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Adenoid Cystic Carcinoma of the Breast

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Adenoid cystic carcinoma of the breast is a rare neoplasm. It has a biological course of slow progression and near absence of lymph node metastasis (1,2). In contrast to extramammary adenoid cystic carcinoma, the prognosis of adenoid cystic carcinoma of the breast is excellent (1-5). Approximately 150 cases of adenoid cystic carcinoma of the breast have been reported in the literature to date (1-12).

Adenoid cystic carcinoma can be confused with other more common breast cancers such as intraductal carcinoma with a cribriform pattern (2). It is important to distinguish this cancer from other forms of breast cancer because of its excellent prognosis. A patient with adenoid cystic carcinoma of the breast with a 15 years history of palpable mass without distant metastasis is reported in this study.

A 59 year old postmenopausal woman presented with a 15 years history of palpable mass of the left breast. She began menarche at the age of 13, she has given birth to four children and experienced menopause at the age of 44. Physical examination revealed no skin or nipple changes and a mass of 12x10 cm located in subareolar area of the left breast. There was no palpable axillary lymphadenopathy. Mammography demonstrated a well delineated, regular marginated, homogeneous nodular density located in the central region of the left breast.

The incisional biopsy of the lesion revealed intra-

ductal carcinoma of the breast. The patient underwent a left modified radical mastectomy. The specimen contained a firm, well demarcated, gray mass measuring nine cm in the greatest dimension. The histopathologic examination revealed the typical features of adenoid cystic carcinoma of the breast with negative axillary lymph nodes. The tumor consisted of basaloid tumor cells with scanty amount of cytoplasm forming cohesive sheets and tubular lumina with periodic acid-Schiff positive and diastase resistant secretions which is regarded as the classical cribriform pattern of adenoid cystic carcinoma (Figures 1 and 2). Perineural invasion was not observed.

The patient did well after surgery except for a minimal flap necrosis and received adjuvant radiation therapy postoperatively. She is alive and well with no evidence of disease at 30 months follow-up.

Adenoid cystic carcinoma of the breast is a rare neoplasm and comprises less than 1% of all breast cancers. After an extensive search of the literature, we could find approximately 150 cases including five of which had been reported in male (1-12). The most frequent presenting symptom of adenoid cystic carcinoma of the breast is a well demarcated, movable mass which may be tender to palpation if there is growth in the perineural spaces. Fixation to the overlying skin, nipple retraction or invasion of the pectoral muscle are uncommon (1,4). It can develop distant

metastasis without prior detectable invasion of axillary lymph nodes (7). Qizilbash et al. pointed out a preferential occurrence of these tumors in the area of nipple and areola (8). The tumor is usually small with a mean diameter of 2 to 3 cm (2,9).

The histologic appearance of adenoid cystic carcinoma in the breast is similar to the other sites such as salivary glands, lacrimal glands, external ear, upper respiratory tract, esophagus, Bartholin gland, cervix uteri and prostate gland (2). Extramammary adenoid cystic carcinoma has a worse prognosis with a 5-year survival rate between 30% and 50% and nearly one-third of the patients have regional or distant metastasis at the time of initial treatment (1).

Adenoid cystic carcinoma of the breast is characterized mainly by small basaloid cells either with solid, cribriform or tubular growth patterns which are frequently mixed although anyone may predominate. Despite its characteristic histology, adenoid cystic carcinoma can be confused with other types of breast carcinoma such as intraductal carcinoma and invasive duct carcinoma with a cribriform pattern. The intraductal carcinoma with cribriform pattern shows polarity of epithelial cells around lumina (2,12). In this case, the ample amount of tissue submitted made the diagnosis easier along with the classical cribriform pattern of adenoid cystic carcinoma. There was no intraductal carcinoma in the several blocks from different areas.

From this case and from surveys of previously reported cases, it is obvious that adenoid cystic carcinoma of the breast has a generally more favorable

prognosis (1-5). Although Cavanzo and Taylor suspected that favorable prognosis of adenoid cystic carcinoma might be due to its small size and slower growth of the tumor (1), the tumor in this case was unusually large (nine cm in the greatest diameter). It should also be pointed out that the tumor had been present for 15 years and the patient developed neither positive axillary lymph nodes nor distant metastasis. While the reason for this favorable prognosis is unclear, it may be that certain biologic characteristics of adenoid cystic carcinoma are different from other types of more common breast cancers. Although there is a much lower incidence of axillary lymph node metastasis, recurrence after local excision has been reported by various authors (1,2,3,8).

