DERMATOLOGY PRACTICAL & CONCEPTUAL
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Solitary trichoepithelioma in an 8-year old child: clinical, dermoscopic and histopathologic findings

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Key words: trichoepithelioma, basal cell carcinoma, diagnosis, dermoscopy, histopathology

Citation: Lazaridou E, Fotiadou C, Patsatsi A, Fotiadu A, Kyrmanidou E, Kemanetzi C, Ionnides D. Solitary trichoepithelioma in an 8-year-old child: clinical, dermoscopic and histopathologic findings. Dermatol Pract Concept. 2014;4(2):11. http://dx.doi.org/10.5826/dpc.0402a11

Received: July 9, 2013; **Accepted:** December 26, 2013; **Published:** April 30, 2014

Funding: None.

Competing interests: The authors have no conflicts of interest to disclose.

All authors have contributed significantly to this publication.

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ABSTRACT Solitary trichoepithelioma (TE) is a rare, benign tumor of follicular origin that in certain cases is difficult to differentiate from basal cell carcinoma (BCC). We report the case of an 8-year-old girl with a pale pink, soft lesion on the neck. The clinical image of the lesion was equivocal, while some dermoscopic findings—blue-gray globules and arborizing vessels—could not exclude the presence of BCC from the differential diagnosis, although that would have been a very unlikely case considering the age of the patient. The histopathologic examination established the diagnosis of TE. Given the occasion of this challenging case we try to list the key clinical, dermoscopic and histopathological characteristics of TE and BCC in order to elucidate the differential diagnosis of these two entities.

Case presentation

We report the case of an 8-year-old girl who was referred to our pigmented lesions clinic exhibiting a pale pink lesion (almost 1 cm in diameter) with a soft, lobulated surface (Figure 1). This lesion had been present on the neck of the child for a year but during the previous six months had enlarged. The personal and family history of the patient was negative for the presence of other similar lesions. The dermoscopic examination, performed at that time with a handheld dermatoscope (Dermlite II HR PRO by 3GEN), revealed a translucent white background with blue-gray globules at the periphery and very subtle arborizing vessels (Figure 2). These features could not exclude the possibility of basal cell carcinoma (BCC) although that would have been a very unlikely diagnosis in an 8-year-old child. The lesion was surgically excised. The histopathologic examination undoubtedly established the diagnosis of trichoepithelioma (TE) and was characterized by the following findings: lobules of basaloid cells were arranged within the lamina propria, with no connection to the epidermis (Figure 3). At the periphery of the lobules, the neoplastic cells displayed characteristic palisad-

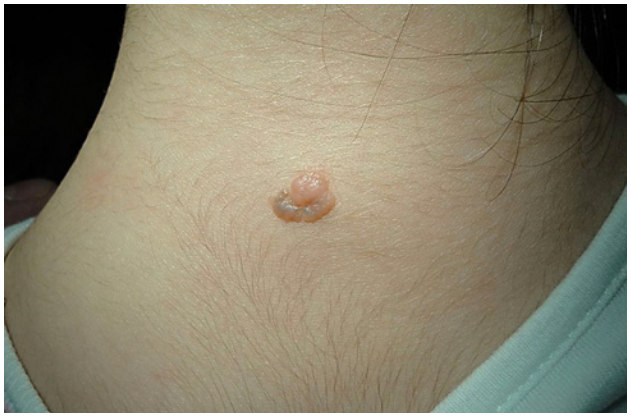

Figure 1. Clinical image of the lesion. [Copyright: ©2014 Fotiadou et al.]

