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First description of the dermatoscopic features of acquired elastotic hemangioma—a case report

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ABSTRACT We present a case of acquired elastotic hemangioma (AEH), a rare, benign vascular tumor. A Caucasian male in his 60s presented with an asymptomatic, solitary, non-pigmented and violaceous lesion of short duration on the dorsum of his hand. The lesion had unique clinical, dermatoscopic and pathological features. Dermatoscopic images of the lesion are presented for characterization and histopathological correlation that have not previously been published or described.

Case report

The patient presented to our coastal regional Australian skin cancer clinic for an opinion on a new skin lesion on the lateral dorsum of his hand, first noticed two weeks prior. It was asymptomatic, without tenderness, bleeding, scale or itch. There was no history of trauma to the site or insect bite. There were no other similar lesions and no previous history of the lesions or history of previous skin cancers.

At initial consultation the lesion was 8 x 6 mm in diameter, violaceous, plaque-like, with a slightly raised thin border and a mildly rough surface, without scale (Figures 1A and 1B).

Dermatoscopy of the lesion showed a homogenous, non-pigmented violaceous lesion, without obvious vasculature at standard magnification. There were no keratin features or ulceration (Figure 2A). The most striking dermatoscopic feature was the conspicuous shiny white structures throughout the lesion (Figure 2B).

Because of the homogenous appearance of the lesion, its asymptomatic nature and the absence of classically worrying dermatoscopic features (such as pigmented clues, keratin features, polymorphic vessels, or ulceration), it was felt that the lesion was a benign dermal process, such as an inflamed lesion of granuloma annulare, and the patient was reassured and advised to return if the lesion was persisting or enlarging after a period of one month.

The patient returned at three months, as the lesion had persisted and enlarged to 11 x 9 mm in diameter. Clinical and dermatoscopic features were unchanged and it was still asymptomatic, but the patient was concerned about its growth. Clinical and dermatoscopic photographs were taken with the patient's consent, using a Canon PowerShot G16

digital camera (Canon, Tokyo, Japan) coupled to a Dermlite DL3N dermatoscope (3Gen LLC, San Juan Capistrano, CA, USA), (Figures 1 and 2). A 4 mm punch biopsy was performed to rule out malignancy.

Histopathological examination of the biopsy specimen was interpreted as showing hyperkeratosis and solar damage with a prominent fairly banal capillary proliferation in the dermis. This correlated poorly with the clinical picture and formal excision was suggested. The patient was recalled and the lesion was excised.

Histopathological examination of the excisional specimen was interpreted as an acquired elastotic hemangioma based on the constellation of findings, including hyperkeratosis and flattened rete ridges, marked solar elastosis, and a superficial dermal horizontal band-like proliferation of capillaries (Figures 3A and 3B). There was no recurrence of the lesion at follow-up at three months.

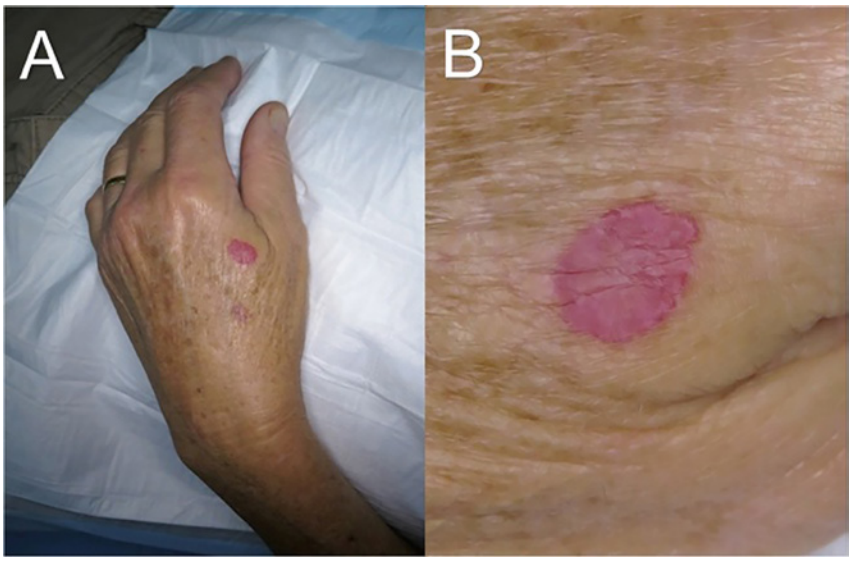

Figure 1. Clinical (**A**) and macroscopic (**B**) views of AEH. Solitary, violaceous macular lesion on dorsum of hand (chronically sun-exposed region). Raised border without evidence of scale, crust or ulceration. [Copyright: ©2016 Hicks et al.]

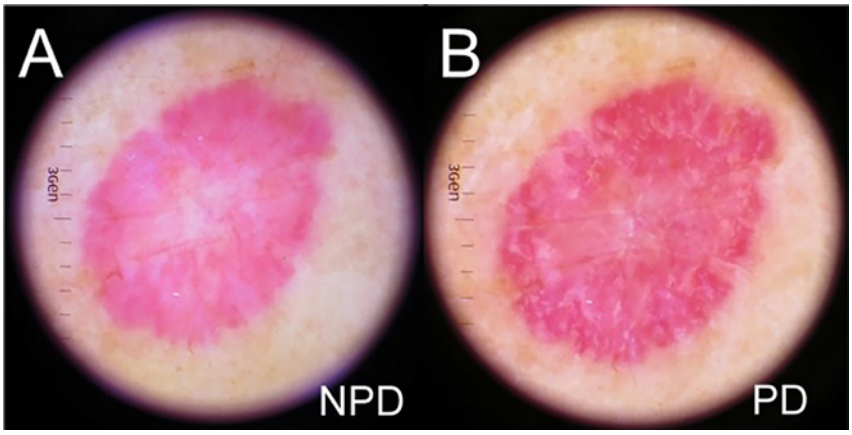

Figure 2. Non-polarizing (NPD) (**A**) and polarizing (PD) (**B**) dermatoscopy of AEH. Scale 1 mm intervals. Violaceous homogenous lesion without vessels but marked widespread shiny white structures visualized with polarized dermatoscopy. [Copyright: ©2016 Hicks et al.]

