



## Eruptive Vellus Hair Cysts: An Unusual Case Report

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### Abstract

Eruptive Vellus Hair Cysts (EVHC) are a sporadic developmental abnormality of vellus hair follicles, which was firstly described in 1977. It is usually asymptomatic and benign in nature occurred at any age. EVHC often presents clinically as round, dome-shaped, skin-colored papules ranging from tens to hundreds. Histopathologic features reveal a mid-dermal cyst lined by stratified squamous epithelium, filled with laminated keratin, variable numbers of transversally and obliquely cut vellus hair shafts. EVHC is not very common clinically; therefore, we described and added to the medical literature a unique case of facial EVHC mimicking nevus of Ota.

### Case Presentation

A 23-year-old Chinese man presented with diffuse blue-gray patches on the forehead and cheeks without any symptoms for several years duration. No history of trauma or topical used medicine was manifested. On physical examination, diffuse distribution of blue-gray patches with palpable subcutaneous non-inflammatory nodules was noted; the nodules varied from 1 mm to 2 mm in size with bluish gray in color. The family history was unremarkable. The initial clinical differential diagnosis included nevus of Ota, exogenous pigmentation, or comedones (Figure 1A, 1B). At first, we performed Reflectance Confocal Microscopy (RCM) on the lesions, it showed that there were cysts in the mid to deep-dermal (Figure 2). Therefore, the diagnosis of pigmented diseases can be ruled out. To further clarify the diagnosis, a biopsy of lesion on right temple was performed, and the sections exhibited mid to deep-dermal cyst lined by stratified squamous epithelium, and filled with laminated keratin and variable numbers of transversally and obliquely cut vellus hair shafts (Figure 3A, 3B). We also performed immunohistochemical examination of Melan-A and SOX10, nevus cells were not found in the dermis. The diagnosis of EVHC was made, and adapalene gel was prescribed for topical application. Facial alpha-hydroxy acid (concentration of 50%) was treated once a month. After three times of treatment, the effect is obvious with superficial lesions fading away significantly, but deep cysts did not improve as much.

### Discussion

EVHC usually occurs in the chest, upper extremities, face, neck, or other sites [1,2]. The lesions may be flesh colored, hyperpigmented, red, blue, yellow, or even whitish. Several studies reported cases containing elements of both EVHC and steatocystoma multiplex [3]; familial cases were also described [4]. For our patient, lesions spread diffusely on his forehead and cheeks, bluish-gray in color. No history of trauma or topical used medicine was elucidated. The clinic diagnosis of exogenous pigmentation or nevus of Ota was excluded according to the RCM, histopathologic and immunohistochemical findings. Dong [5] reported a 34-year-old woman with numerous pinheads to match head-sized papules on entire face, especially on the forehead. The lesions were caused by the application of 3% minoxidil solution on the scalp for treatment of hair loss. A familial EVHC case presented with dyspigmentation over her face and proximal upper limbs since childhood. She had remarkable bluish-gray facial discoloration mimicking bilateral nevus of Ota. Her father had similar lesions on the face [6]. Our case was unique with the nevus of Ota like lesions on the face for several years duration. We suspected that the bluish-gray appearance might be associated with the Tyndall effect, because of the cysts locating in the mid to deep-dermis. The long wave visible light is absorbed when it penetrates into the dermis, while the short parts (blue and purple light) is scattered by the skin and folded back to the skin surface, which is similar to that of nevus of Ota. RCM examination played a great role in the diagnosis of this case. RCM result clearly showed the cysts in the dermis, thus excluding the diagnosis of pigmented diseases, subsequent pathological

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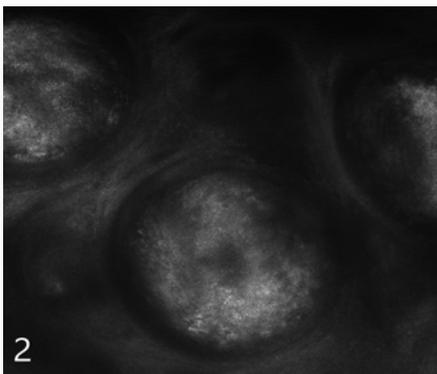
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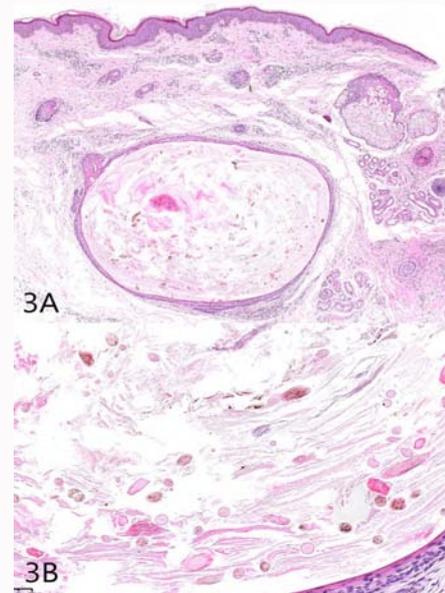


**Figure 1:** A) Diffuse distribution of blue-gray patches mimic nevus of Ota on the forehead and cheeks. B) Lesions on the right cheek with palpable subcutaneous non-inflammatory nodules.



**Figure 2:** Cysts in the mid to deep-dermal (RCM).

examination and immunohistochemical detection further confirmed the real diagnosis. RCM has been used in the diagnosis of many skin diseases and has great clinical application prospects.



**Figure 3:** A) Mid to deep-dermal cyst lined by stratified squamous epithelium (H&E, x40). B) The cyst was filled with laminated keratin and variable numbers of transversally and obliquely cut vellus hair shafts (H&E, x200).

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