多發性皮下毛囊母細胞瘤

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Multiple Subcutaneous Trichoblastomas

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Trichoblastoma is a very rare trichogenic tumor. It usually presents as a solitary nodule, and multiple lesions are rarely encountered. Here we report a case of multiple trichoblastomas over the groin, buttocks, trunk, shoulders and arms of a 25 year-old man, who had noticed these slowly growing, asymptomatic subcutaneous tumors for many years. Four tumors were resected and all showed similar histologic features. They were well-circumscribed subcutaneous epithelial-mesenchymal lesions with limited follicular differentiation and broad morphologic growth patterns. We discuss previously published cases and the differential diagnosis. (Dermatol Sinica 19 : 300-304, 2001)

Key words: Trichoblastoma

毛囊母細胞瘤是一種非常罕見的成髮性腫瘤，通常以單發性結節的方式表現，多發性的病灶則較爲少見。在此我們報告一例發生於二十五歲男性病人腹股溝，臀部，軀幹，兩肩及上臂的多發性毛囊母細胞瘤；病灶持續多年，呈緩慢增大且無症狀的皮下腫瘤。所摘除的四顆腫瘤均呈現類似的病理特徵，皆是邊界完整，位於皮下，由上皮及基質構成的腫瘤，具有初步的毛囊分化，並且表現出各種不同的生長型態。我們並討論過去相關病例及鑑別診斷。(中華皮誌19 : 300-304, 2001)

INTRODUCTION

Trichogenic tumors are benign adnexal neoplasms which partially or completely recapitulate the development of hair follicles. As regards terminology, there is no consistent view to date. Headington first described these tumors and divided them into two primary groups: epithelial and mesenchymal. He further subdivided the epithelial neoplasms into three categories, trichoblastoma, trichoblastic fibroma, and trichogenic trichoblastoma, based on the level of stromal induction.[1]

In 1993, Ackerman *et al.* suggested the term "trichoblastoma" as an inclusive term for all benign cutaneous neoplasms constituted mostly by follicular germinative cells.[2] They

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proposed the two least common denominators for diagnosis of trichoblastoma: a benign neoplasm as judged by its silhouette, and composition mostly of follicular germinative cells. They also described five histologic patterns: large nodular, small nodular, cribriform, racemiform, and retiform. In this article, we report a case of multiple subcutaneous trichoblastomas or trichoblastic fibromas according to Headington's classification.

CASE REPORT

A 25 year-old man presented with many large (at least 1 cm in diameter), asymptomatic, slowly growing subcutaneous masses of varying size on the groin, buttocks, trunk, shoulders, and arms. The lesions had been present for an unknown period. On physical examination, the masses were mobile and there was no change of the overlying skin. (Fig. 1) The initial impression was lipoma or other subcutaneous tumors. Thereafter, four tumors were resected from the groin and buttock in two separate procedures.

All four tumors had a similar histologic appearance. They were pseudoencapsulated lesions, mainly confined within the subcutis without connections to the epidermis or follicular structures. (Fig. 2) They were composed of basaloid epithelial cells arranged in nodular, cribriform, racemiform, or retiform patterns, embedded in a fibroblastic stroma. (Fig. 3, 4) The basaloid epithelial cells were palisaded at the periphery of nests and strands. A cribriform pattern with formation of pseudoglandular lumina containing mucinous material was predominant in one tumor. Branching epithelial strands composed of two or

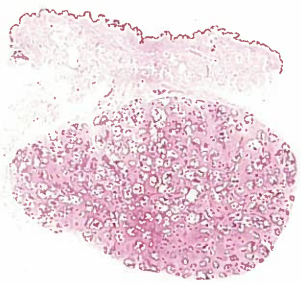

Fig. 2
Scanning view showing a 2x1.5x1cm well-circumscribed tumor without connections to the epidermis. (H & E stain)

