Letter to the Editor

Eruptive vellus hair cysts in an unusual location with atypical pathological features

Dear Editor,

Eruptive vellus hair cysts (EVHCs) represent a developmental abnormality of vellus hair follicles. The diagnostic hallmark is the presence of laminated keratin and multiple transversally and obliquely cut vellus hair shafts within a mid-dermal cyst [1]. Previously, a simple extraction technique, followed by microscopic detection of vellus hairs among the cyst contents, has been proposed as an alternative, rapid diagnostic method and effective treatment option [2–4]. Herein, we report a young male with EVHCs on the extensor surface of elbows that appear to be challenging for physician to make correct diagnosis since no typical finding can be demonstrated by extraction technique and pathologic examination.

A 20-year-old Asian male presented with multiple asymptomatic papules on his elbows for 2 years (Fig. 1A). He mentioned occasional manipulation of these lesions. The patient’s past medical history includes psoriasis for 5 years treated by the topical steroid. He denied trauma history before these lesions developed. Physical examination revealed multiple discrete, 2–4 mm sized, round, domed-shaped, reddish-brown papules around the extensor surface of bilateral elbows. A few of the lesions also demonstrated peripheral erythema and scaling. There were no

Figure 1. (A) Clinical appearance of EVHCs on the extensor surface aspect of the elbow. (B) Histological features showing occlusion of vellus hair in the follicle with surrounding granulomatous inflammation in mid dermis (hematoxylin and eosin stain, 40x). (C) The transversely and obliquely cut vellus hair shafts with a few multinucleated giant cells in mid dermis (hematoxylin and eosin stain, 200x). (D) Immunohistochemical staining of Cytokeratin AE1/AE3 demonstrates keratin and hair shafts without residual cystic epithelium at mid-dermis (400x).

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lesions on the face, trunk or lower limbs. There was no family history of similar lesions. Topical steroid, azelaic acid and oral doxycycline had been applied, but the lesions showed no response. Due to inadequate clinical response, the patient underwent incision and drainage of several papules. However, all the attempts failed to identify specific material by extraction technique followed by microscopic examination. Therefore, biopsy of the papule on the left elbow was performed and revealed granulomatous inflammation near a hair follicle (Fig. 1B). The inflammatory cells of the granuloma include numerous lymphocytes, histiocytes and some foreign body giant cells. No fungal or mycobacterial microorganism can be demonstrated by special stains. The pathologic report did not provide a conclusive diagnosis. Therefore, we carefully reviewed the pathology slides and, surprisingly, a few scattered vellus hairs were noted in the dermis (Fig. 1C). Therefore, the diagnosis of EVHCs with endogenous foreign body reaction was made.

Characteristically, most common affected site of EVHCs is anterior chest, followed by abdomen, face and axilla [1]. EVHCs on bilateral elbows without truncal involvement were uncommon. Histologically, the features of EVHCs are mid-dermal cysts, lined by stratified squamous epithelium, containing laminated keratin and vellus hair [5]. However, there is no intact cystic lining, but only a few vellus hairs and keratin scattered in the dermis of the biopsied specimen, which is further confirmed by immunohistochemical stains including cytokeratin AE1/AE3, CK17 and CK19 (Fig. 1D). The presence of foreign-body granuloma may reflect that EVHC biopsied was undergoing endogenous foreign body reaction following traumatic rupture of the cyst wall. As is observed in our patient, once the EVHCs lost its structural integrity, the extraction technique could not be a reliable diagnostic and treatment option. We represent a patient with EVHCs demonstrating atypical clinical presentation and pathological changes. Knowledge of clinical and pathologic spectrums of EVHCs will be helpful for making the correct diagnosis in a timely manner.

References

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