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Short title: Trichilemmal cyst with dermatofibroma-like features

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We report here a case of TC showing both dermoscopic and histopathologic features similar to dermatofibroma (DF).

A 71-year-old Japanese woman was referred to our department for evaluation of a 1-year history of nodule on her leg. Physical examination revealed a brownish nodule, 9 × 6 mm in diameter, located on the right lower leg (Fig. 1a). Dermoscopic examination showed a central yellowish-white patch with a peripheral pigment network (Fig. 1b).

Histopathological examination showed an intradermal cyst that contained keratinous materials. The cells in the peripheral layer of the wall exhibited a palisading arrangement without a granular layer (Fig. 1c and 1d). Elongation of rete ridges and hyperpigmentation in the epidermis were also observed (Fig. 1e), and there was an increase in dermal collagen bundles with inflammatory cells and multinucleated histiocytes around the cyst reminiscent of DF. Immunohistochemically, the inflammatory cells around the cyst were positive for CD10 (Fig. 1f) and CD68 (Fig. 1g).

Finally, a diagnosis of trichilemmal cyst with DF-like features was made.

TC mostly occurs on the scalp, but about 1.4% of TCs were seen on extremities.¹

Histopathological findings of our case were typical for TC with DF-like features. To our knowledge, there has been no report of TC with DF-like features in both histopathologic and dermoscopic aspects.

Immunohistological staining with CD10 and/or CD68 is usually useful for diagnosis of DF.^{2, 3} When TC undergoes partial or complete disintegration, an endogenous foreign-body reaction is induced. We considered that the DF-like features were derived from infiltration of inflammatory cells and fibroplasia.

With respect to dermoscopic examination, there has been only one case in which dermoscopic findings of TC was reported. Gencoglan et al.⁴ reported that diffuse homogeneous blue pigmentation with a minimal reddish hue was seen in TC on the arm. They considered that these features were due to homogeneous dense keratin materials, so-called Tyndall effect.⁴ However, dermoscopic findings may vary by anatomical location and depth of the tumor.

Dermoscopic findings of DF are well-known. The most common dermoscopic pattern is a central white patch with a delicate pigment network. The former corresponds to pronounced fibrosis within the papillary dermis, and the latter is a result of hyperpigmentation of basal cells in the epidermis.⁵

In our case, dermoscopic examination showed a pattern similar to that of DF. It is likely that the central white area was derived from keratinous materials and inflammatory cells around the cyst. The delicate pigment network at the periphery corresponded to hyperpigmentation in the basal layer. No reddish hue was seen in our case.

TCs are commonly observed on the scalp, but there have been few reports on dermoscopic observations of TC. In our case, the clinical features were not typical of TC. Dermoscopy may provide additional clues for a diagnosis in non-typical skin tumors.

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Figure Legends

Figure 1. (a) A brownish nodule on the right lower leg. (b) The lesion showed a central white patch with a peripheral delicate pigment network by dermoscopy. (c, d) The wall cells of the peripheral layer showed trichilemmal keratinization (haematoxylin & eosin (HE), original magnification $\times 20$ and $\times 100$). (e) Dermatofibroma-like features were seen (HE $\times 20$ and $\times 100$). (f, g) Immunostaining was positive for CD10 and CD68 ($\times 100$).