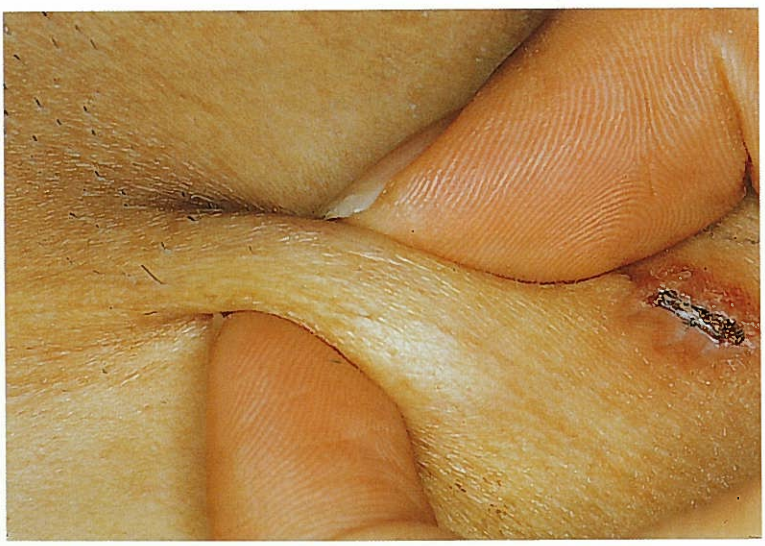

Fig. 1
A subcutaneous nodule in the left groin.

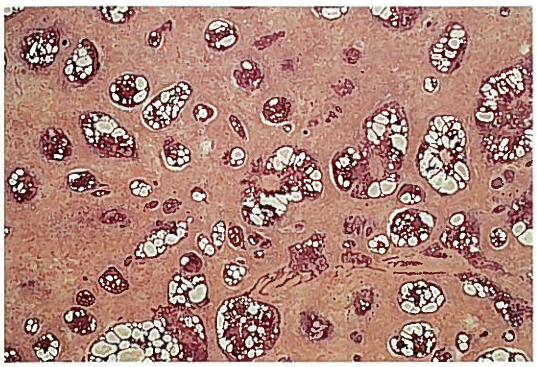

Fig. 3
Multiple predominant cribriform epithelial nests with a few elongated strands embedded within the fibroblastic stroma. (H & E stain, 20x)

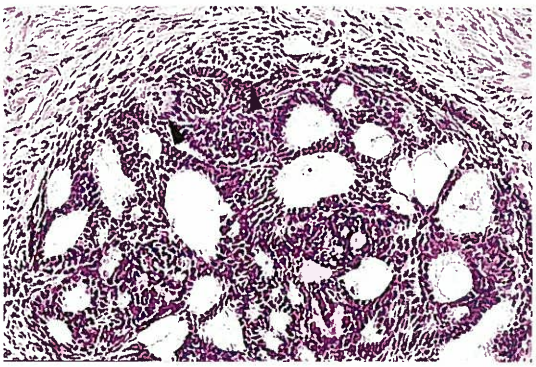

Fig. 5
Basaloid epithelial islands showed peripheral palisading and pseudoglandular lumens. Note the papillary mesenchymal bodies adjacent to the invaginations. (arrows) (H & E stain, 100x)

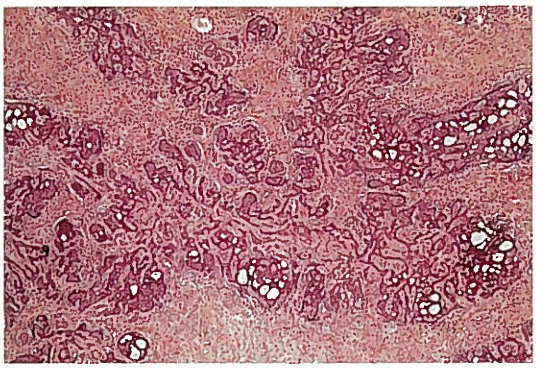

Fig. 4
Racemiform epithelial aggregations. (H & E stain, 40x)

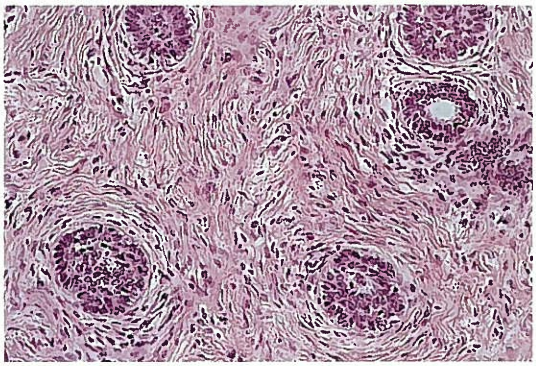

Fig. 6
Perifollicular fibrous sheath-like mesencymal cells around epithelial nodules. (H & E stain, 100x)

three layers of cells and surrounded by hyalinized stroma were seen in some tumors. Epithelial structures resembling rudimentary follicular germs could occasionally be found. Papillary mesenchymal bodies, formed by stromal fibroblastic aggregations and typically adjacent to epithelial islands, especially epithelial invaginations, were present. (Fig. 5) A few small keratinous cysts were also noted. In addition, some epithelial nests contained a small amount of melanin pigment.

