Dermatology Practical & Conceptual

# Two New Dermoscopic Features of Trichostasis Spinulosa and Its Reflectance Confocal Microscopic Appearance

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**Key words:** Trichostasis spinulosa, dermoscopy, reflectance confocal microscopy

**Citation:** Lan X, Sun J, Jiang Y, Wang X. Two New Dermoscopic Features of Trichostasis Spinulosa and Its Reflectance Confocal Microscopic Appearance. *Dermatol Pract Concept.* 2023;13(1):e2023026. DOI: https://doi.org/10.5826/dpc.1301a26

**Accepted:** April 7, 2022; **Published:** January 2023



**Funding:** None.

**Competing interests:** None.

**Authorship:** All authors have contributed significantly to this publication.

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## Introduction

Trichostasis spinulosa (TS) is a relatively common yet unrecognized follicular disorder characterized by the retention of numerous vellus hairs surrounded by a hyperkeratotic dilated hair follicle [1]. The main dermoscopic structures of TS have been identified previously [2]. Herein, we identify two new dermoscopic features of TS and report its reflectance confocal microscopy (RCM) characteristics for the first time.

## Case Presentation

A 25-year-old woman complained of progressive multiple, black-colored keratotic lesions with mild pruritus involving her trunk for 2 years. Her medical history was otherwise unremarkable. Physical examination revealed numerous black, firm, discrete, 0.2-0.5 mm follicular keratotic papules on the abdomen and back (Figure 1, A and B). Histopathology revealed hyperkeratosis with follicular plugging, a dilated infundibulum containing multiple vellus hairs enveloped in keratinous material (Figure 1C). The microscopic examination illustrated a cluster of vellus hairs embedded in keratinous material from an extracted plug (Figure 1D). Dermoscopy demonstrated a bundle of vellus hairs projecting together (Figure 2A) and keratotic plugs in some dilated follicles. In addition, dark concentric hair forming a circle under the horny layer (circle hair) and hairs rolled in spiral with peripilar casts (rolled hair) were also seen (Figure 2, B and C). RCM showed dilated follicular openings were consisted of moderate-refractive keratotic substitutes and/or hyper-refractive numerous vellus hairs (Figure 2, D and E). Based on the above findings, the diagnosis was consistent with TS.

