

## Ultraviolet-Induced Fluorescence Dermatoscopy of Trichobacteriosis Axillaris Reveals Peripilar Yellow-Green Luminescent Concretions

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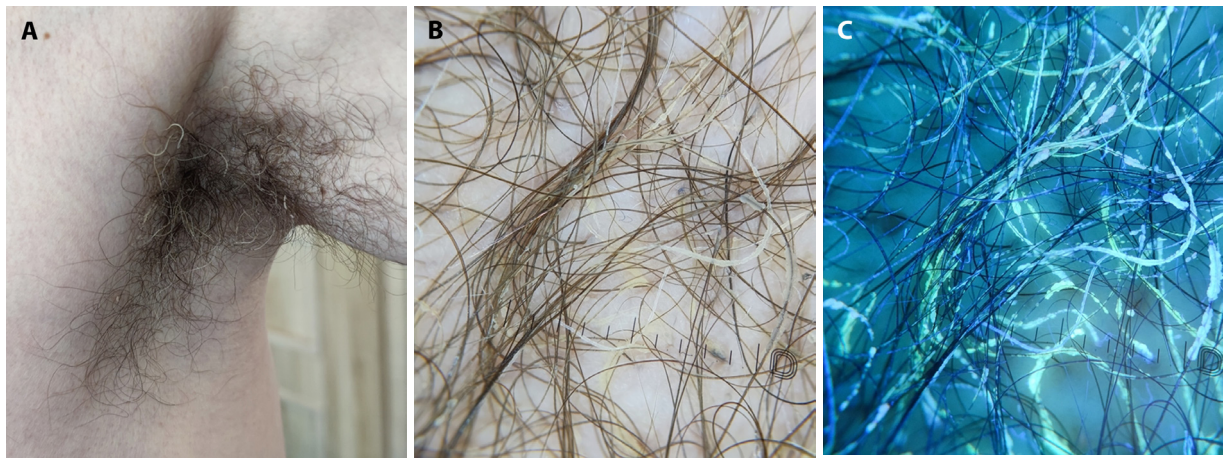
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### Introduction

Trichobacteriosis axillaris (TA) is a superficial bacterial infection caused by *Corynebacterium* species that commonly affect the soft keratin layer around the axillary hair and, to a lesser extent, pubic, genital, and rarely scalp hair [1]. In most cases, the diagnosis is supported by the patient's history of smelly/sweaty armpits, in addition to the most common clinical appearance of irregular yellow cement-like insoluble concretions wrapped around the hair shaft predominantly caused by *Corynebacterium flavesens*. *Micrococcus castelani* or co-infection of *Corynebacterium* sp. and *Serratia marcescens*

have been cultured from rare red variant, and *Micrococcus nigricans* from the rare black concretions [1]. The disorder is more common in tropical and humid climates, and usually affects teenagers and young adults. TA can be differentiated from piedra, pediculosis, hair casts and *Trichosporon asellei* infections with Wood's lamp (peak wavelength 365 nm) [1,2]. However, when atypical hair bearing areas are affected, dermatoscopy can serve as a helpful diagnostic aid by demonstrating these typical yellow concretions [3]. Ultraviolet-induced fluorescence dermatoscopy (UVFD), a novel diagnostic technique, can evoke neon-like "UV fluorescence". The chemical compound excited with UV irradiation emits



**Figure 1.** Trichobacteriosis axillaris. (A) Clinical presentation with creamy whitish segmentally “thickened” hair of the axilla. (B) Non-contact polarized dermatoscopy showing yellowish-whitish bacterial conglomerates wrapping the hair. (C) Non-contact ultraviolet-induced fluorescence dermatoscopy featuring prominent yellowish-greenish luminescence confirming the diagnosis. (Xiaomi Mi 10T Pro 5G, Xiaomi, paired with DL5, Dermlite; ×10 magnification).

new (usually longer) wavelength, that can belong to the visible light spectrum [4]. To the best of our knowledge, our report is the first report on the use of UVFD in TA.

## Case Presentation

A 62-year-old Caucasian male presented for a routine skin check. The clinical examination of the axillary hair revealed asymptomatic thin irregular creamy yellow concretions encircling several hair shafts (Figure 1A). The detail of these concretions was more recognizable in adequate lighting and close up imaging (Figure 1B). In this case, additional non-contact UVFD (DL5, Dermlite; ×10 magnification) showed distinctive bright yellow-green excited luminescence (Figure 1C), which enabled a spot diagnosis of TA. The patient was advised to shave axillary hair, treated with 2% topical fucidic acid, and discharged without further testing.

## Conclusions

The diagnosis of TA is usually not clinically challenging. However, diagnostic difficulties arise in atypical clinical presentations or atypical locations [3]. UVFD can be used to further increase the diagnostic confidence by visualizing yellow-green luminescent conglomerates adhering to the hair shafts. This adequately rules out other clinical differential

diagnoses that do not exhibit this unique feature. Therefore, no cost-incurring and time-consuming investigations are required. The exact source of the yellow-green luminescence has not been identified yet, but it is hypothesized to originate from the admixture of the sweat and bacterial products. The utilization of UVFD, initially used for tumor margin delineation in melanoma, is expected to be further utilized in the diagnosis of multiple neoplastic, inflammatory, and infectious conditions of the skin and adnexa.

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