A Case of Apocrine Poroma

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Apocrine poroma is a benign cutaneous adnexal neoplasm differentiating in the direction of sebaceous and apocrine glands, and follicular germs. The clinical appearance of apocrine poroma is not distinctive, and the histologic finding is similar to that of eccrine poroma, which is typified by proliferation of poroid and luminal cells in continuity with the epidermis. But sebaceous, apocrine or follicular differentiation may also be found in the case of apocrine poroma.

We herein report a case of apocrine poroma on the scalp. This case exhibited apocrine and sebaceous differentiation, and connection to an adjacent follicular epithelium. (Ann Dermatol 12(1) 60~63, 2000).

Key Words: Follicular connection, Sebaceous and apocrine differentiation

There have been a few reports of apocrine poroma*. Clinically, the lesions arise as either papules or plaques, which were skin-colored, pink or red. Histologically, the bulk of the neoplasm consisted of a proliferation of poroid cells with interspersed small ducts, and the sebaceous, apocrine or follicular differentiation are seen in foci of the neoplasm. Most of the cases were first considered as eccrine poroma that exhibited combined adnexal differentiation. Various terms were used for these apocrine poroma such as “complex poroma-like adnexal adenoma”, “sebaceous and apocrine adenoma”, “sebocrine adenoma”, and “poroma with sebaceous differentiation”.

We present a case of apocrine poroma on the scalp, which showed sebaceous and apocrine differentiations.

CASE REPORT

A 45-year-old male had a painless, solitary tumor on the scalp for 5 years (Fig. 1). An examination revealed a well-defined, dome-shaped, reddish mass with easy bleeding tendency. The initial diagnosis of granuloma pyogenicum was made and the lesion was surgically excised.

A skin biopsy specimen showed a well-circumscribed mass in the dermis with apparent connection to the overlying epidermis and connection of aggregate of neoplastic cells to preexisting infundibula was assumed in a focus of the specimen (Fig. 2). Large zones of necrosis were observed as cystic spaces within the aggregate of tumor cells. The vast majority of tumor cells consisted of monomorphic cells, smaller than overlying keratinocytes, with oval nuclei, scant cytoplasm, and demonstrable intercellular bridges (Fig. 3). Small primitive ductal structures were present, lined by large and pale luminal cells. The intervening stroma consisted of edematous, loose collagen with numerous blood vessels and small amount of melanin pigments were scattered in the neoplastic cells and the stroma. Evidence of sebaceous differentiation was observed in the form of grouped sebocytes with vacuolated cytoplasm and scalloped nuclei (Fig. 4). Some luminal cells showed intensely
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distinguishable. Thus, the major neoplasm that most closely resembles apocrine poroma is eccrine poroma. But, embryologically, the hair follicle, sebaceous gland and duct, and apocrine gland and duct arise from a single epithelial bud and develop as a single unit the folliculoapocrine unit. In contrast, eccrine sweat glands and ducts arise from a separate, distinct epithelial bud. Thus, one line of

eosinophilic cytoplasm, rounded apical membranes and pinch-off secretion, which are highly suggestive of apocrine differentiation (Fig. 5).

Two months after surgical treatment, there was no evidence of recurrence.

**DISCUSSION**

Apocrine poroma is benign neoplasm composed of poroid and luminal cells that resemble those that make up the uppermost part of apocrine ducts. This tumor has not been regarded as a separate entity and the term apocrine poroma was recently introduced by Ackerman et al. The apocrine and eccrine duct have a number of morphological features in common that under normal conditions are easily thinking proposes that when neoplasms exhibit follicular, sebaceous, and sudoriferous differentiation, the sudoriferous differentiation is apocrine, owing to the embryologic association of these structures.

The apocrine differentiation area is identical in morphology to the eccrine poroma, which is typified by proliferations of poroid and luminal cells in continuity with the epidermis that extend, at least, into a thickened papillary dermis. The vast majority of the proliferation consists of monomorphic cells, smaller than overlying keratinocytes, with oval nuclei, scant cytoplasm, and demonstrable intercellular bridges. Small, round, and regular ductal structures are focally present, lined by smooth-surfaced eosinophilic cuticles. In addition to
Fig. 3. The vast majority of tumor cells consisted of monomorphous cells, smaller than overlying keratinocytes, with oval nuclei, scant cytoplasm, and demonstrable intercellular bridges with numerous melanin granules. Small primitive ductal structures are lined by large and pale luminal cells (H&E, ×100).

Fig. 4. The evidence of sebaceous differentiation in the form of grouped sebocytes (arrow) (H&E, ×200).

Fig. 5. Apocrine differentiation is suggested by intensely eosinophilic cytoplasm, rounded apical membranes and pinch-off secretion of the lining cells (H&E, ×400).

cells. Sebaceous duct differentiation consists of tubular and/or cystlike spaces lined by squamous cells and an eosinophilic, scalloped, or crenated cuticle. Follicular differentiation exhibits the form of round aggregates of small basoloid cells with a peripheral layer of columnar basoloid cells arranged in a palisade, resembling follicular germinative epithelium. These are always in direct continuity with the poroid element. In sum, the connection of neoplastic cells to follicular infundibulum, the hints of apocrine secretion, or sebaceous or follicular differentiation are features that support a diagnosis of apocrine, rather than eccrine poroma. The intervening stroma in apocrine poroma consists of edematous, loose collagen with numerous blood vessels, which correlates with an angiomatous appearance clinically. At other times, however, it is extensively sclerotic.

This case revealed distinct sebaceous and apocrine differentiation in addition to the histopathologic findings of eccrine poroma. Connection to an adjacent follicular epithelium also suggests the apocrine origin of this tumor, considering embryologic development of the folliculosebaceous-apocrine unit from a single germ. Numerous blood vessels in the stroma could explain the granuloma pyogenicum-like clinical appearance of this tumor. A small amount of
melanin was found in neoplastic cells and within stroma. Presence of melanin in neoplastic cells was reported particularly in lesions arising in Black and Asian individuals. It is thought as a variant histologic feature of apocrine poroma, as with its eccrine counterpart.

The previous reports of eccrine-poroma-like lesions with sebaceous differentiation indicated histologic similarity to sebaceaoma, infundibular adenoma, verruca vulgaris with sebaceous differentiation and seborrheic keratosis with sebaceous differentiation. Nevertheless, a distinction of apocrine poroma from them is usually possible. Sebaceaoma usually consists of basaloid cells, not poroid cells in apocrine poroma. Infundibular adenoma has horn pseudocysts, which are rare in apocrine poroma. The architectural pattern and the lack of koilocytes and large keratohyaline granules may differentiate verruca vulgaris. In seborrheic keratosis, verruca vulgaris, or sebaceaoma are not present neoplastic sweat ducts.

The clinical appearance of apocrine poroma is not distinctive, and the clinical differential diagnosis includes pyogenic granuloma, verruca vulgaris, seborrheic keratosis, dermatofibroma, basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. In contrast to eccrine poroma, apocrine poroma has no predilection for the palm or sole. The neoplasm favors the body above the shoulder, but it also occurs on the trunk and extremity. Usually they are asymptomatic. Because our patient experienced easy bleeding from mild trauma and the tumor was reddish and dome-shaped, we first diagnosed it as granuloma pyogenicum. Most of the reported cases showed no evidence of recurrence after biopsy or excision, except for one case with an incomplete excised lesion.

It is our suggestion that we should look for any evidence of follicular, sebaceous or apocrine differentiation carefully when eccrine poroma-like lesion develops at sites above the shoulder or at sites where apocrine glands are present.

REFERENCES