Apocrine Adenocarcinoma Occurring on the Chin

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ABSTRACT

We report a case of adenocarcinoma affecting the chin of a 48-year-old man. The tumor showed signs of apocrine differentiation and had infiltrated the muscle. The patient had no history or clinical evidence of breast cancer. We made a diagnosis of cutaneous apocrine adenocarcinoma. Apocrine adenocarcinoma rarely arises in areas with scarce apocrine glands. We reviewed the literature on apocrine adenocarcinoma of the face in areas other than the eyelids and auditory canal, where specialized apocrine glands are present.

Key words adnexal tumors; apocrine adenocarcinoma; chin; sweat gland tumors

Apocrine adenocarcinoma is a rare neoplasm and usually occurs in areas of apocrine glands such as axillae.[1, 2] Therefore, predilection sites are a hallmark for diagnosis, and dermatologists may miss a differential diagnosis of apocrine adenocarcinoma for lesions occurring on other sites. Here, we report a case of apocrine adenocarcinoma affecting the chin, which usually contains no apocrine glands.

PATIENT REPORT

A 48-year-old man was referred to us with a 6-month history of a tumor on the chin. He had no past history of breast cancer or other malignancies. In addition, there had been no congenital lesion suggesting nevus sebaceous on the chin. Clinical examination revealed a nodule, bright red in color, of 6 × 4 mm in diameter (Fig. 1a). Histopathologically, the lesion was non-encapsulated and was composed of many nodular or lobular nests, varying in size and shape, infiltrating into the deep dermis and muscle with an asymmetrical distribution (Figs. 1b and c). The solid nests showed a proliferation of atypical cells with abundant eosinophilic granular cytoplasm and prominent nuclei. There were many ducts and glandular structures showing apical snouts in the luminal border, indicating apocrine differentiation (Fig. 1d). Immunohistochemical analysis was performed by the standard avidin-biotin complex method.[3] The primary antibodies used in this study are listed in Table 1. Tumor cells were positive for a pancytokeratin marker (AE1/3) and cytokeratin 7 but negative for cytokeratin 20. Alpha-smooth muscle actin and p63 were partially detected in the peripheral part of the tumor nests (Figs. 1e and f). S-100 protein was expressed focally in tumor nests. Approximately 10% of the tumor cells were positive for Ki-67 (data not shown). F-18-fluoro-2-deoxyglucose positron emission tomography/computed tomography showed no evidence of malignancy of other sites. On the basis of these findings, we diagnosed the lesion as apocrine adenocarcinoma occuring on the chin. There has been no evidence of local recurrence, metastasis or any other malignancies including breast cancer for about 3 years after excision.

DISCUSSION

Apocrine adenocarcinoma on the face usually occurs on the eyelids or ears, where apocrine glands are abundant, and apocrine adenocarcinoma arising in the other structures is extremely rare. Except for ceruminal carcinoma and adenocarcinoma of Moll's glands, our review of the literature revealed only 4 cases of apocrine adenocarcinoma arising on the face, including the forehead, [4,5] upper lip[6] and chin[7] (Table 2). The mean age of those patients at diagnosis was 58 years, ranging from 40 to 94 years, which is almost the same as that for patients with apocrine adenocarcinoma on axillae. Eighteen previously reported cases of apocrine adenocarcinoma on the axillae had an average history duration of 6.5 years.[1] On the other hand, history durations of cutaneous apocrine adenocarcinoma on the face were several weeks to a few years as in our case. To our knowledge, the present case is the second reported case of apocrine adenocarcinoma occurring on the chin. Thus, an etiologic relationships between apocrine adenocarcinoma and the chin is strongly suggested by these 2 cases. Although the chin is an unexpected site for apocrine adenocarcinoma, this disease should be included in the differential diagnosis of a nodule on the chin.

The authors declare no conflict of interest.

