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Original

'Poroma-like' branched vessels with rounded endings in dermoscopy of basal cell carcinoma: a new unusual structure / Cavallo, F., Mazzeletti, V., Zelin, E., Avallone, G., Rocuzzo, G., Bottomicca, F., Quaglino, P., Zalaudek, I., Ribero, S.. - In: CLINICAL AND EXPERIMENTAL DERMATOLOGY. - ISSN 0307-6938. - 48:10(2023), pp. 1177-1179. [10.1093/ced/llad225]

Availability:

This version is available at: 11368/3072995 since: 2024-04-16T18:20:11Z

Publisher:

Published

DOI:10.1093/ced/llad225

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‘Poroma-like’ branched vessels with rounded endings in dermoscopy of basal cell carcinoma: a new unusual structure

Dear Editor, Basal cell carcinoma (BCC) is the most common human malignant tumour, and its incidence is increasing as a result of population ageing and chronic sun exposure.¹ Dermoscopy is a noninvasive diagnostic technique that allows the visualization of structures invisible to the naked eye and has radically improved accuracy in diagnosing BCCs.²

Several dermoscopic structures characterize BCCs: vascular (arborizing vessels, superficial fine telangiectasias), pigmented (blue–grey ovoid nests, multiple blue–grey globules, maple leaf-like areas, spoke-wheel areas, concentric structures) and nonvascular/nonpigmented structures (multiple small erosions, shiny white/red structureless areas, white streaks).³

Although in most cases these dermoscopic findings are a reliable supportive diagnostic tool, atypical presentations can occur, decreasing diagnosis sensitivity and specificity. Given the high prevalence of this malignancy, it is essential to describe such variants, to avoid misdiagnosis, especially with respect to malignant melanoma. Herein, we report the cases of three patients with BCC with unusual vascular patterns (Figure 1).

The first patient was a 64-year-old woman, presenting with an erythematous 6-mm papule on her upper back. Dermoscopic evaluation showed multiple irregular branched vessels with rounded endings on an erythematous background. A single, small blue–grey ovoid nest was also present as a unique ‘classic’ feature of BCC.

The second patient was a 76-year-old man referred to the outpatient service of our dermatology unit for an erythematous 7-mm papule on his upper right arm. Dermoscopic evaluations showed multiple single-stranded hairpin vessels and branched vessels with rounded endings.

The third patient was a 53-year-old man who presented with a translucent 9-mm papule on his temporal region. In dermoscopy, multiple ‘oak-leaf-like’ branched vascular structures were present on a homogeneous erythematous background.

Vascular patterns in BCC are well-defined and studied. According to the literature, the most common vascular

structures are arborizing vessels, followed by short fine telangiectasias. One of these two vascular patterns can be found in more than 90% of patients.⁴ However, more unusual vascular patterns have been described in BCC, such as hairpin vessels, glomerular vessels, dotted vessels, comma vessels and polymorphous vessels (defined as any combination of three or more different types of vascular structures).⁵

Branched vessels with rounded endings, which include cherry-blossom-like vessels, chalice-like vessels, floral vessels, leak-like vessels and flower-like vessels, are defined as branched vessels with looped or coiled terminal endings that characteristically have a rounded silhouette. This vascular pattern, recently described as a specific clue in the diagnosis of eccrine poroma,⁶ seems to be the result of dilated capillaries filled with erythrocytes,⁷ and, to the best of our knowledge, has never been associated with BCC. However, ‘oak-leaf-like’ vessels in BCC have only been described by Pogorzelska-Dyrbuś with use of super-high magnification dermoscopy,⁸ suggesting that these vascular structures could be underdetected in BCC. We speculate about the hypothesis that these types of vessels are the expression of a small, early-growing nodular BCC and that, as time goes by and size increases, these vessels may evolve into the ‘classic’ arborizing vessels commonly found in BCC.

Classic dermoscopic vascular criteria for BCC diagnosis are well-characterized and their main value lies in assisting with diagnostic differentiation from other more aggressive skin cancers, which require prompt treatment, and from benign tumours, which do not need mandatory surgical excision. However, BCC rarely present with unusual vascular patterns, possibly leading to a misdiagnosis. Based on our data, nodular BCC may display branched vessels with rounded endings, a specific vascular pattern previously only associated with nonpigmented eccrine poroma.⁸ We aim to include it in the panel of atypical vascular dermoscopic patterns of BCC, suggesting that surgical excision with histological examination is advised when we find it together with other suggestive clues, to exclude a BCC diagnosis.

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Funding sources: this research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Conflicts of interest: the authors declare no conflicts of interest. I.Z. and S.R. share senior authorship.

Data availability: data underlying this article are available in the article.

