VIA MEDICA

CASE REPORT

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Ultraviolet-induced fluorescence dermatoscopy facilitates the diagnosis of terra firma-forme dermatosis

Agnieszka Pszczółkowska[1], Linda Tognetti[2], Magdalena Żychowska[1]

[1]*Department of Dermatology, Institute of Medical Sciences, Medical College of Rzeszow University, Rzeszów, Poland*
[2]*Dermatology Unit, Department of Medical, Surgical and Neurosciences, University of Siena, Siena, Italy*

ABSTRACT

Terra firma-forme dermatosis (TFFD) is a benign, underdiagnosed, pigmentation disorder presenting with brownish scales resembling dirty skin. The lesions are resistant to washing with common soaps and may be removed with 70% alcohol rub, which also constitutes the diagnostic test of TFFD, referred to as the Skin Modified by Alcohol Rubbing Test (SMART). The article presents a case of a 16-year-old boy, in whom TFFD was diagnosed during a routine nevi check-up using ultraviolet-induced fluorescence dermatoscopy (UVFD). Furthermore, the paper discusses the clinical utility of UVFD in the diagnostic process and treatment assessment.

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Keywords: UV-dermoscopy, UV-dermatoscopy, ultraviolet-induced fluorescence dermoscopy, terra firma-forme dermatosis

CASE PRESENTATION

A 16-year-old boy presented to the outpatient dermatology clinic for a routine nevi check-up. During the examination, attention was drawn to irregular spots of brown scales on the frontal parts of the trunk (Fig. 1A). Under polarized dermatoscopy polygonal light-brown scales, arranged in a "stone pavement" pattern, were observed (Fig. 1B, C). Ultraviolet-induced fluorescence dermatoscopy (UVFD) showed numerous bright white-blue polygonal structures arranged in a mosaic (Figure 1D, E). Interestingly, the extent of skin involvement evaluated with UVFD was greater than it was visible with the naked eye or polarized dermatoscopy. The lesions were easily removed with a 70% isopropyl alcohol rub.

TEACHING POINT

Terra firma-forme dermatosis (TFFD) is a rare, benign condition presenting with brownish scales resembling dirty skin. The first case report of TFFD was published by Duncan, Tschen and Knox in 1987 [1]. The origin of the disease name comes from the Latin phrase "terra firma" meaning dry land, which correlated with appearance of the skin lesions. A lack of knowledge about the condition frequently leads to delayed diagnosis, when in fact the disorder is more prevalent than most clinicians expect. TFFD was reported to affect both sexes equally with predominance in the paediatric population (mean age of 10.4 years) [2, 3].

The pathogenesis of TFFD has not been fully investigated. However, many authors suggest that delayed maturation of keratinocytes and accumulation of dirt and melanin may lay at the bottom of the condition aetiology [4, 5].

The TFFD lesions are asymptomatic, typically distributed on the neck and trunk [5] and characterized by the presence of brown-grey, hyperpigmented patches and plaques, which are smooth, velvety or scaly on palpation [4]. The lesions are resistant to washing with common soaps and may be removed with 70% alcohol rub, which also constitutes the diagnostic test of TFFD, referred to as Skin Modified by Alcohol Rubbing Test (SMART) [6].

The differential diagnoses include a wide range of hyperpigmented skin lesions as observed in post-inflammatory hyperpigmentation, confluent and reticulate papillomatosus of Gougerot and Carteaud, *dermatitis neglecta*, *pityriasis versicolor*, *acanthosis nigricans*, dirty neck syndrome, ashy dermatosis and others [2–5].

Histopathological examination shows prominent lamellar hyperkeratosis, papillomatosis, epidermal acantholysis and insignificant or absent dermal inflammation, however, skin biopsy is not necessary for making a proper diagnosis [2, 3]. Besides, SMART, dermatoscopy and UVFD examination

Address for correspondence:
Agnieszka Pszczółkowska MD, Department of Dermatology, University of Rzeszow, Szopena 2, 35–055 Rzeszów, Poland,
e-mail: apszczolkowska@int.pl

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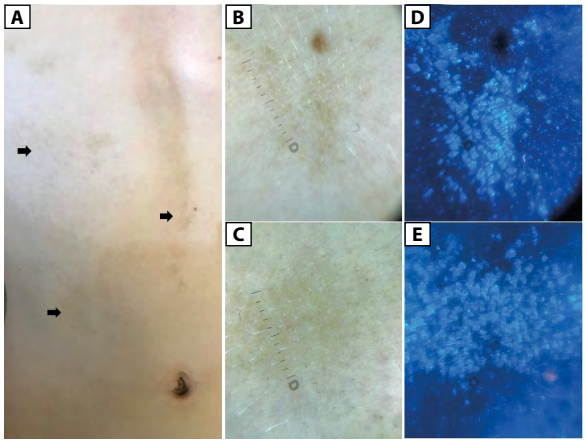

Figure 1. Clinical presentation — irregular brownish scales (*black arrows)* on the chest and abdomen (**A**); polarized dermatoscopy (DermLite DL5, ×10) showing discrete light brown polygonal scales (**B**, **D**); Ultraviolet--induced fluorescence dermatoscopy (365 nm, DermLite DL5, ×10) displaying bright whitish-bluish fluorescence of the polygonal structures (**C**, **E**). Noteworthy, the extent of polygonal structures visualized by UV-induced dermatoscopy was much greater than it was visible by examination with the naked eye or polarized dermatoscopy

may facilitate the diagnosis without the necessity to perform a skin biopsy.

Dermatoscopic features observed in TFFD include 3 types of pattern: "polygonal brown clods arranged in a mosaic pattern", seborrheic keratosis-like pattern and perifollicular hyperpigmentation [7]. Recently, chalk-white fluorescence of the lesions under Wood's lamp has been reported in the literature [8, 9]. A similar phenomenon (bright white-blue fluorescence) was observed under UVFD. It may be another useful diagnostic clue for TFFD. Moreover, UVFD may help to precisely evaluate the extent of skin involvement and to detect residual, subclinical lesions after treatment with alcohol rub.

CONCLUSIONS

Ultraviolet-induced fluorescence dermatoscopy should be considered a promising tool that may facilitate the diagnostic process and prevent unnecessary biopsies in TFFD. However, further studies are required to confirm the utility of this novel technique.

Article information and declarations

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Author contributions

Conceptualization — AP and MŻ; writing: original draft preparation — AP, LT, MŻ, review — AP, LT, MŻ; writing: editing — MŻ; visualization — MŻ; supervision — MŻ. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declared no conflicts of interest.

Ethics statement

Case report, consent of the bioethics committee is not required.

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Supplementary material

None.

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