Dermatology Practical & Conceptual

Cutaneous Angiosarcoma Mimics Basal Cell Carcinoma: Utility of Optical Super-High Magnification Dermoscopy in Differential Diagnosis

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Introduction

Angiosarcomas are rare, aggressive malignancies with poor prognoses that arise from endothelial cells lining blood vessels. They can occur in various body sites but are most commonly found in the skin, particularly on the head and neck of elderly individuals. Cutaneous angiosarcomas can mimic other conditions, thereby delaying proper diagnosis and treatment. Clinically, these skin cancers appear as violaceous patches or plaques, but they can exhibit a wide range of presentations and can resemble benign lesions such as bruises or eczema, or rarely, other malignancies like basal cell carcinoma (BCC) [1-3].

We describe a lesion of the scalp that mimicked an ulcerated BCC for which we used optical super-high magnification dermoscopy (OSHMD), an advanced imaging technique enabling ×400 magnification of dermoscopic pictures. The integration of clinical-dermoscopic findings and OSHMD features led to a prompt skin biopsy, revealing an angiosarcoma with histopathological examination.

Case Presentation

An 81-year-old woman suffering from rheumatoid arthritis, who denied taking any drugs, presented for a plaque located on the scalp. According to her medical history, the lesion had appeared after a trauma six months prior and had persisted over time. Clinical examination revealed a 5 × 3.5 cm plaque on the mid scalp, half of which was ulcered (Figure 1A). On dermoscopy, white shiny areas and arborescent vessels over a pink background and ulceration were observed (Figure 1B).

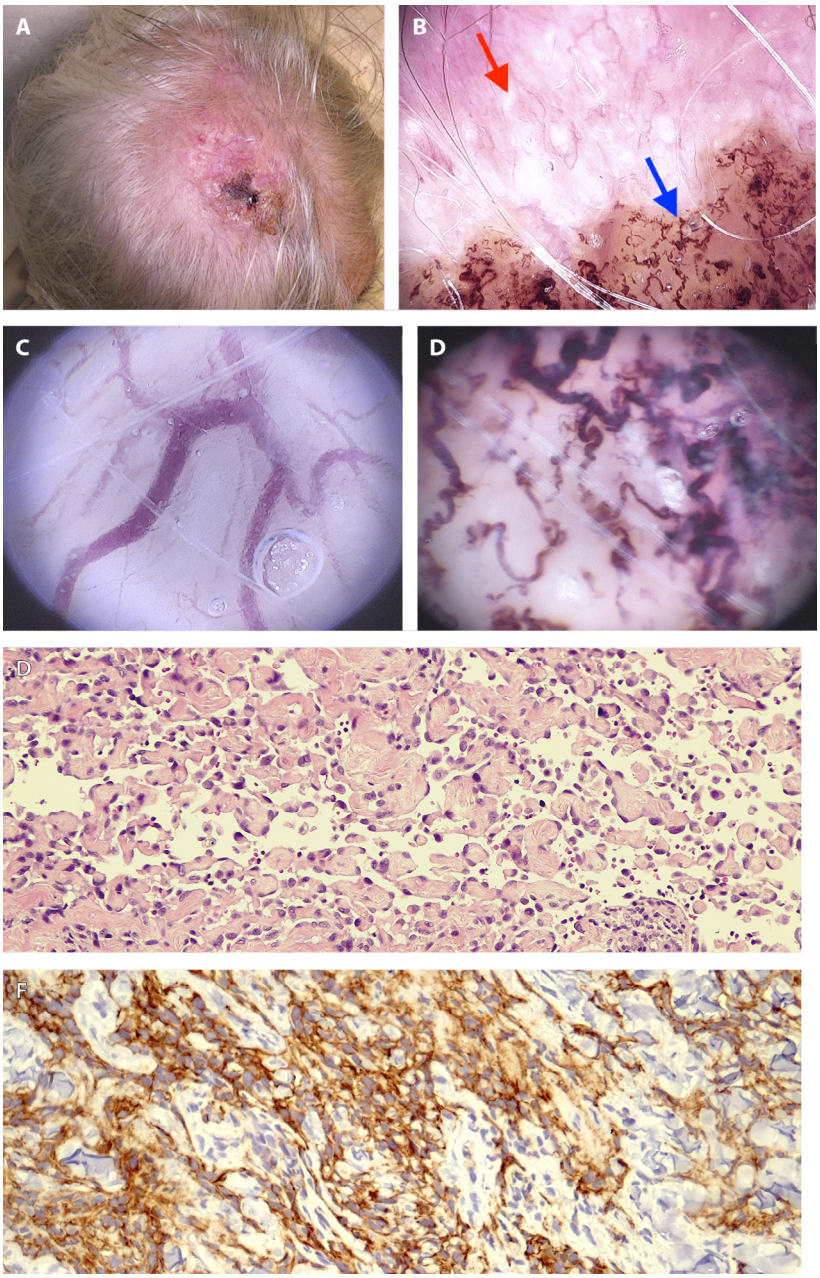

Figure 1. A case of a cutaneous angiosarcoma. (A) Ulcerated 5 × 3 cm plaque located on the mid scalp. (B) Dermoscopy of the lesion. Half of the image represents the central ulcerated part with atypical vessels (blue arrow), the other half the peripheral pink part with crystalline structures and arborescent in-focus vessels (red arrow). (C) Optical super-high magnification dermoscopy (OSHMD), ×400: a focus on arborizing vessels. (D) OSHMD (x400): a focus on irregular looped blue-purple vessels. (E) Histopathology: irregular anastomosing vascular channels lined with atypical endothelial cells (H&E staining, original magnification, ×400). (F) Endothelial cells express CD31 marker on immunohistochemistry.

