermoscopic features, mimicking a melanoma. This case highlights the importance of RCM in a challenging BD.

Case Report

Bowen's disease (BD) is an in situ variant of cutaneous squamous cell carcinoma (SCC). The pigmented variant is an important entity in the clinical differential diagnosis of pigmented melanocytic lesions. In most cases of pigmented BD, it is possible to have an accurate preoperative diagnosis with the typical dermoscopic features. Rarely, there may be challenging cases hard to diagnose even with dermoscopic aid [1-3]. In such lesions, reflectance confocal microscopy (RCM) may play an important role as an additional in vivo diagnostic technique [4].

The RCM features of pigmented BD are scarcely in the literature [4-7]. Herein, we report on a case of pigmented BD with atypical clinical and dermoscopic features that mimics a melanoma and describe its RCM features.

A 67-year-old male with skin phototype III presented to our clinic with an enlarging lesion on the pubis. Clinically it was a light and dark brown flat plaque with 10 x 7 mm in diameter (Figure 1a, inset). The patient had a history of cryosurgery for genital warts in the same region two years ago. The clinical differential diagnosis included a pigmented wart, seborrheic keratosis, pigmented Bowen's disease (BD), and melanoma.

On dermoscopy, pigment network diversity of different colors (brown, black, gray), scar-like depigmentation, gray areas, dotted vessels on an erythematous base, and a few linear irregular vessels were seen (Figure 1a). These dermoscopic features were compatible with a melanoma.

On RCM (Vivascope 1500 Multilaser; Lucid, Rochester, NY, USA), at the stratum corneum some polygonal nucleated cells were seen focally. Atypical honeycomb pattern was obvious (Figure 1b). Characteristic large, targetoid dyskeratotic cells at the spino-granular layer were observed (Figure 2a). There were some dendritic cells also. At the dermo-epidermal junction (DEJ), dermal papillae were edged and seen as bright rings due to the pigmented keratinocytes (Figure 2b). In addi-

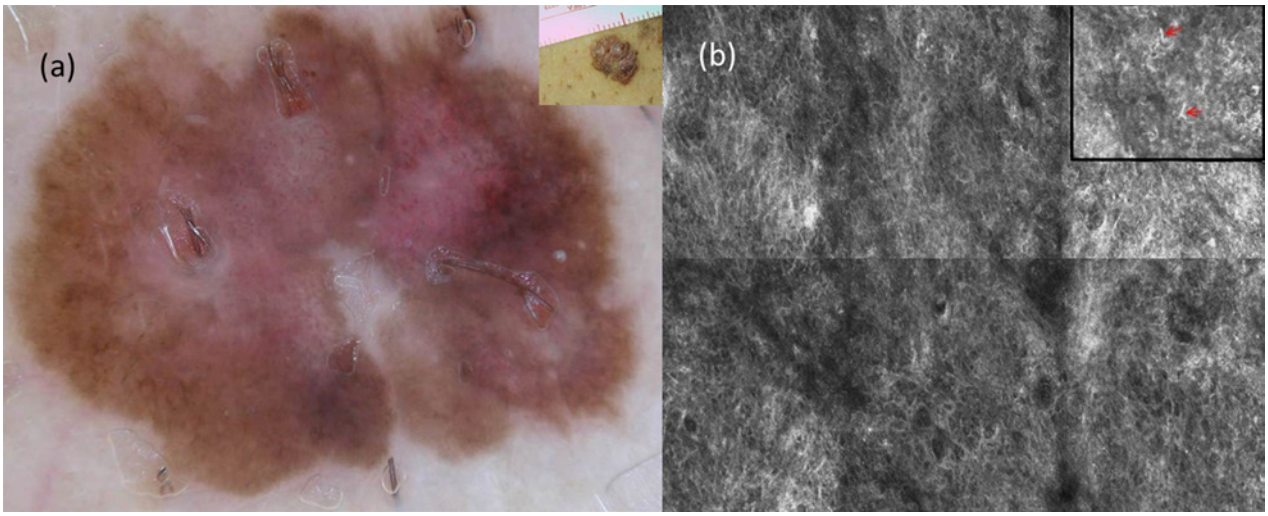

Figure 1. (a) Pigment network diversity (brown, black, gray), scar-like depigmentation, gray areas, dotted vessels on an erythematous base, and a few linear irregular vessels on dermoscopy (Inset: clinical image). (b) Atypical honeycomb pattern (keratinocytes with varying size and shape) at RCM (mosaic, 1 x 1.8 mm). Inset: Dendritic cells (red arrows) at a closer view. [Copyright: ©2018 Karaarslan et al.]

