# Apocrine Gland Carcinoma

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**Carcinomas of apocrine glands are rare and their diagnostic features are poorly defined. Only about 35 cases were reported in the literatures from 1911 to 19871. Their occurrence has been reported mainly in the axilla and breast area. We present a case of apocrine carcinoma arising from the left axilla. The literature is reviewed with respect to clinical and histopathologic findings. (Ann Dermatol 8:(4)253~256, 1996).**

*Key Words* : Apocrine gland carcinoma, Left axilla

Apocrine gland carcinomas are very rare cutaneous malignancies. These lesions occur predominantly in the axillae of elderly individuals, but occasionally also in others areas, where apocrine glands normally are present, such as the nipples, vulva, and eyelids. It is mostly an asymptomatic nodule or cystic mass.

Histologically it is not a very malignant tumor and sometimes is difficult to differentiate from benign apocrine adenomas or epithelioma[1,2]. Therefore, they are often reported to clinicians as a variant of sweat gland tumor, with-at best-a qualification that they have apocrine features.

We report a case with typical clinical and histopathologic findings.

## REPORT OF A CASE

This 74-year-old man presented with a 2-year history of left axillary mass. The mass increased slowly in size and the surface eroded. He had been treated at a private clinic, but the lesion had not improved. The mass was single, hard, nontender, oozing and 3 × 3 cm sized in diameter (Fig. 1). Left axillary lymph nodes were palpable.

On histopathologic examination, the mass was composed of lobules that showed a complex glandular arrangement in some areas and solid cellular sheets in others (Fig. 2). The cells were pleomorphic, and had copious granular eosinophilic cytoplasm. The nuclei were vesicular and hyperchromatic, and had prominent nucleoli. They showed mitotic figures. The secretory cells of glandular epithelium showed decapitation secretion (Fig. 3). The cytoplasm of some cells contained PAS-positive, diastase-resistant granules. A moderate amount of mucin was present focally in glandular lumina. Iron-positive intracytoplasmic granules were not demonstrable in the tumor cells. Lysozyme was present in the secretory material contained with the lumen. The axillary lymph nodes showed similar histologic findings.

Results of laboratory investigations included a normal complete blood cell count, peripheral blood smear, and chemistry profile. A chest x-ray and chest computerized axial tomography scan demonstrated enlarged left axillary and mediastinal lymph nodes (Fig. 4). The diagnosis of apocrine gland carcinoma was made.

The patient was treated with wide excision and regional lymph node dissection. At the last follow-up examination 1 year after surgery, there was no recurrence.

## DISCUSSION

Apocrine gland carcinoma is a malignant epithelial tumor showing evidence of derivation from apocrine sweat glands[4]. Previously, many cases were classified as "sweat gland tumors", because

Received March 8, 1996.
Accepted for publication June 20, 1996.
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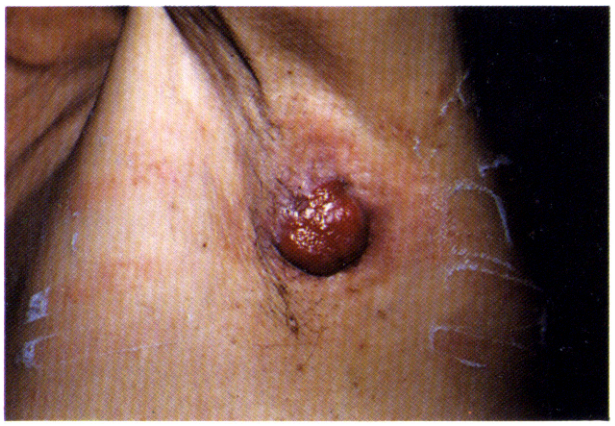

Fig. 1. Hard, nontender, oozing, 3×3 cm sized mass seen on the left axilla.

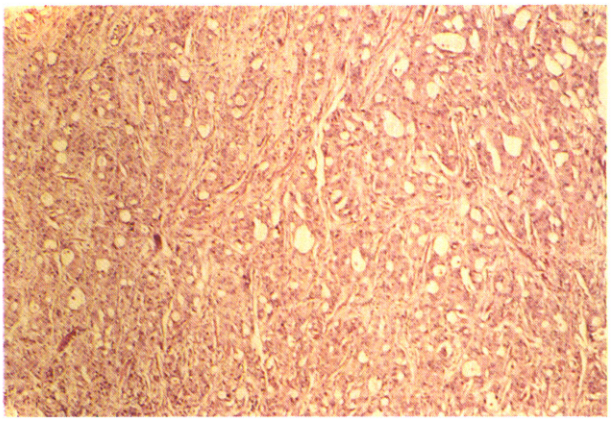

Fig. 2. They showed complex glandular appearance of the carcinoma. The tumor cells have large, polygonal, eosinophilic cytoplasm and a hyperchromatic nucleus (H&E stain, × 100).

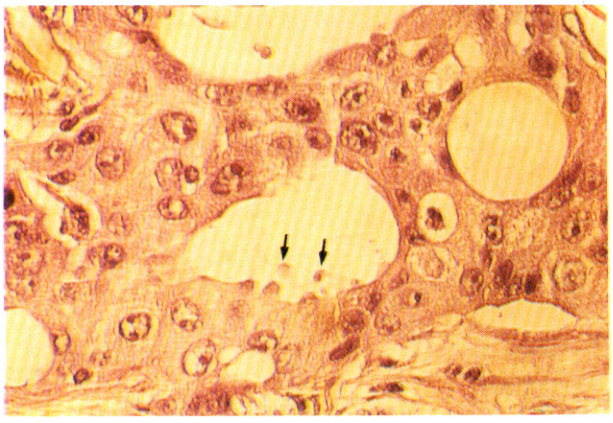

Fig. 3. Decapitation secretion (↓) was seen (H&E stain, ×400).