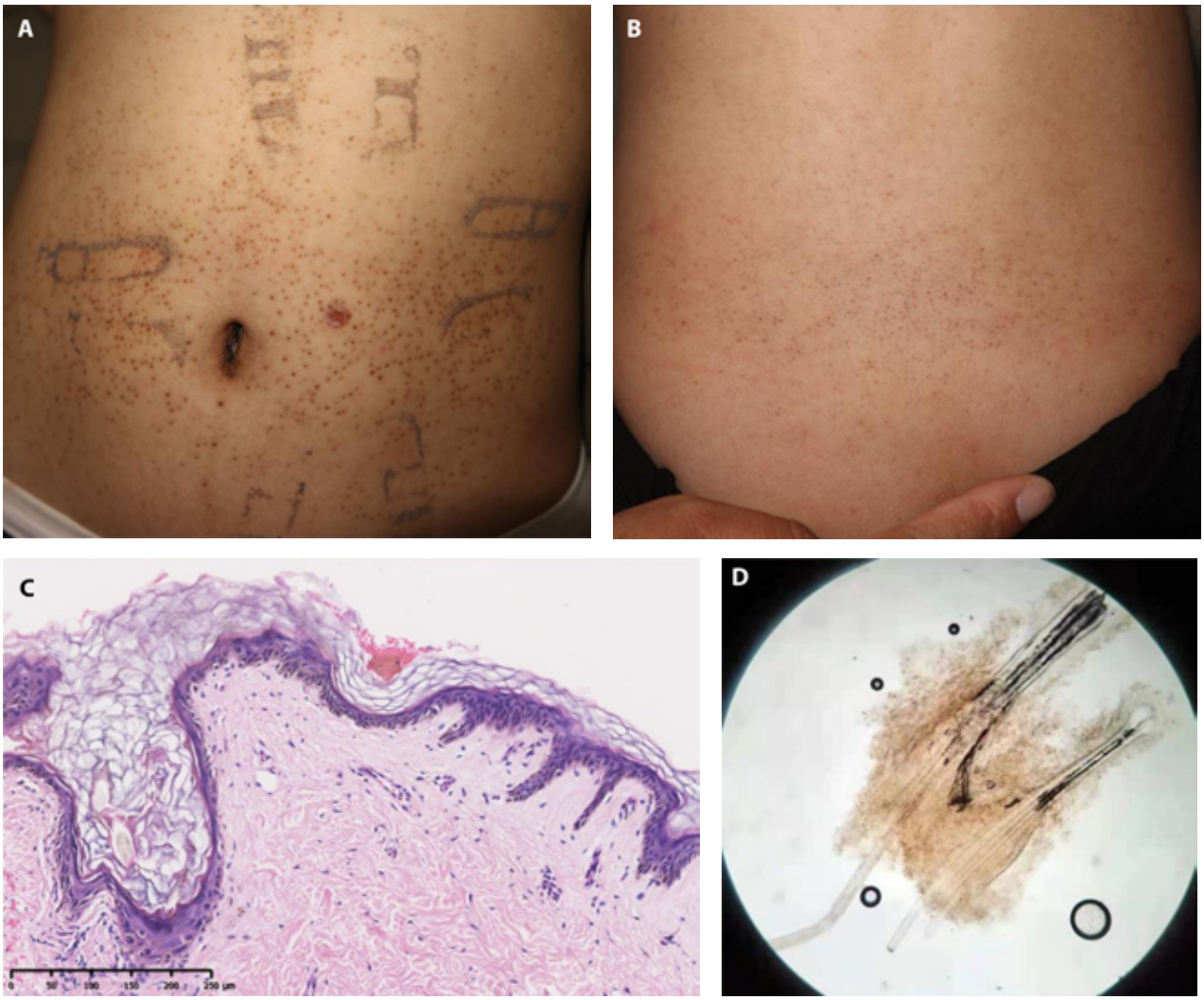


**Figure 1.** (A,B) Multiple dark-brownish keratotic follicular papules distributed on the abdomen and back. (C) Histopathology revealed several vellus hairs in follicular plugging (H&E x100); (D) Microscopic examination showed several hair shafts blocked in one follicle (x100).

## Conclusions

Two clinical variants of TS have been proposed, namely non-pruritic and pruritic type [3]. We present a patient classified as pruritic type which usually affects young adult characterized by multiple itchy follicular papules mainly on the trunk and upper limbs. The diagnosis of TS is usually based on clinical presentation, microscopy and sometimes on histopathology. However, dermoscopy is the most helpful tool in clinical practice. The main dermoscopic characteristics of TS, including tufts of short, vellus hairs emerging together and keratotic plugs of some follicular openings, were noticed in our patient as previously described [2]. Furthermore, we observed two new dermoscopic findings of TS: circle hair and rolled hair. Circle hair is almost exclusively found incidentally on the trunk and upper legs of overweight men, where they are interspersed with normal hairs [4]. Rolled hair is associated with many conditions such as ichthyosis, keratosis pilaris, xerosis, neurodermatitis, and palmoplantar keratoderma [5]. Some authors attributed rolled hair to mechanical trauma resulting from repeated and vigorous rubbing.

RCM is a high-resolution imaging technique which allows in vivo visualization of upper layers of skin structures. However, the RCM characteristics of TS have not been described so far. In this study, we observed RCM features as moderate-refractive and hyper-refractive structures among

