

## Ultraviolet-induced Fluorescence Dermatoscopy Unmasks Dermatoscopically Inconspicuous Terra Firma-Forme Dermatitis and Pityriasis Versicolor

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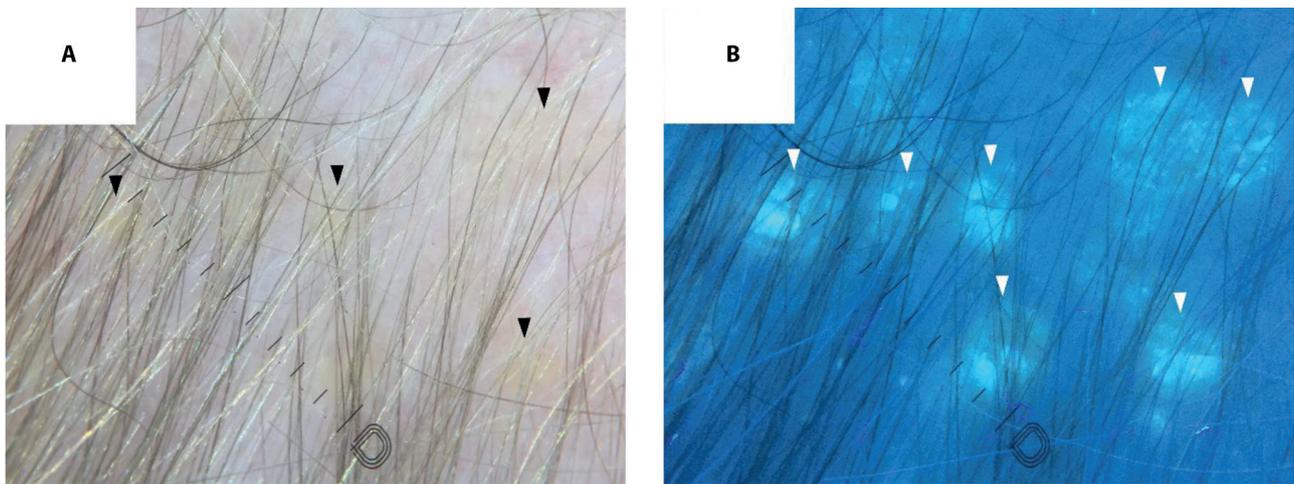
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### Introduction

Terra firma-forme dermatosis (TFFD) is an acquired skin condition characterized by poorly defined brown-gray-black patches with a dirt-like appearance [1]. It predominantly affects neck, face, trunk, ankles, and navel of children and young adults [1]. Pityriasis versicolor (PV) is a superficial fungal skin infection usually affecting the trunk of young

adults and manifesting as hypo-, normo-, or hyperpigmented macules with a fine scale [2]. *Malassezia* is the culprit microorganism, with the scalp serving as an asymptomatic reservoir of the fungus [1].

Dermatoscopically, TFFD presents as large brown polygonal scales or clods, divided by the skin furrows or of linear arrangement, resembling a mosaic pattern [1], whereas PV appears as a depigmented, erythematous, or hyperpigmented



**Figure 1.** Isolated pityriasis versicolor (PV) of the scalp in a young boy. (A) Conventional non-contact polarized dermoscopy shows a few tan structureless areas with no evident dermoscopic clue to PV (black arrowheads). (B) Ultraviolet-induced fluorescence dermoscopy reveals multiple light greenish roundish folliculocentric scaly areas featuring typical inward scaling (white arrowheads).

structureless area featuring a fine scale with a single or double free edge following the skin markings and perifollicular scaling [2]. Under ultraviolet-induced fluorescence dermoscopy (UVFD) TFFD displays bright polygonal outlines of the scales [3], whereas PV is characterized by perifollicular greenish fluorescence, light green scaling with an inner free edge and along the skin markings in hypopigmented lesions, or dark structureless area deprived of cutibacterial fluorescence of porphyrins (blackout areas) in hyperpigmented lesions [2-3].