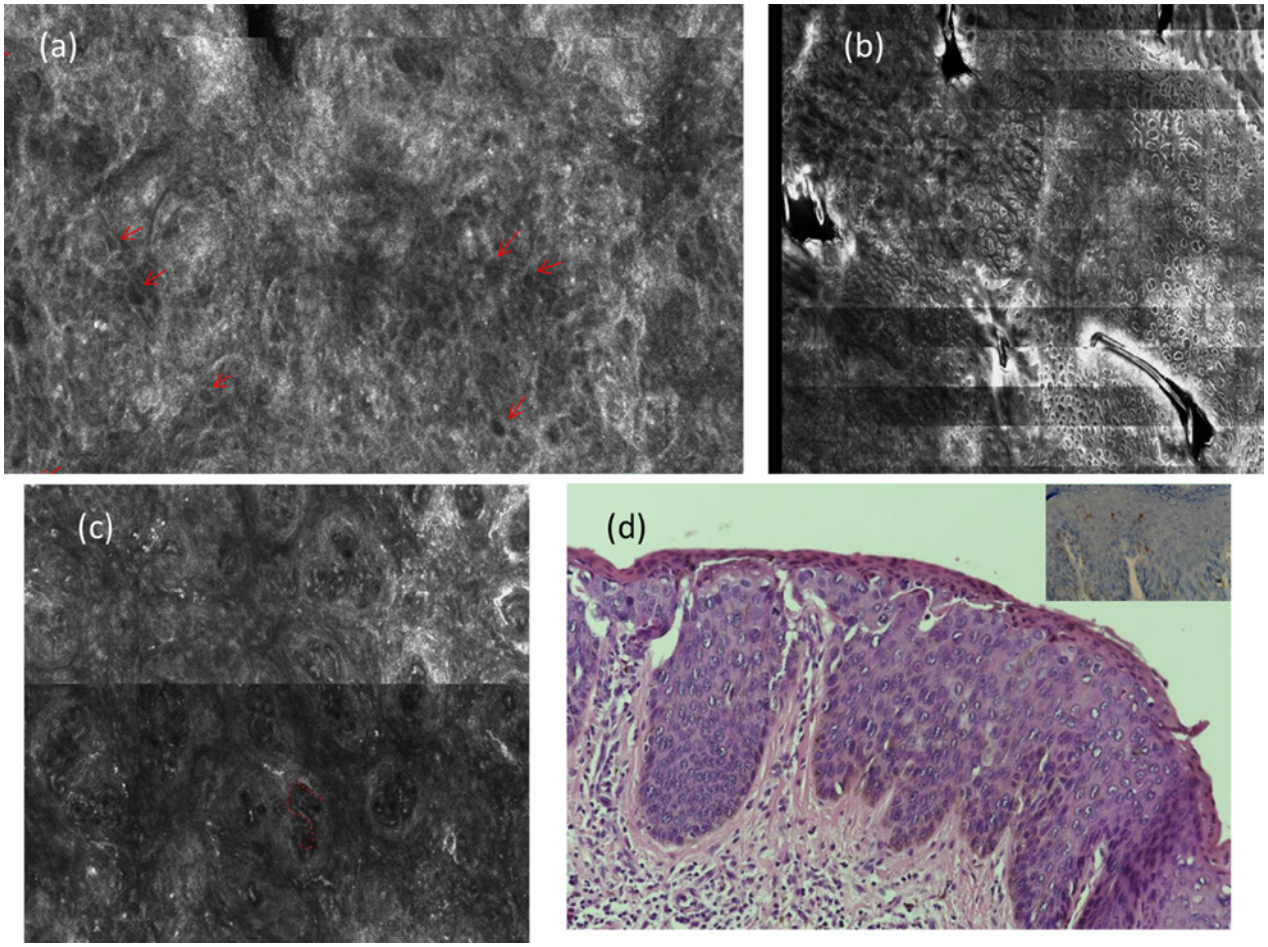

Figure 2. (a) Dyskeratotic cells (large, round nucleated cells) at the spino-granular layer (mosaic, 0.6 x 1.1 mm). (b) Small close-set edged papillae at the DEJ (mosaic, 6 x 6 mm) and (c) tightly coiled vessels, some with S-shape in the center of dermal papillae (mosaic, 1 x 1.5 mm). (d) Histopathology: Parakeratosis and full-thickness atypia of epidermis with acanthosis and increased melanin pigmentation at the basal cell layer (H&Ex100). Inset: Sparse dendritic cells with CD1ax400. [Copyright: ©2018 Karaarslan et al.]

tion, tightly coiled characteristic vessels, some with S-shape, were seen in the center of dermal papillae throughout the lesion (Figure 2c). These RCM findings were consistent with a BD.

On histopathology, overlying parakeratosis and full-thickness atypia of epidermis with acanthosis were seen. Increased melanin pigmentation at the basal cell layer was observed (Figure 2d). These histopathologic features were compatible

with a pigmented BD. The dendritic cells demonstrated by CD1a staining were sparse (Figure 2d, inset).

The diagnosis of pigmented SCC on RCM rely on the presence of the scale crust, markedly atypical honeycomb or disarranged pattern, round nucleated cells (dyskeratotic keratinocytes) at the spino-granular layer, a ringed pattern composed of small close-set edged papillae at the DEJ, and the presence of tightly coiled vessels in the dermal papillae [4-6]. The diagnosis may sometimes be challenging because of the presence of numerous bright, large, round or dendritic cells infiltrating the epidermis, which may be interpreted as atypical cells seen in melanoma. Indeed these cells represent pigmented keratinocytes, Langerhans cells, or melanocytes [5]. Recently, Debarbieux et al. reported on three challenging cases of pigmented Bowen's disease that were falsely diagnosed melanomas due to the high density of misleading dendritic cells seen on RCM [7]. It is important to clearly visualize the entire DEJ with its characteristic small, close-set edged papillae to be able to rule out a melanoma [4]. In the present case, the dendritic cells were not numerous (Figure 2d, inset), and the characteristic small, close-set edged papillae at the DEJ were clearly demonstrated. Therefore, it was not difficult to rule out a melanoma.

In summary, in the present case, the RCM findings were concordant with the diagnosis of pigmented BD. Although there was an atypical honeycomb pattern with some dendritic cells suspicious for melanoma, the presence of dyskeratotic cells, edged papillae, and characteristic vessels warranted the diagnosis of BD. In reality, at first glance at the DEJ, the presence of small bright circles, namely, edged papillae, were sufficient to rule out a melanoma.

This case highlights the importance of RCM in challenging BD.

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