Rippled-pattern sebaceoma: A report of a lesion on the back with a review of the literature

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Abstract

A 68-year-old Japanese man presented with a tumor that had been present for 5 to 6 years on the right back. Physical examination revealed a dome-shaped, 12x13-mm, dark red tumor. The tumor was excised with a 2 to 3-mm margin. The patient has remained free of disease during 77-months of follow-up. Microscopic examination revealed a bulb-like tumor in the dermis, contiguous with the overlying epidermis. It was composed of small, monomorphous, cigar-shaped basaloid cells in linear, parallel rows, resembling the palisading of nuclei of Verocay bodies, and presenting a rippled-pattern. There were scattered cells showing sebaceous differentiation with vacuolated cytoplasm and scalloped nuclei. There were tiny, duct-like spaces. The tumor revealed characteristics of rippled-pattern sebaceoma. The present case is the first reported rippled-pattern tumor on the back. Many spindle cell tumors, such as basal cell carcinoma, pleomorphic adenoma, dermatofibrosarcoma protuberans, myofibroblastoma, and leiomyoblastoma, in addition to trichoblastoma and sebaceoma, might have a rippled-pattern.

Key words: rippled-pattern, sebaceoma, trichoblastoma, Verocay body, central palisading

A trichoblastoma with an unusual rippled-pattern was first described by Hashimoto et al. as rippled-pattern trichomatricoma.[1] Since then, there have been several report of rippled-pattern trichoblastoma,[2-5] a few of which demonstrated clusters of sebaceous cells[2,4] and were designated rippled-pattern sebaceous trichoblastoma.[4] Recently, rippled-pattern sebaceoma was reported distinct from rippled-pattern sebaceous trichoblastoma.[6] Furthermore, there is an article attempting a shift in the thinking about rippled-pattern tumors, which indicates that rippled-pattern signifies sebaceoma, not trichoblastoma.[7] The above all rippled-pattern tumors were exclusively reported on the head and neck areas.[1-6]

Case report

A 68-year-old man presented with a tumor on the right side of the back, which had gradually enlarged over the previous 5 to 6 years. Physical examination revealed a dome-shaped, 12x13-mm, dark red tumor. The indented center of the tumor was covered by a crust (Fig. 1). There was neither attachment to the base nor superficial lymphadenopathy. The results of routine laboratory studies were within normal limits. The patient had no significant family or past history. There has been no other form of cancer. The patient had no indication for the Muir-Torre syndrome. The tumor was excised with a 2- to 3-mm margin. The patient has remained free of disease during 77-months of follow-up.

Gross pathology

The cut surface was solid and milky white.

Histopathology

Microscopic examination revealed a well-circumscribed, bulb-like tumor in the dermis, contiguous with the overlying epidermis. At low magnification the tumor resembled an eccrine spiradenoma with a nodule of basaloid cells. It was sharply demarcated from the surrounding connective tissues and not infiltrative (Fig. 2A). Capsule was not seen. Inflammatory infiltrates were sparse. The tumor was composed of the basaloid, round or slightly elongated cells with scant eosinophilic cytoplasm and fine granular hyperchromatic nuclei. Rare nucleoli were identified. There was no cell pleomorphism, nuclear hyperchromasia, atypical mitosis, or necrosis. Mitoses and apoptosis were rare. An unusual finding was a peculiar arrangement of the cigar-shaped basaloid cells in linear, parallel rows resembling the palisading of nuclei of Verocay bodies in schwannomas (Fig. 2B). Partly, tumor cells were arranged in rosettes and pseudorosettes. However, peripheral palisading of the cells was not seen. There were scattered cells showing sebaceous differentiation with vacuolated cytoplasm and scalloped nuclei (Fig. 2C). There were tiny duct-like spaces consistent with sebaceous ducts (Fig. 2D). In some areas, an edematous stroma separated the epithelial cords. No retraction spaces or clefts were identified between the tumor lobules and the surrounding stroma. In addition, no definite demarcation between the surrounding stroma and the normal dermis was appreciated.