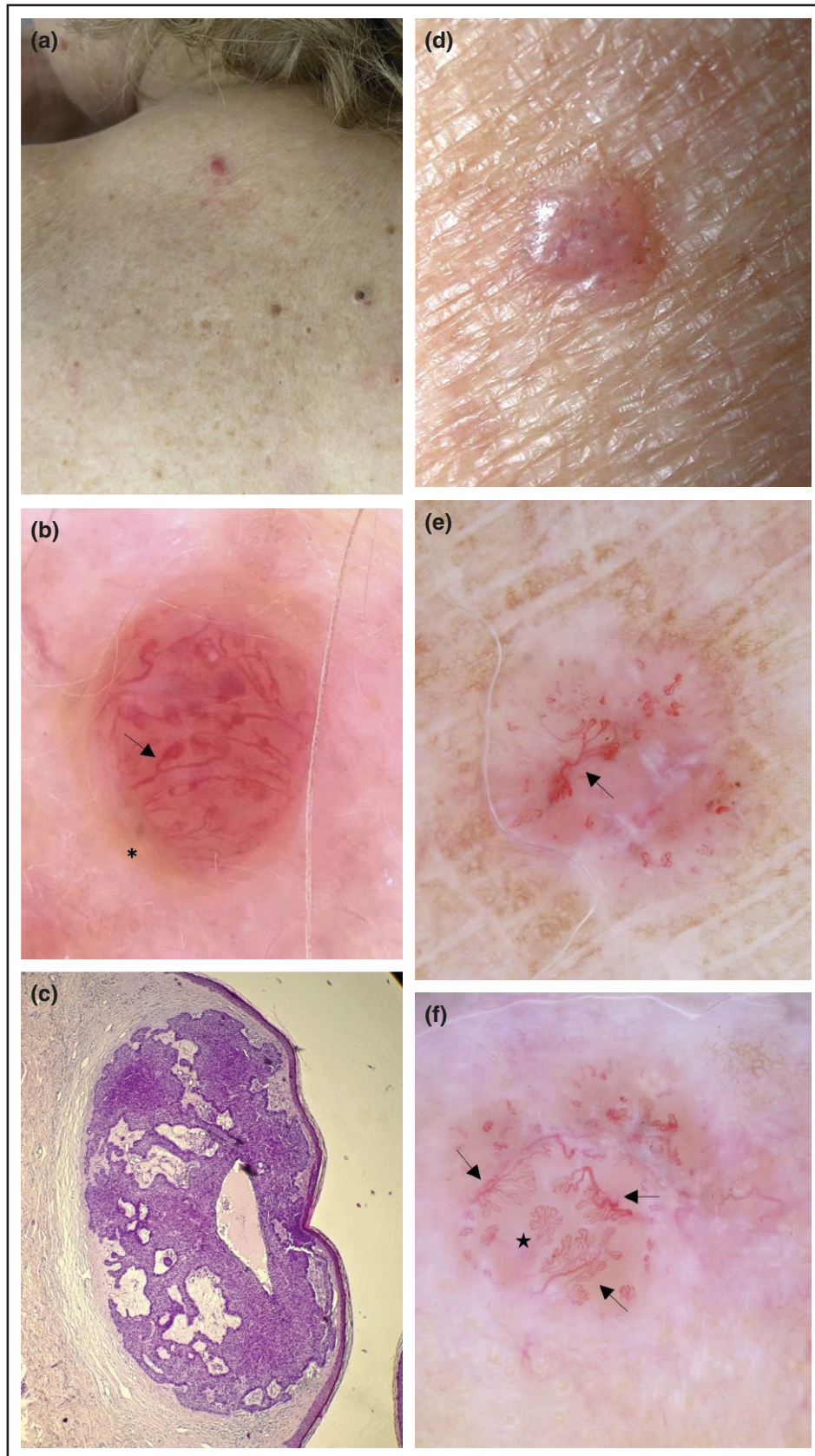


Figure 1 Patient 1: (a) red papule on the upper back, diagnosed as a basal cell carcinoma (BCC); (b) dermoscopy of this BCC, showing branched vessels with rounded edges (arrow) on an erythematous background. A single ovoid nest was also present (asterisk); (c) pathology of this BCC, showing large nodules of basaloid cells with palisading, cleft formation and mucin deposition (haematoxylin and eosin, magnification $\times 2$). Patient 2: (d) pinkish papule on the upper right arm; (e) dermoscopy of this BCC, showing branched vessels with rounded endings in the form of floral vessels (arrow), hairpin and coiled vessels. Patient 3: (f) dermoscopy of a BCC showing leaf-like vascular structures (arrows) and cherry-blossom vessels (star).

Ethics statement: ethical approval: not applicable. Informed consent: all patients gave written, informed consent for participation and publication of their case details and images.

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