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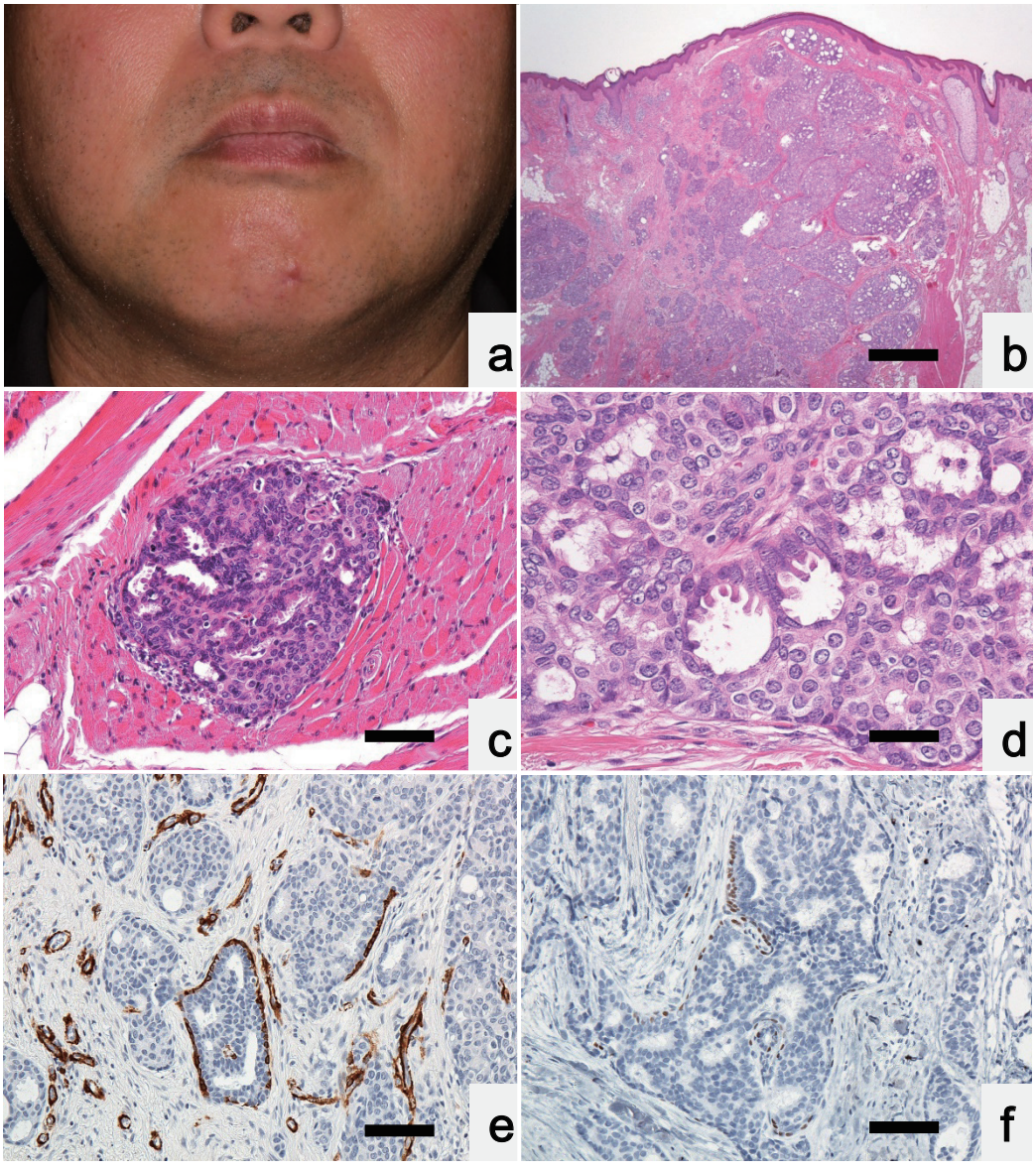

Fig. 1. Clinical presentation and histopathology. (**a**) Clinical appearance of the nodule on the chin. (**b**) Histopathologic examination of the lesion of the chin. An asymmetric tumor composed of nests varying in size and shape is located in all of the dermis and subcutis (hematoxylin-eosin, scale bar = 0.5 mm). (**c**) Tumor nests in the muscle layer (hematoxylin-eosin, scale bar = 50 μm). (**d**) Some nests contain glandular structures that show apical snouts suggesting apocrine differentiation (hematoxylin-eosin, scale bar = 25 μm). (**e**) Immunostaining for alpha-smooth muscle actin (hematoxylin-eosin, scale bar = 50 μm). (**f**) Immunostaining for p63 (hematoxylin-eosin, scale bar = 50 μm).

Table 1. List of antibodies used for immunohistochemistry

Antibodies	Clone	Type	Source	Dilution
AE1/AE3	AE1, AE3	Monoclonal	Nichirei	Pre-diluted
CK 7	OV-TL12/30	Monoclonal	Dako	1:100
CK 20	Ks20.8	Monoclonal	Dako	1:50
α-SMA	1A4	Monoclonal	Dako	1:100
p63	4A4	Monoclonal	Nichirei	Pre-diluted
S-100 protein		Polyclonal	Nichirei	Pre-diluted
Ki-67	MIB-1	Monoclonal	Dako	1:100

α-SMA, alpha-smooth muscle actin; CK, cytokeratin.

Table 2. Review of apocrine adenocarcinoma arising on the face

Authors	Age	Sex	Site	History duration	Size (cm)	Depth of cancer invasion	Local recurrence	Metastasis	Outcome (month)
Smith [4]	40	M	Forehead	2.5 years	ND	ND	Yes	LN	AWD (22)
Hayes [6]	54	M	Upper lip	Several weeks	5	Muscle	No	No	NED (24)
Misago [5]	94	F	Forehead	A few years	1.6	Subcutis	No	No	NED (48)
Ruiz-Villaverde [7]	56	M	Chin	1 year	1.3	Dermis	ND	ND	ND
Our case	48	M	Chin	6 months	0.6	Muscle	No	No	NED (33)

We exclude ceruminal carcinoma and adenocarcinoma of Moll's grands glands. AWD, alive with disease; F, female; LN, lymph node; M, male; NED, no evidence of disease; ND, not described.

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