

Ultraviolet Enhanced Trichoscopy – a New Tool to Assess Pili Annulati

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Introduction

Pili annulati is a hair shaft disorder which is frequently underdiagnosed. Its typical features consist of air-filled cavities located within the hair cortex that create the so-called “banding pattern.” [1]. They reflect the light and therefore can be seen as a dark band in transmitted light microscopy [2]. Pili annulati is considered an autosomal dominant disease; however, there have been reports of its appearance along other conditions such as alopecia areata or trichorrhexis nodosa [1, 2]. Clinically, the hair shafts are usually shiny and bright. On trichoscopy, hair shafts reveal white and dark bands in both dark and blonde hair, and 20%-80% of hair are usually affected [3]. This condition rarely causes any complications; nevertheless, hair fragility and brittleness have been reported [1]. Most patients have no concomitant abnormalities, and they are often unaware of the condition [4]. UV-enhanced dermatoscopy has been explored as a novel technique with

many different, new indications for its use in general dermatology, trichoscopy, onychoscopy, and dermatology-oncology [5]. Herein, we present a case of a 22-year-old patient with pili annulati diagnosed with handheld trichoscopy and the application of UV-enhanced trichoscopy.

Case Presentation

A 22-year-old female patient presented to a dermatology outpatient clinic asking for a hair examination. She complained of a partial hair loss two months prior to her visit. She reported no concomitant disease. According to the patient, she had developed several hairless patches; however, they had regrown. Trichoscopy was performed with a handheld dermatoscope (DermLite DL5 device), which allows performing dermatoscopy with polarized and 365nm UV light. On regular trichoscopy (×10 magnification), dark and light bands were seen. UV-enhanced trichoscopy revealed blue bands, possibly

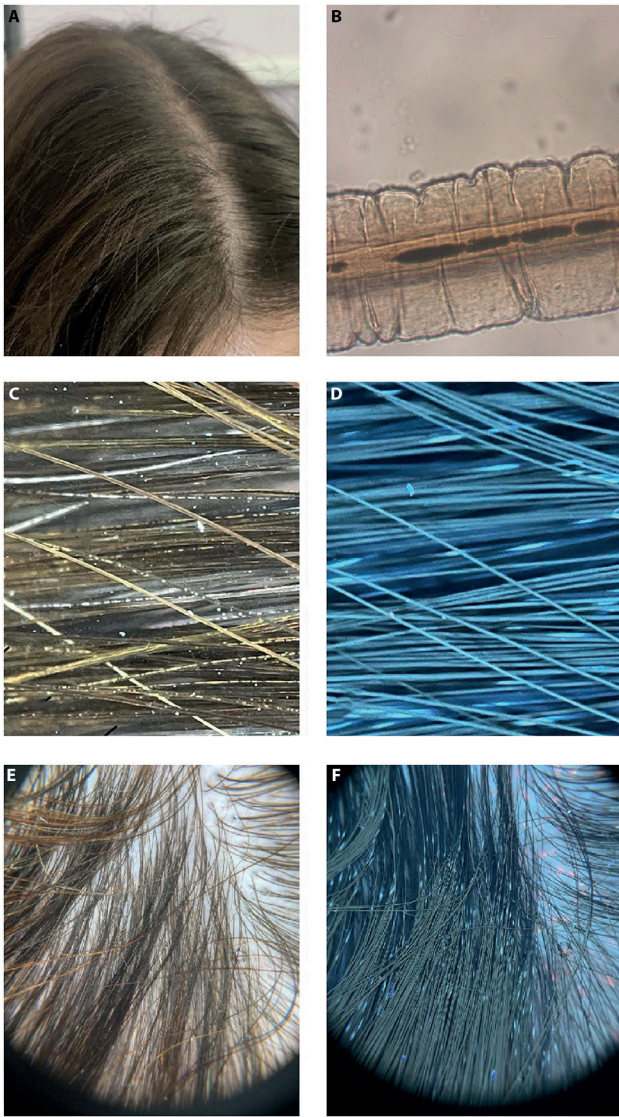


Figure 1. (A) Clinical presentation of the hairs. (B) Light microscopy reveals a hair shaft with dark bands within the hair cortex. Dimethyl sulfoxide (DMSO) medium artifacts are visible around the hair shaft ($\times 40$). (C, E) Pili annulati in trichoscopy and (D, F) UV-enhanced trichoscopy (DermLite DL5, $\times 10$ magnification): dark and light bands within the hair shafts. UV-enhanced trichoscopy revealed blue bands, possibly due to the UV light penetrating through the air-filled cavities.

due to the UV light penetrating through the air-filled cavities (Figure 1). The bands were more visible in UV-enhanced trichoscopy than in the regular polarized mode. On light microscopy ($\times 40$), a hair shaft with dark bands was detected. A diagnosis of pili annulati was established.

Conclusion

Although 20x magnification trichoscopy may be considered a standard device for hair shaft abnormality assessment, applying a handheld device with a UV-enhanced trichoscopy mode may help facilitate the correct diagnosis in case of videodermatoscope unavailability. The air-filled cavities that were at first not clearly visible in polarized light were enhanced by UV-enhanced trichoscopy, which, in our opinion, may be a valuable additional tool to make the correct diagnosis in a clinical setting. We assume that the patient experienced an episode of alopecia areata, whereas the concurrence of these two entities remains unclear since only a few cases have been reported in the literature [6]. Pili annulati is usually a benign, isolated condition which is often underdiagnosed due to its rarity. The treatment is usually not indicated, as in most hair shaft abnormalities. We believe that UV-enhanced trichoscopy to be a new, easily available, additional tool to establish the correct diagnoses in clinically difficult cases.

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