The fibrotic stroma displayed varying degrees of cellularity. In many foci of each tumor, the epithelial nodules were surrounded by spindle-shaped mesenchymal cells, which recapitulated the perifollicular fibrous sheath. (Fig. 6) In addition, stromal clefts were located within the stroma. Remarkably, numerous mast cells within the stroma were found on toluidine blue staining. Some lymphocytes were also present.

DISCUSSION

From Headington's classification[1], trichoblastoma is a pure epithelial tumor of hair germ without evidence of inductive change. Trichoblastic fibroma shows the earliest phase of stromal induction. It consists of complex lobular islands of epithelial cells embedded in a moderately cellular fibroblastic matrix. The distinct epithelial features are the formation of a primary germinal bud and long thin strands of epithelial cells surrounded by a relatively dense hyalinized stroma. Small keratinous cysts are

occasionally seen but true hairs are not found. As for the term "trichoblastoma" proposed by Ackerman *et al.*,[2] it is an inclusive term, which encompasses all of the neoplasms referred to by Headington as trichoblastoma, trichoblastic fibroma, trichogenic trichoblastoma, and trichogenic myxoma. For those tumors in our case, evidence of follicular differentiation, such as epithelial structures resembling rudimentary follicular germs, papillary mesenchymal bodies,[3] small keratinous cysts, perifollicular fibrous sheath-like stromal mesenchymal cells, were observed. No advanced or true hair follicle formation was found. Consequently, these tumors really match the criteria of trichoblastic fibroma by Headington's classification and surely fall within that category of trichoblastoma defined by Ackerman *et al.*. In this article, we will adopt the terminology of Ackerman *et al.* for discussion.

Trichoblastoma usually presents as a solitary, giant (usually 1-8 cm in diameter), deeply seated tumor with a predilection for involvement of the pelvic girdle, trunk or head.[1,2,4-8] It may occur at any age.[5] Trichoblastoma is usually pseudoencapsulated and shells out during surgery.[1,2,9] In our case, all the tumors resected from the pelvic girdle were giant (at least more than 1 cm in diameter) subcutaneous nodules. Clinically, they were first suspected to be lipomas and were shelled out at surgery.

Most trichoblastomas are situated in the lower dermis and sometimes extend to the subcutis.[5,6,9-12] Nevertheless, some authors have also referred briefly to exceptional cases of trichoblastoma located mainly within the subcutis,[2,9,13-15] and have suggested these were a rare variant of solitary trichoblastoma.[9] Subcutaneous trichoblastomas have been noted to have rather complex histologic patterns or a broad range of growth patterns (e.g., cribriform, nodular, racemiform, retiform).[9,13,16] In our case, all the tumors were located mainly within the subcutis, and they contained complex histologic patterns including nodular, cribriform, racemiform, and retiform patterns.

According to the literature, trichoblastoma is mostly a solitary giant lesion.[1,2,6-9,11] However, in our case, at least four giant tumors were resected from the groin and buttock separately. We did not biopsy the remaining nodules the patient had, but we expect they would have had the same histology as the four resected tumors. As far as we are aware, though some follicular neoplasms present as multiple lesions, multiple subcutaneous trichoblastomas have rarely been encountered.

Histologically, basal cell carcinoma (BCC) may show features resembling trichoblastoma. Nevertheless, most fibroepithelial BCC are connected to the epidermis at numerous foci, have clefts between tumor cells and stroma, and no signs of follicular differentiation.[2] Although the gross features of trichoblastomas might resemble fibroepithelial BCC, our patient's lesions were quite different from fibroepithelial BCC clinically and histologically. The fact that, in our case, the nodules were subcutaneous, well-circumscribed, popped out easily, and had normal overlying skin strongly argues against the diagnosis of nodular BCC. Primary and metastatic BCCs limited to the subcutis are exceedingly rare, and they do not exhibit prominent follicular germs in concert with follicular papillae.[9]

Trichoepithelioma and trichoblastoma share many similar histologic features and both demonstrate mixed epithelial-mesenchymal component with follicular differentiation. According to Ackerman, trichoepithelioma may also be a type of trichoblastoma.[2] However, many authors think that trichoepithelioma is best regarded as a hair germ hamartoma,[1,12,17] in which differentiation toward the upper part of the hair follicles has been suggested.[12,17,18] On the other hand, trichoblastoma is considered to be a trichogenic neoplasm with differentiation toward the hair bulb or hair germ epithelial-mesenchymal unit.[17,18] In one study, expression of CK 7 was present in trichoblastoma but absent in trichoepithelioma, suggesting that

trichoepithelioma is more mature or less fetal.[12] However, another investigation did not find CK7 in trichoblastoma.[19]