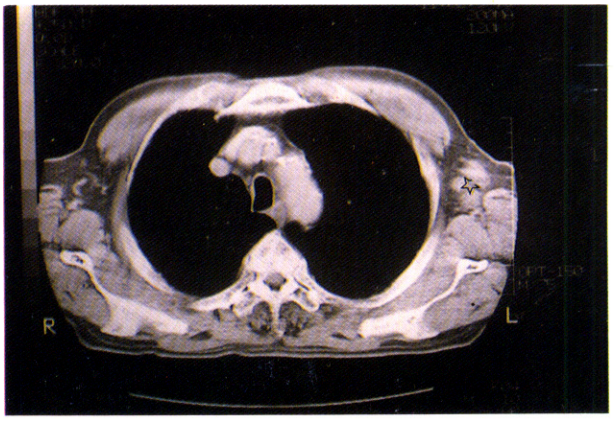


Fig. 4. Left axillary (☆) and mediastinal lymph nodes (↑) were enlarged in chest CT.

that it was difficult to differentiate apocrine glands from eccrine glands, and to determine the degree of malignancy[3,5].

This disease entity is a very rare cutaneous neoplasm. In Korea, only 3 cases have been reported[9]. The age of patients range widely from 12 to 91 years old, most frequently between 50 to 70 years. It does not develop until after the apocrine glands have achieved full maturity. There is no sex or age prevalence[3,5].

This tumor does not show distinctive clinical features that allow a clinician to suspect the diagnosis prior to surgical excision. It is a single, firm, rubbery, or cystic mass. The overlying skin is red to purple and occasionally ulcerated. The tumor ranges in size from 1.5 to 8.1 cm in diameter. Most patients have a history of a long-standing neoplasm before the diagnosis is made. This neoplasm often produce discomfort, but is not painful usually. It occurs in areas rich in apocrine or modified apocrine glands, such as the axilla, breast, scalp, eyelid, ear, and anogenital region[1,2,3,5,8].

The tumors show marked variation in histologic patterns. Histologic patterns include papillary, complex glandular, anastomosing tubular, solid cellular sheets, or cord-like infiltration with desmoplasia. In the same tumor, several histologic patterns can emerge. They are not encapsulated. The tumor cells have large, polygonal, eosinophilic, or rarely, clear, granular, occasionally vacuolated cytoplasm, a large vesicular nucleus with chromatin in large clumps and a prominent nucleolus. Mitotic activity ranges from low in some tumors to up to 4 mitotic figures per high power field in

others[8]. Decapitation secretion is present[3,5]. Apocrine gland carcinoma cells contain PAS-positive diastase-resistant granules and acid mucosubstance both in the cytoplasm and secretion. Intracellular iron-positive pigments are found only in a minority. They express common epithelial markers (low molecular weight cytokeratins and epithelial membrane antigen), tumor-associated antigens (carcinoembryonic antigen and B72.3), and histiocytic-secretive markers (alpha-1-antichymotrypsin, alpha-1-antitrypsin, lysozyme, Leu-M1, and LN5). Gross cystic disease fluid protein 15, and S-100 protein are expressed to variable degrees[3,5]. Microscopically, it may be difficult to separate apocrine from eccrine tumors. A combination of histologic features and immunohistochemical studies must be relied upon. In our case, tumor tissue consisted of lobules showed glandular arrangement in some areas and solid cellular sheets in other areas. The tumor cells were moderately differentiated and decapitation secretion was present. PAS/diastase-resistant stain and stain for acid mucosubstance were positive. Iron-stain was negative, S-100 protein was not expressed. Lysozyme stain was positive. Based on the above findings, our case was diagnosed as apocrined gland carcinomas.

The histogenesis of apocrine gland carcinoma is largely unknown. They are generally believed to originate from normal apocrine glands because of their relative location; Normal sweat glands are close to the tumor, although a link between apocrine gland carcinoma and normal glands only occasionally has been reported. Some authors suggest that apocrine gland carcinoma originate from a preexisting long-standing benign lesion because several apocrine gland carcinomas were associated with residues of benign sweat gland tumors[5].

Concerning the differentiation of primary apocrine carcinoma of the skin from other adnexal tumors, the most reliable criteria for the diagnosis of apocrine gland carcinomas are (1) decapitation secretion, (2) PAS-positive diastase-resistant material in the cells or lumina, and (3) positive immunostaining for gross cystic disease fluid protein 15, even if focal.

Primary apocrine gland carcinoma of the axilla must also be distinguished from metastatic apocrine gland carcinoma of the breast and from apocrine gland carcinoma that arises in an axillary prolongation or in ectopic breast. Most patients with metastatic axillary neoplasms will show evidence of disease of the breast after careful clinical investigation. An occult primary would be unusual. Neoplams that arise in ectopic breast or in an axillary extension may be associated with normal mammary structures or foci of typical intraductal breast carcinoma[3].

Apocrine gland carcinomas usually are associated with a nonfatal course. Local recurrences and regional lymph node metastases may occur years after the first excision but rarely cause death. Regional lymph node metastasis is the primary route of spread, sometimes, hematogenous metastasis to viscera and bones. The rate of regional lymph node involvement is 43%[5]. In our case, axillary and mediastinal lymph node metastases were found.

El-Domeiri et al[7] recommend that extremely well-differentiated sweat gland carcinomas should be treated by wide surgical excision alone and less differentiated tumors be treated by wide local excision and regional lymph node dissection. There are no firm conclusions regarding the potential benefits of chemotherapy because of small numbers of patients treated. Various anecdotal reports show no clear value[5]. We treated our patient with wide local excision and axillary lymph node dissection. There was no regional recurrence during one year of follow up.

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