Immunohistochemistry

Immunohistochemical studies revealed the following findings. 1) Cytokeratin (34β E12 and MNF116) was positive in all tumor cells. 2) S-100 protein was positive in a few cells. 3) Carcinoembryonic antigen, Epithelial membrane antigen, CA19.9, CA15.3, CA12.5, CD15, BCA225, gross cystic disease fluid protein-15, breast carcinoma associated antigen, andα

-smooth muscle actin were all negative.

Discussion

Sebaceoma, originally described by Troy and Ackerman, is a distinct benign sebaceous neoplasm that is histopathologically characterized by dermal aggregations of basaloid, sebaceous germinative cells and sebaceous duct-like or cyst-like structures.[8] Sebaceoma can show a cribriform or reticular pattern as in trichoblastoma/trichoepithelioma, and mimic cylindroma/spiradenoma on low magnification.[9,10] Some sebaceomas contain only scattered sebaceous cells, and trichoblastoma can present sebaceous differentiation[11] and only scant fibrotic stroma without prominent follicular differentiation.[12] Furthermore, a close relationship between sebaceoma and trichoblastoma has been suggested.[13] Accordingly, distinguishing sebaceoma and trichoblastoma is sometimes extremely difficult.

Histopathologic examination of rippled-pattern trichoblastoma reveals dermal aggregations of small, monomorphous, basaloid, follicular germinative cells with a characteristic rippled-pattern resembling Verocay bodies of schwannoma, as well as squamous eddy-like foci of incomplete keratinization.[1] Rippled-pattern sebaceoma had been considered distinct from rippled-pattern sebaceous trichoblastoma.[6] Because a rippled-pattern sebaceoma represents dermal aggregations composed of small, monomorphous, basaloid, sebaceous germinative cells, it is very difficult to distinguish it from rippled-pattern trichoblastoma. Although Misago et al. admitted they could not distinguish sebaceoma from sebaceous trichoblastoma in all cases, they emphasized the presence of vacuolated cells and tiny duct-like spaces for the diagnosis of sebaceomas.[6] However, there is an article attempting a shift in the thinking about these neoplasms.[7] It insisted that none of the prior reported cases of rippled-pattern trichoblastoma were related to the trichoblast, but were rather related to sebocytes, both immature and mature.[7] Trichoblastoma usually show the features of follicular differentiation such as hair germ or hair papilla-like structures, palisading border in the aggregations, and highly fibrocytic stroma.[12] In paticular, the trichogenic stroma resembling that of the specific mesenchyme of the hair follicle is typical for trichoblastomas and not seen in sebaceomas. In fact, the prior reported cases of rippled-pattern trichoblastoma might not show the convincing evidence of follicular differentiation. In the present case, histopathologic examination showed the absence of the specific trichogenic stroma, of follicular differentiation, and of a palisading border in the neoplastic aggregations as well as the presence of scattered vacuolated cells and tiny duct-like spaces. Furthermore, rosettes/pseudorosettes formation is a carcinoid-like pattern, which is closely related to rippled-pattern and is indicative of sebaceous neoplasms.[14] The bulb-like silhouette was reminiscent of the sebaceous gland apparatus. These features favor the diagnosis of rippled-pattern sebaceoma rather than trichoblastoma with sebaceous differentiation. Because of its sharp circumscription, mature sebaceous cells and duct-like formations, and small monomorphous basaloid cells, we did not consider this neoplasm to be a sebaceous carcinoma. Its benign nature was also suggested by its architecture and cytology. The present case is the first reported rippled-pattern tumor on the back.