Clinically, trichoepitheliomas are usually small (less than 1cm in diameter), solitary or multiple lesions with autosomal dominant heritage, mainly on the face and occasionally at other sites.[1,20] Histologically, they are always a intradermal tumor but may communicate with the overlying epidermis and are usually not as well circumscribed as trichoblastoma.[1,7,11] Additionally, they frequently form numerous keratinous cysts with keratohyaline granules, which are absent or rare in trichoblastoma.[1,7,10-12]Compared with multiple trichoepitheliomas, our patient's multiple lesions were giant subcutaneous nodules over the pelvic girdle and trunk. His family history was negative for similar lesions, suggesting the absence of an inherited predisposition. Therefore, they were quite different clinically and histologically.

In conclusion, we present a rare case of multiple subcutaneous trichoblastomas, with varying histologic patterns. Both the clinical characteristics and histologic features support the diagnosis of trichoblastoma.

REFERENCES

1. Headington JT: Tumors of the hair follicle. Am J Pathol 85: 489-514, 1976.
2. Ackerman AB, de Viragh PA, Chongchitnant N: Neoplasms with follicular differentiation. Philadelphia: Lea & Febiger, 359-421, 1993.
3. Brooke JD, Fitzpatrick JE, Golitz LE: Papillary mesenchymal bodies: a histologic finding useful in differentiating trichoepitheliomas from basal cell carcinomas. J Am Acad Dermatol 21: 523-528, 1989.
4. Watanabe S, Torii H, Matsuyama T, *et al.*: Trichoblastic fibroma: a case report and an immunohistochemical study of cytokeratin expression. Am J Dermatopathol 18: 308-313, 1996.
5. Requena L, Renedo G, Sarasa J, *et al.*: Trichoblastic fibroma. J Cutan Pathol 17: 381-384, 1990.
6. Altman DA, Mikhail GR, Johnson TM, *et al.*: Trichoblastic fibroma: a series of 10 cases with report of a new plaque variant. Arch Dermatol 131: 198-201, 1995.
7. Gilks CB, Clement PB, Wood WS: Trichoblastic fibroma: a clinicopathologic study of three cases. Am J Dermatopathol 11: 397-402, 1989.
8. Schirren CG, Rutten A, Kaudewitz P, *et al.*: Trichoblastoma and basal cell carcinoma are neoplasms with follicular differentiation sharing the same profile of cytokeratin intermediate filaments. Am J Dermatopathol 19: 341-350, 1997.
9. Kaddu S, Schaeppi H, Kerl H, *et al.*: Subcutaneous trichoblastoma. J Cutan Pathol 26: 490-496, 1999.
10. Slater DN: Trichoblastic fibroma: hair germ (trichogenic) tumours revisited. Histopathology 11: 327-331, 1987.
11. Grouls V, Hey A: Trichoblastic fibroma (fibromatoid trichoepithelioma). Pathol Res Pract 183: 462-468, 1988.
12. Yamamoto O, Asahi M: Cytokeratin expression in trichoblastic fibroma (small nodular type trichoblastoma), trichoepithelioma and basal cell carcinoma. Br J Dermatol 140: 8-16, 1999.
13. Wong TY, Reed JA, Suster S, et al.: Benign trichogenic tumours: a report of two cases supporting a simplified nomenclature. Histopathology 22: 575-580, 1993.
14. Torii H, Ohnishi T, Matsuyama T, *et al.*: Trichoegenic trichoblastoma arising on the supraclavicular fossa with an immunohistochemical study of cytokeratin expression. Clin Exp Dermatol 22: 183-188, 1997.
15. Tatnall FM, Jones EW: Giant solitary trichoepitheliomas located in the perineal area: a case report of three cases. Br. J Dermatol 115: 91-99, 1986.
16. Kaddu S, Soyer HP, Kerl H: Trichoblastoma arising in nevus sebaceous. Am J Dermatopathol 19: 429, 1997.
17. Rosen LB: A review and proposed new classification of benign acquired neoplasm with hair follicle differentiation. Am J Dermatopathol 12: 496-516, 1990.
18. Aloi F, Tomasini C, Pippione M: Pigmented trichoblastoma. Am J Dermatopathol 14: 345-349, 1992.
19. Ohnishi T, Watanabe S: Immunohistochemical analysis of cytokeratin expression in various trichogenic tumors. Am J Dermatopathol 21: 337-343, 1999.
20. Gray HR, Helwig EB: Epithelioma adenoides cysticum and solitary trichoepithelioma. Arch Dermatol 87: 142-154, 1963.