## Case Presentation

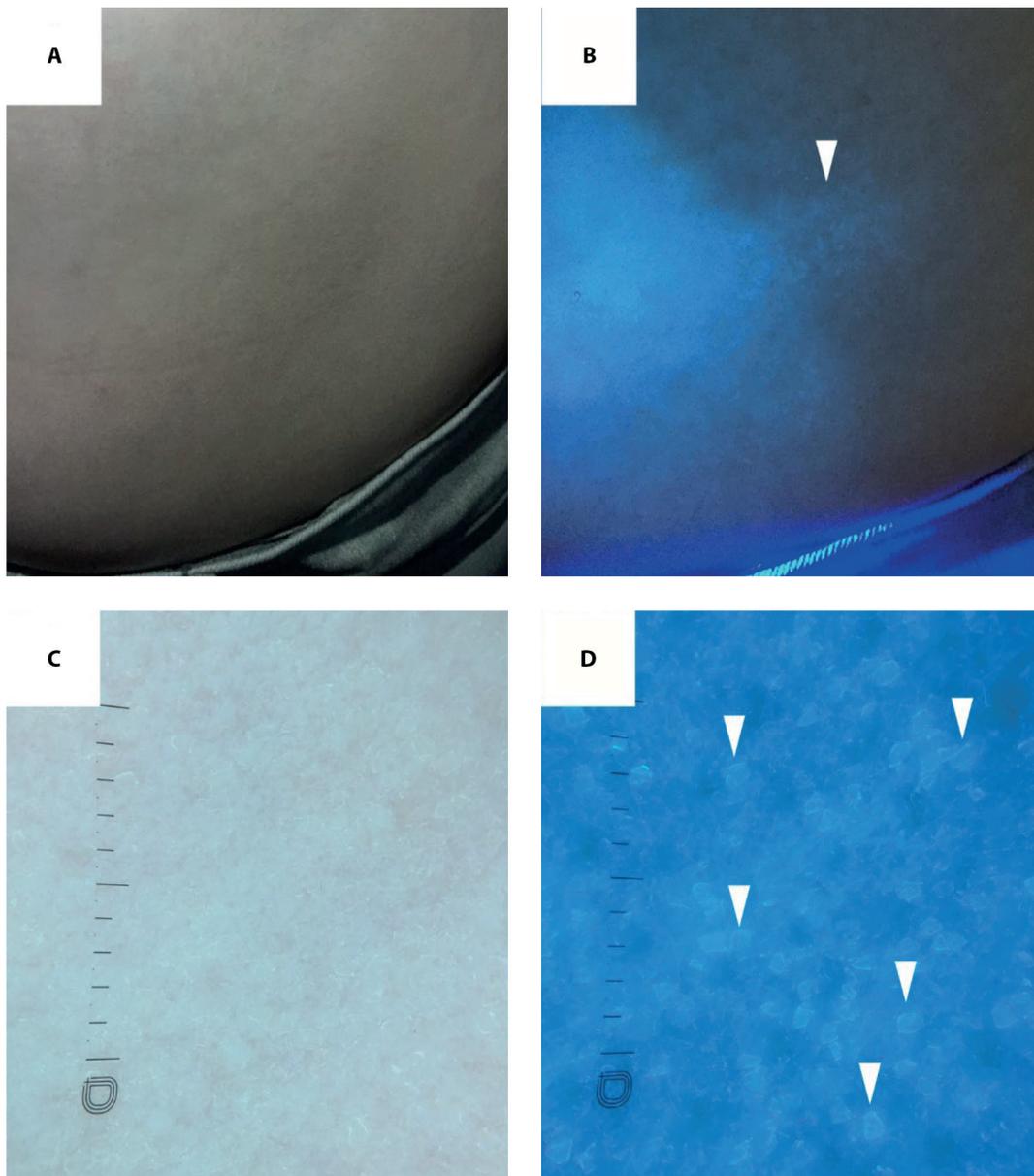
A 9-year-old boy presented at the dermatology outpatient clinic with tan macules of pityriasis versicolor at the frontotemporal region that were assessed using dermoscopy and ultraviolet-induced fluorescence dermoscopy (UVFD) (DermLite DL5, US). While contact polarized dermoscopy of the brown plaques of the scalp did not show any characteristic clue to the diagnosis (Figure 1A), UVFD displayed multiple light greenish roundish folliculocentric scaly areas featuring a scale with a free inner edge (Figure 1B). No other site was affected. During the examination, Woods light inadvertently directed at the boy's flank evoked bright fluorescence of otherwise clinically inconspicuous area

(Figure 2A-B). Conventional non-contact polarized dermoscopy did not detect any specific clue to TFFD, whereas a bright rim of polygonal scales typical of TFFD was visualised with UVFD (Figure 2C-D).

“Alcohol wipe” test was used to confirm the diagnosis and clearance of TFFD. Direct microscopic examination of the scalp skin scrapings confirmed the presence of “spaghetti and meatballs” appearance of *Malassezia*. The patient underwent 4-week treatment with 1% ciclopirox olamine shampoo (twice a week). Complete clinical clearance was confirmed at the end of the treatment.

## Conclusions

Here we present an unusual manifestation of two relatively common diseases in a young boy: isolated PV of the scalp and normochromic TFFD of the flank. UVFD is a relatively novel dermoscopic modality based on the Stokes shift phenomenon that can complement clinical and dermoscopic examination. In this process, high-energy UV light induces visible light fluorescence of particular chromophores – in our clinical scenario, pithyrialactone and keratin, respectively [2-4]. In both conditions UVFD was able to identify specific clues to the diagnosis in clinically and dermoscopically inconspicuous skin.



**Figure 2.** Terra firma-forme dermatosis (TFFD) in the same young boy inadvertently detected with Woods lamp. (A) Clinically inconspicuous flank. (B) Examination with Woods lamp uncovers an area of bright fluorescence on a flank (white arrowhead). (C) Conventional non-contact polarized dermatoscopy reveals no characteristic clue to any disease. (D) Ultraviolet-induced fluorescence dermatoscopy produces a bright rim of polygonal scales typical for TFFD (white arrowheads).

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