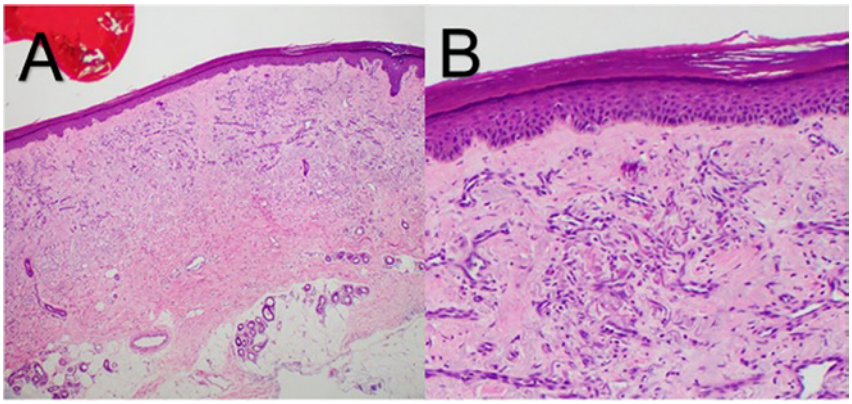

Figure 3. Photomicrographs of the lesion, H&E stain. 40x (**A**) and 100x (**B**) magnification. Superficial dermal horizontal band-like proliferation of capillaries, with marked solar elastosis, some hyperkeratosis and flattening of rete ridges. The epidermis is otherwise normal. [Copyright: ©2016 Hicks et al.]

Discussion

Acquired elastotic hemangiomas are rare, benign, usually solitary lesions occurring on sun-damaged skin of exposed areas in older adults, classically the dorsum of forearms, with a slight female predilection. Initiation of progesterone therapy has been potentially implicated in the unusual scenario of multiple acquired elastotic hemangiomas in perimenopausal women [1]. AEH was first described by Requena et al in 2002 with a series of six cases [2]. Martorell-Calatayud et al in 2009 published a series of 14 cases that had been recorded over an 18-year period, all with similar clinical and histopathologic features. Most commonly, these lesions are mistaken clinically for basal cell carcinomas (BCC) [3]. AEH has a slow growth rate and is typically asymptomatic, but clinically quite striking due to its violaceous appearance. Histopathologically, it exhibits a superficial dermal band-like proliferation of capillaries, many of which are arranged parallel to the epidermis, separated by bands of collagen. The endothelial cells display a "hobnail" pattern without cellular atypia or mitoses. There is invariably a narrow band of uninvolved papillary

dermis and a significant degree of solar elastosis. There is a normal appearing or atrophic epidermis and occasional hyperkeratosis [4]. Immunohistochemical tests are not routinely required for diagnosis, although CD31 and CD34 immunostains will highlight the endothelial cells [5]. Most will also express D2-40, with a minority also being smooth muscle actin positive [3]. It has been suggested that AEH may have a lymphatic origin, but this hypothesis has been questioned by Tong and Beer [6]. In the literature, the clinical differential diagnosis of acquired elastotic hemangioma includes BCC, granuloma annulare, patch-stage Kaposi's sarcoma, acquired tufted angioma, targetoid hemosiderotic hemangioma, low-grade angiosarcoma and capillary hemangioma [1,3,5].

Whilst there is an increasing appreciation of the clinical and histopathological basis of AEH, dermatoscopy has never been described in these lesions. The dermatoscopy of this particular case showed a uniform, violaceous plaque without obvious vasculature or pigment that could aid in the diagnosis of a lesion prior to biopsy (Figure 2A). However, there were prominent and widespread shiny white structures distributed evenly throughout the lesion (Figure 2B). Such shiny white structures are not encountered in other common lesions without other clues and are different from both the short white perpendicular/orthogonal polarizing lines (also called shiny white streaks and chrysalis or crystalline structures) seen in lesions such as melanoma, Spitz naevi, lichenoid keratosis (LPLK) and dermatofibroma, the random shiny white lines and shiny white areas seen in BCCs, and the typical Wickham's striae seen lichen planus [7,8]. Kaposi's sarcoma has been described to commonly have a specific dermatoscopic polarising artefact, named "rainbow pattern," where there are multi-colored shiny structures. It is postulated that this is due to the tightly packed capillary proliferation without intervening collagen [9]. In our example of AEH, there were no such coloration artefacts. We suggest that the specific polarization artefact of shiny white areas may be due to the horizontal band-like proliferation of capillaries in the superficial dermis with intervening collagen bundles. This specific feature, combined with the striking violaceous background and otherwise homogenous appearance of the lesion, may aid in the clinical recognition of this rare entity.

Conclusion

In summary, we present the first description of the dermatoscopic features of acquired elastotic hemangioma. Our case revealed a violaceous plaque on chronically sun-damaged skin without vessels, but revealing prominent and widespread shiny white structures.

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