Nuclear palisading is observed in some skin tumors. Peripheral nuclear palisading is often seen in basal cell carcinoma[15] and trichilemmal tumors.[16] Verocay bodies are an arrangement of nuclei of Schwann cells in two parallel rows enclosing a space of nearly homogeneous anuclear material.[17] Although Verocay bodies are often observed in schwannomas and neurofibromas,[17] similar findings have been reported in various other tumors, such as basal cell carcinoma,[18,19] pleomorphic adenoma,[20] dermatofibrosarcoma protuberans,[21] myofibroblastoma,[22,23]

leiomyoblastoma,[23] trichoblastoma, and sebaceoma. These findings were described as central nuclear palisading, Verocaylike body, Verocay body-prominent, intranodal palisaded, intranodal palisading, or rippled-pattern. The above all tumors could show spindle cell proliferation and an intertwining pattern. These findings might be a feature of spindle cell tumors. Namely, a rippled-pattern might be present in many spindle cell tumors.

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Legends

Fig. 1 Clinical appearance: A dome-shaped, 12x13-mm, dark red tumor with a crust.
Fig. 2 Microscopic examination: A) A bulb-like, basophilic tumor contiguous with the overlying epidermis. (hematoxylin-eosin, low magnification) B) cigar-shaped basaloid cells in linear, parallel rows resembling the nuclear palisading of Verocay bodies. (hematoxylin-eosin, x50) C) Scattered cells showing sebaceous differentiation with vacuolated cytoplasm and scalloped nuclei. (hematoxylin-eosin, x100) D) Tiny duct-like spaces consistent with sebaceous ducts. (hematoxylin-eosin, x50)

Fig.1

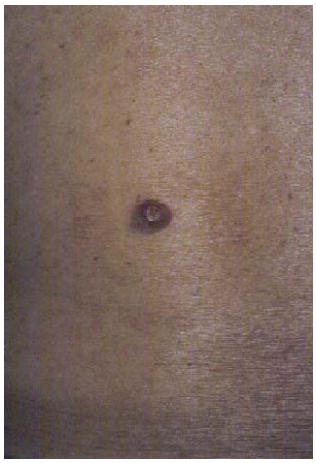

Fig.2A

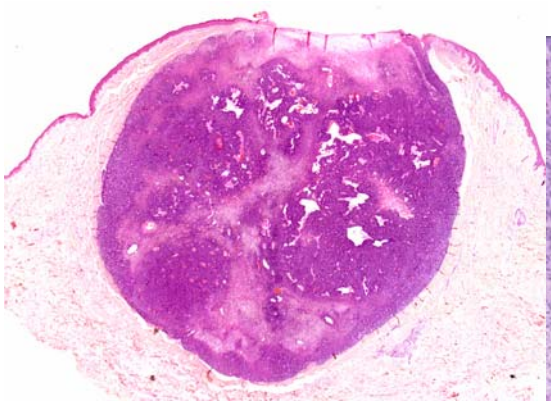

Fig.2B

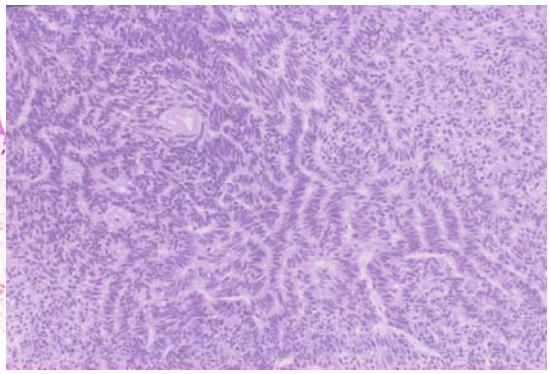

Fig.2C

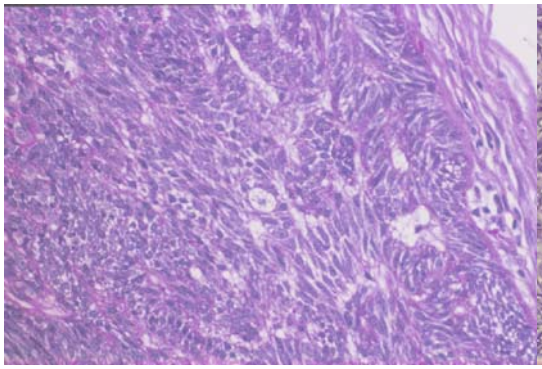

Fig.2D