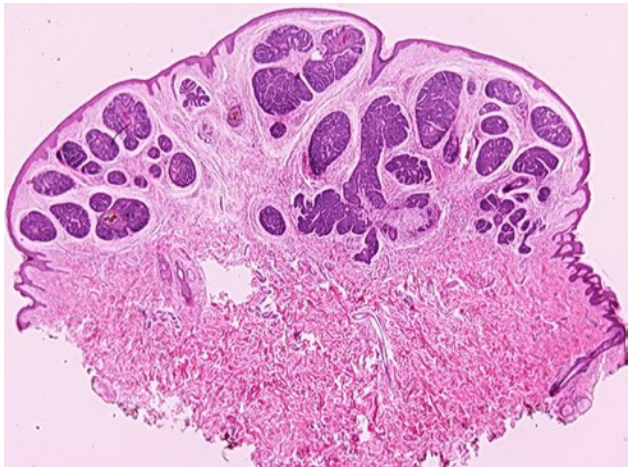

Figure 3. Histopathologic image of the lesion (hematoxylin & eosin X20) showing lobules of basaloid cells not connected to the epidermis. [Copyright: ©2014 Fotiadou et al.]

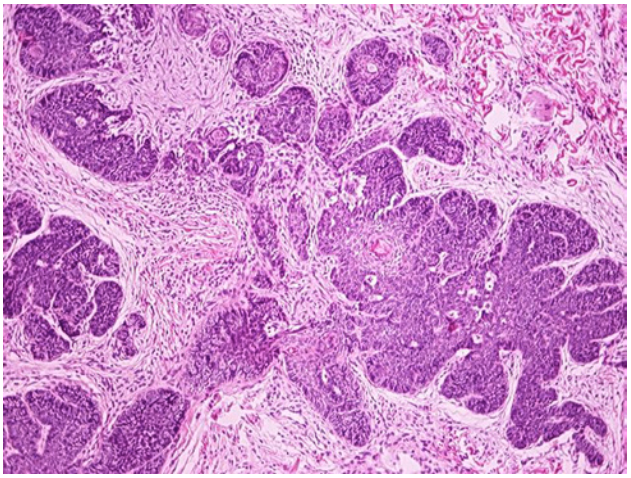

Figure 5. A conspicuous perilobular connective tissue sheath is present focally (H&E X100). [Copyright: ©2014 Fotiadou et al.]

ing, while in central areas small keratinous cysts were seen (Figure 4). Focally, there was prominent fibroplastic stroma with moderate cellularity (Figure 5).

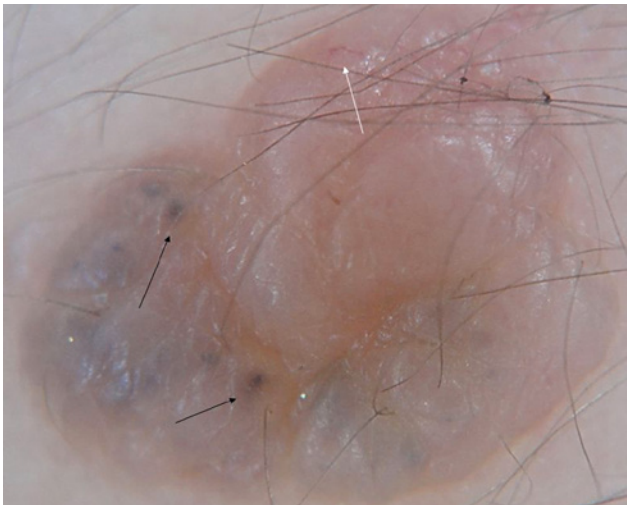

Figure 2. Dermoscopic image of the lesion showing blue-gray dots at the periphery (black arrows), subtle arborizing vessels (white arrows) and white-translucent background (Dermlite II HR PRO by 3GEN). [Copyright: ©2014 Fotiadou et al.]

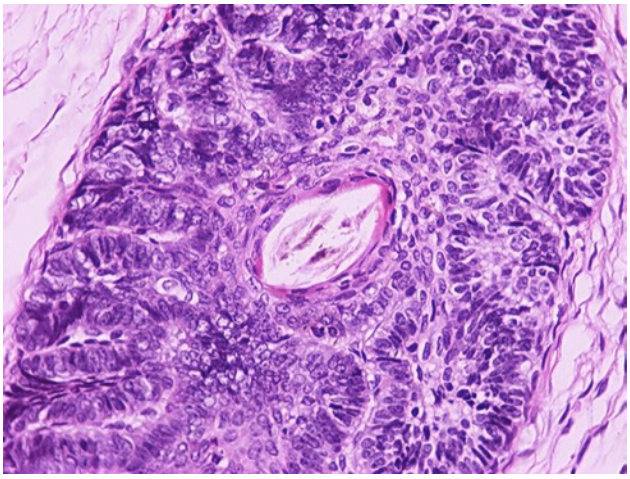

Figure 4. Small keratin cysts and peripheral palisading are characteristic features of the tumor cell lobules (H&E X400). [Copyright: ©2014 Fotiadou et al.]

