Dermoscopy of Cylindroma in Fitzpatrick Type IV Skin: A Case Report and Review of Literature

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Cylindromas are benign adnexal tumors commonly occurring in the head and neck region. Dermoscopy of cylindroma has not been studied in detail and the evidence in this regard is quite scarce. We describe dermoscopic features in an elderly woman of Fitzpatrick type IV skin with multiple cylindromas along with a review of the literature.

A 62-year-old female presented with multiple swellings involving the face, scalp, and chest from the past 6 years. The swellings were slow-growing and asymptomatic. There was no family history of similar lesions. Clinical examination revealed multiple pinkish to skin-colored discrete and coalescent soft to firm nodules involving the forehead, nose, ears, and cheeks [Figure 1a and b]. Solitary pinkish nodules were also seen on the scalp [Figure 1c] and anterior chest [Figure 1d]. Non-contact polarized dermoscopy using DermLite™ DL3 (3Gen Inc., San Juan Capistrano, CA, USA) of the facial lesions revealed a pink-white background, white structureless areas, yellow-brown structureless areas, linear serpentine and branching vessels, and brown pigmentation in the form of lines — individually and forming the network, and structureless areas. The pigmented lines showed a conspicuous radial pattern around the follicular openings [Figure 2a and b]. Dermoscopy of the solitary nodules on the scalp and chest revealed a pink-white structureless background, white structureless areas, linear serpentine, and branching vessels—predominantly peripheral in location and traversing towards but not crossing the center. Pigmentation was seen in the form of fine brown lines [Figure 3]. Histopathology revealed features typical of cylindroma characterized by dermal aggregates of basaloid cell nests along with hyaline eosinophilic matrix in between the basaloid cells within the nests and surrounding them. The overlying epidermis showed irregular rete ridges with increased melanization of the basal layer [Figure 4].

Cylindromas are benign adnexal tumors, occurring either as solitary or multiple lesions, commonly seen in the head and neck region and predominantly affecting females. Multiple lesions may be a part of Brooke–Spiegler syndrome or multiple cylindromatosis both of which are autosomal dominant disorders associated with *CYLD* gene mutation. Histologically, cylindroma is characterized by dermal aggregates of oval and angular cell nests composed of basaloid cells in a "jigsaw puzzle" fashion enmeshed in a fibrous stroma. Also noted is the hyaline eosinophilic matrix dispersed in between the basaloid cells and in between the nests. Although histological features of cylindroma are quite reminiscent of basal cell carcinoma (BCC), frequent arising of the cellular nests from the epidermis, peripheral palisading of the nuclei, retraction artifact, a mucinous stroma, and frequent presence of necrosis and mitotic figures may help to differentiate BCC from cylindroma. Malignant transformation is rare and surgical excision is curative.[1,2]

Dermoscopy of cylindroma has not been studied in vast and only a handful of evidence in the form of case reports is available from the literature. Table 1 provides the dermoscopic observations in cylindroma reported thus far in the literature, all of which are single case reports of solitary lesions involving the head in lighter skin phototypes. Dermoscopic features commonly noted in these reports

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Table 1: Dermoscopic features of cylindroma

Authors	Study type	Dermoscopic observations
Cabo *et al*.[3]	Case report	Background of pink coloration with arborizing telangiectasia and ulceration, yellowish non-homogenous area, and blue dots and globules
Lallas *et al*.[6]	Case report	Blurred light-red to pinkish arborizing telangiectatic vessels, with a relatively small number of branches on a homogenous white-pinkish background, mainly at the periphery of the lesion
Cohen *et al*.[4]	Case report	Arborizing telangiectasia and several scattered white globules on a white to salmon pink background
Senarega *et al*.[5]	Case report	The salmon-pink area containing linear vessels on the lesional surface and homogenous blue structures at the lesional periphery
Our study	Case report	Pink-white background, white and yellow-brown structureless areas, predominantly peripheral linear serpentine and branching vessels, and brown pigmentation in the form of radial lines around the follicular openings, network pattern, and structureless areas

Figure 1: (a and b) Multiple pinkish to skin-colored discrete and coalescent nodules involving the forehead, nose, ears, and cheeks. Solitary pinkish nodules over the (c) scalp and (d) chest

include a pink-white or salmon-pink background and predominantly peripheral linear arborizing vessels.[3–6] These features were also observed in our case. Regarding the other features, Cabo *et al*. observed yellowish non-homogenous areas attributable to hyperkeratosis, and Cohen *et al*. observed multiple scattered white globules.[3,4] We noted yellow-brown and white structureless areas in our case. Blue dots and globules were noted by Cabo *et al*. and Senarega *et al*.[3,5] The case reported by Senarega *et al*. is actually that of spiradenocylindroma and the blue structures possibly represent the spiradenoma component of the tumor.[7] No such features were evident in our case, as well as in those of Cohen *et al*.[4] and Lallas *et al*.[6] Lallas *et al*. opine that the blue structures may not be a consistent feature of cylindroma. However, there is no appropriate amount of evidence to support or refute this view and further studies are needed.