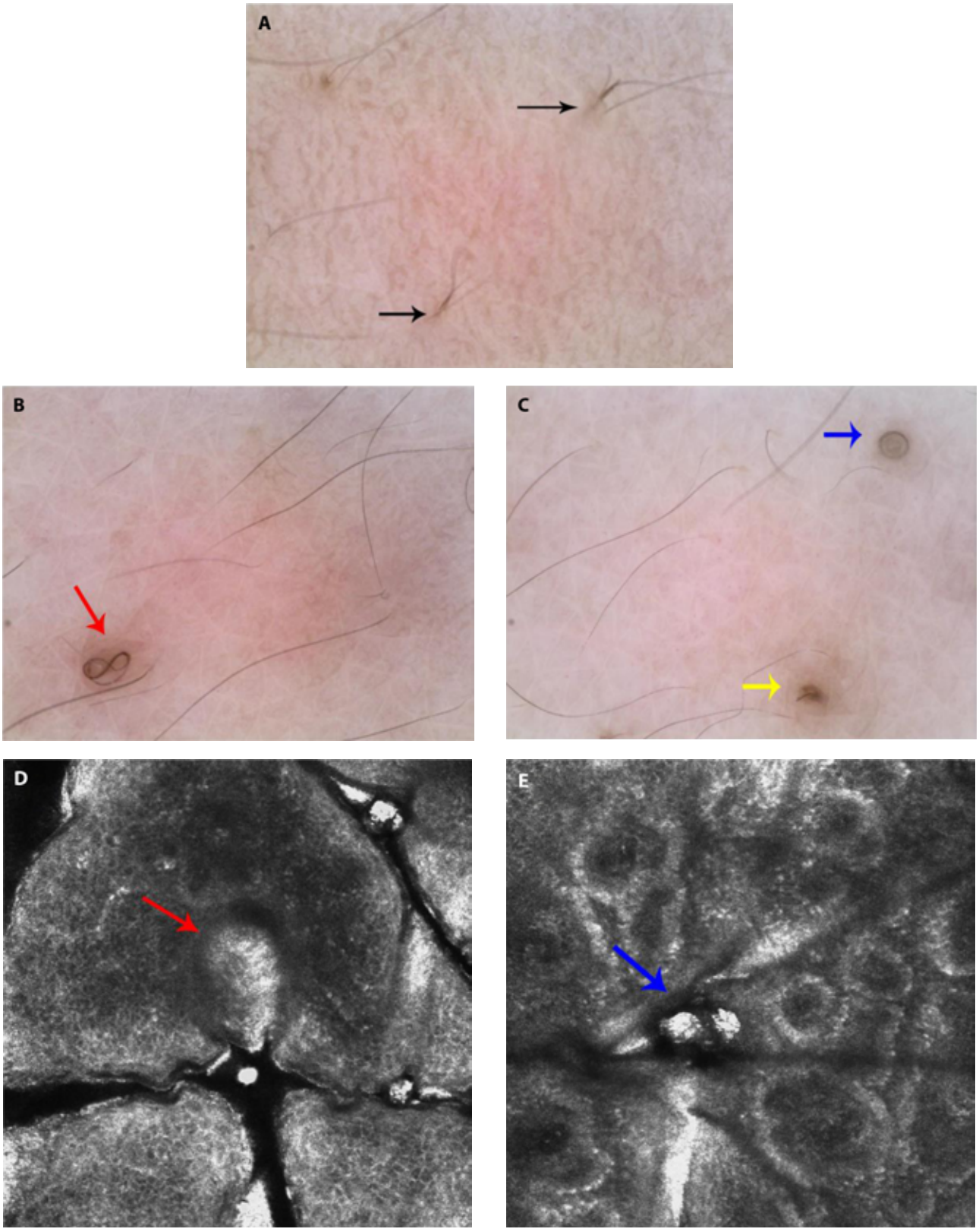


**Figure 2.** (A-C) Dermoscopy demonstrated tufts hairs (black arrows), rolled hairs (red arrows), circle hairs (blue arrows), and blackhead-like structures (yellow arrows) (x10). (D-E) reflectance confocal microscopy illustrated an oval-shaped moderate-refractive structure (red arrows) in the epidermis and hyper-refractive piliform structures (blue arrows) among dilated follicular openings (basic image, 0.5mm × 0.5mm).

dilated follicular openings, corresponding well to histologic horny follicular plugs and tufts vellus hairs, respectively.

In conclusion, we have proposed two new dermoscopic signs of TS and its RCM features. These techniques, combined with the clinical findings, may be useful to diagnosis of TS, possibly limiting the need for skin biopsy.

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