Discussion

TE is a rare, benign dermal tumor of follicular origin [1]. Three major variants have been described in the literature, namely solitary, multiple and desmoplastic TE [1] The solitary subtype is commonly found in young adults. It is usually located on the central face and on the perinasal area in particular. This site predilection could be attributed to the high concentration of pilosebaceous units in this area. However, on rare occasions TE can acquire a diameter of ≥1 cm and can be situated on the neck, scalp or trunk [2]. Sometimes, TE can closely resemble BCC. The occurrence of TE and/or BCC in childhood, although it has been reported in anecdotal cases, is very uncommon [3]. The key clinical, dermoscopic and histopathologic characteristics of TE and BCC are summarized in Table 1.

TABLE 1. Clinical, dermoscopic and histopathologic characteristics of trichoepithelioma and basal cell carcinoma.

	Trichoepithelioma	Basal cell carcinoma (nodular)
Natural history and clinical picture	Young patients Usually very slow enlargement Solitary or multiple translucent skin-colored papules Sometimes show slight surface telangiectasia	Middle aged or older individuals Gradual but notable enlargement A translucent papule, yellow or pink or with a pearly appearance Telangiectatic vessels are often evident As the lesion enlarges, central erosion or ulceration develops
Dermoscopic findings	Thin arborizing vessels Pearl-white background throughout the lesion (especially in the desmoplastic variant) Sometimes multiple milia-like cysts are seen	Arborizing vessels Blue -gray ovoid nests Multiple blue-gray globules Leaf-like structures and spoke wheel areas
Histopathological features[1]	Discrete aggregations of germinative cells in a cribriform pattern Papillary mesenchymal body with hair bulb formation Pale fibrocytic stroma The epithelial—connective tissue units may be surrounded by a cleft	Large basaloid aggregations of varying shape and size form a relatively circumscribed mass Aggregations may have a jagged outline and large zones of necrosis Clefts between the germinative cells at the periphery and the adjacent altered stroma Stroma retraction artifact with mucin deposits

In this case the clinical presentation of the lesion was in favor of TE mainly due to its soft surface and to the absence of central erosion or ulceration, which usually develops in enlarging BCCs. Moreover, the young age of the patient almost excludes the diagnosis of BCC, although the relatively rapid enlargement of the lesion (6 months to 1 year) is not characteristic for TE. The dermatoscopic examination revealed several findings that could be attributed to BCC, such as some blue-gray globules and fine arborizing vessels. However these vessels, in contrast to the arborizing vessels commonly found in a nodular BCC, were very thin, few in number and were not "in focus" under dermatoscopy. The presence of blue-gray globules, which were not very evident to the clinical eye, probably corresponds on histopathology to presence of melanin within the neoplastic aggregates found in the dermis. All the above criteria taken together with the absence of other well-known dermatoscopic clues for the diagnosis of BCC, such as leaf-like structures and spoke-wheel areas, do not coincide with the typical findings in BCC. Finally, the histopathologic examination undoubtedly proved the diagnosis of TE by revealing the following characteristics: abundance of stroma relative to the neoplastic aggregates, lack of connection between the tumor lobules and the surface epithelium, presence of keratinous cysts, and finally absence of ulceration and mitoses.

In conclusion, histopathology remains the gold standard method for the differential diagnosis between TE and BCC [3,4]. The dermatoscopic criteria for TE need further investigation since only a small case series has been published until now [2]. Moreover, dermatoscopic findings must always be interpreted in light of important clinical information, such as the age of the patient and the natural history of the lesion. In that sense, our case shows that dermatoscopic criteria suggestive of the diagnosis of BCC, such as blue-gray globules and fine arborizing vessels, can also be seen in some cases of TE.

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