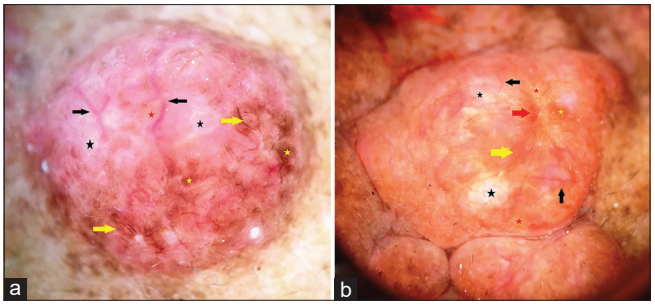

Figure 2: Polarized dermoscopy shows predominantly peripheral linear serpentine and branching vessels (a–b, black arrows), white structureless areas (a–b, black stars), yellow-brown structureless areas (a–b, red stars), and brown structures in the form of lines (a–b, yellow arrows), network pattern (b, red arrow) and structureless areas (a–b, yellow stars) over a pink-white background. [×10]

Based on the findings of arborizing vessels and blue structures, nodular BCC is probably the main differential diagnosis that needs to be considered. In addition to the features described above by Cabo *et al*., they also observed ulceration and hence suggested the inclusion of cylindroma among the differential diagnoses for BCC.[3] Lallas *et al*. however opined that, although arborizing, location of the vessels at the periphery of the lesion, fewer branching, and light-pink color (as opposed to bright red color in BCC) may help to differentiate them from the vascular patterns of nodular BCC. They are also of the opinion that the homogenous pink-white background is not a very common attribute of nodular BCC.[6] We tend to agree with this view as nodular BCC commonly exhibits a translucent background.

Apart from the blue dots and globules, no other pigmented structures or patterns have been described in any of the previous reports. Our case exhibited brown pigmented structures and patterns as described above. These features could possibly be attributable to the irregular orientation of the rete ridges owing to the nodular growth of the tumor together with increased melanization of the basal layer as observed on histology. These brown pigmented structures and patterns are different from those seen in BCC, such as the spoke-wheel structures, concentric structures, and leaf-like structures, which are considered highly specific for this tumor.[8]

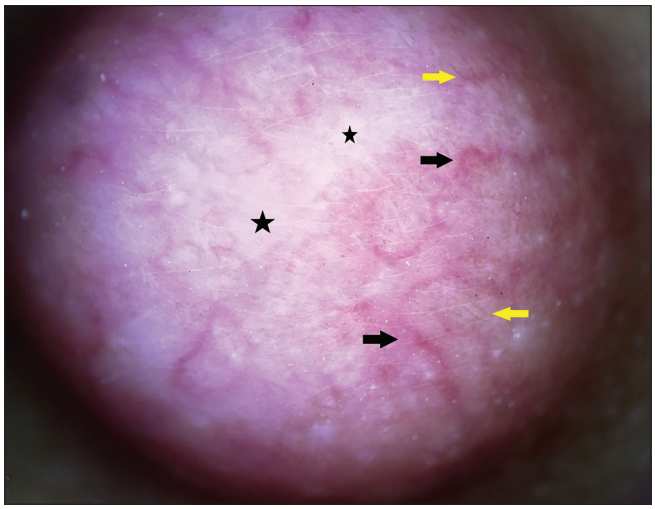

Figure 3: Polarized dermoscopy of the lesion on the chest reveals peripheral linear serpentine branching vessels (black arrows), white structureless areas (black stars), and thin brown lines (yellow arrows) over a pink-white background [×10]

To conclude, literature on dermoscopy of cylindroma is quite limited, and based on the available data, predominantly peripheral arborizing vessels on a homogenous pink-white background appear to be the reasonable dermoscopic features assisting in the diagnosis in conjunction with the clinical features. In comparison with the previous reports, our case had multiple lesions, showed features common to all the previous reports (peripheral arborizing vessels and pink-white background), and certain features hitherto not described (brown pigmentation in the form of lines, radial lines around the follicular openings, network pattern and structureless areas). Further studies with appropriate design and sample size are necessary to delineate any consistent and reproducible dermoscopic features, cylindroma may exhibit.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her names and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

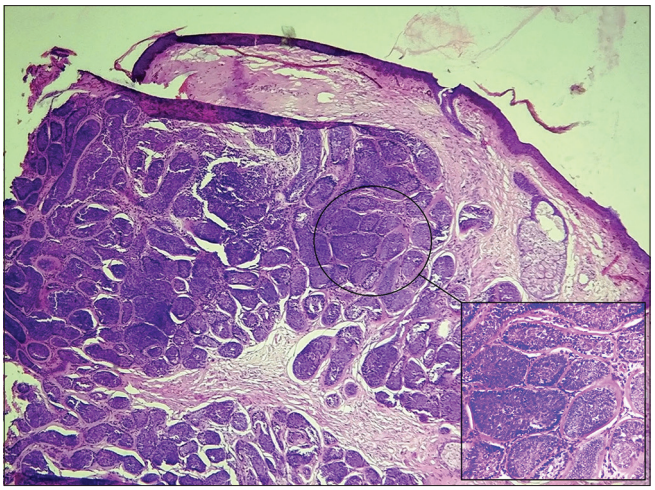

Figure 4: Histopathology shows multiple dermal aggregates of cellular nests composed of basaloid cells. Also seen is the hyaline eosinophilic matrix dispersed in between and around the cellular nests (inset) [H and E, ×10; inset, ×40]

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Conflicts of interest

There are no conflicts of interest.

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