Further, the lesion was explored with OSHMD, highlighting arborizing vessels as well irregularly looped blue-purple vessels (Figure 1, C and D). Interestingly, dermoscopic findings together with arborescent vessels observed with OSHMD were suggestive for a possible diagnosis of BCC. However, the history of the relatively recent appearance in relation to the size of the lesion and the irregularly looped blue-purple vessels did not support our suspicion of BCC, thus prompting a biopsy and histological examination. Histology revealed irregular anastomosing vascular channels lined with atypical endothelial cells (Figure 1E). Additional immunohistochemistry showed positivity for CD31 and ERG, supporting the diagnosis of cutaneous angiosarcoma (Figure 1F). The proliferative activity evaluated with Ki-67 was equal to 50%. Because of the nature of the neoplasm, the patient was referred to the Sarcoma Operating Unit for overall management of the case.

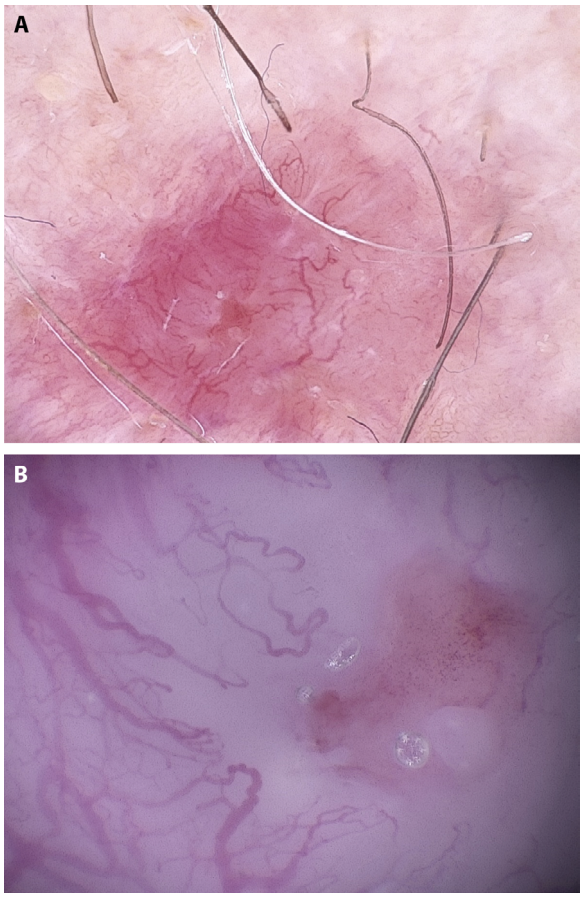

Figure 2. Dermoscopic and optical super-high magnification dermoscopy (OSHMD) findings in basal cell carcinoma (BCC). (A) Dermoscopy of a BCC: pinkish lesion with arborescent vessels. (B) OSHMD (×400x): a focus on regular looped vessels of BCC.

Conclusion

This report describes a case of cutaneous angiosarcoma mimicking BCC, with possible implications for diagnostic delay and worse prognosis. Clinical and dermoscopic findings in angiosarcomas have been described previously [4]. BCC represents a rare condition for differential diagnosis, as reported in sporadic case reports [1,2].

Recently, the use of OSHMD for skin cancer analysis has been introduced. While arborescent and regular red looped vessels in OSHMD (Figure 2) have been identified and described in BCC [5], the observation of irregularly looped blue-purple vessels with OSHMD (Figure 1D) in our case might assist in early diagnosis of aggressive skin cancers and lead to better patient management.

Further studies are warranted to describe the frequency of this previously undescribed feature, the irregular looped blue-purple vessels, in skin cancers.

References

1. Veasey E, Bahrami S, Schadt C. Angiosarcoma imitating a morpheaform basal cell carcinoma. *Cutis*. 2020;105(2):E28-E30. PMID: 32186542.
2. Kasper DA, Smetanick MT, Ermolovich T. Angiosarcoma clinically resembling morpheaform basal cell carcinoma. *Dermatol Surg*. 2008;34(10):1407-1410. DOI:10.1111/j.1524-4725.2008.34297.x. PMID: 18637812.
3. Kim HS, Kim TW, Mun JH, et al. Basal cell carcinoma-mimicking lesions in Korean clinical settings. *Ann Dermatol*. 2014;26(4):431-436. DOI:10.5021/ad.2014.26.4.431. PMID: 25143670.
4. Apalla Z, Liopyris K, Kyrmanidou E, et al. Clinical and Dermoscopic Characteristics of Cutaneous Sarcomas: A Literature Review. *Diagnostics (Basel)*. 2023;13(10):1822. DOI:10.3390/diagnostics13101822. PMID: 37238306.
5. Pogorzelska-Dyrbuś J, Lallas A, Szepietowski JC. Morphology of Vessels in Basal Cell Carcinoma in Optical Super-high Magnification Dermoscopy. *Acta Derm Venereol*. 2023;103:adv11966. DOI:10.2340/actadv.v103.11966. PMID: 37529846.