As for other types of breast cancer, various treatment options have been performed for patients with adenoid cystic carcinoma of the breast. No conclusions have been drawn regarding radiation and chemotherapy. Since it is a rare neoplasm, it would be impossible to compare the treatment modalities prospectively. Sumphio et al. suggested that wide local excision could be curative because of the prolonged clinical course, good prognosis and almost nonexistent lymph node involvement (11). However, due to the documented recurrence of the tumor after local excision, most authors would recommend simple mastectomy unless the lesions are large or there are clinically enlarged axillary lymph nodes (1,2).

Ro et al. suggested histologic grading of adenoid cystic carcinoma of the breast according to the system used for adenoid cystic carcinoma of the salivary gland

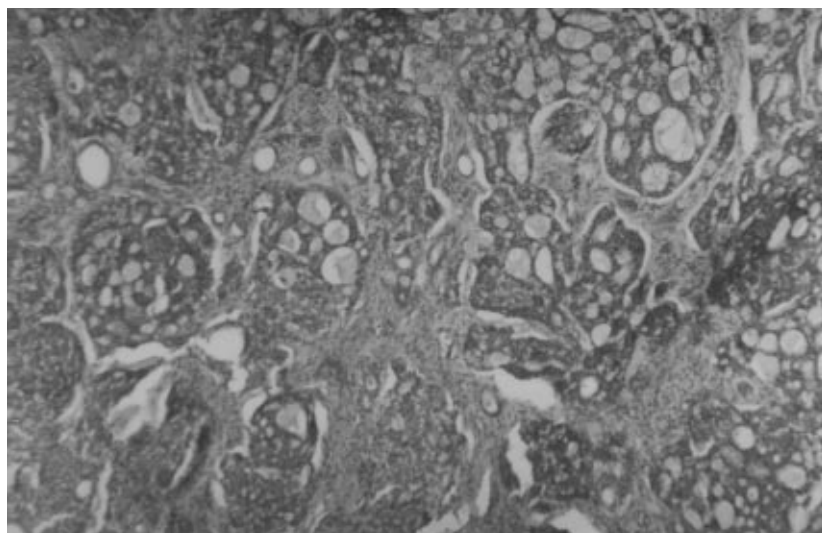


Figure 1. Low power view showing the islands of tumor cells with a prominent cribriform pattern of adenoid cystic carcinoma. (H.E. x 40).

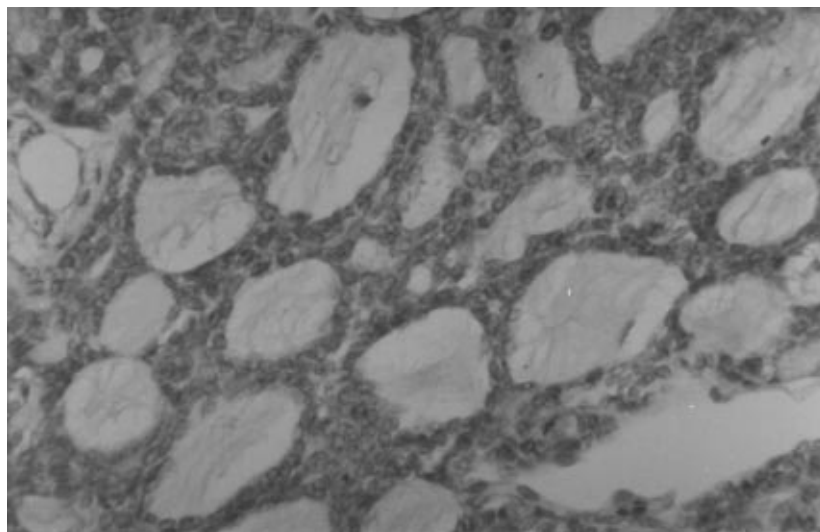


Figure 2. Basoloid cells with scanty cytoplasm and hyperchromatic oval or round nuclei forming spaces filled with mucoid secretions, (H.E. x 200).

and recommended local excision alone without axillary node dissection for grade I tumors, simple mastectomy for grade II tumors and mastectomy with axillary lymph node dissection for grade III adenoid cystic carcinoma(9).

In conclusion, other more common forms of breast cancer such as intraductal carcinoma may mimic the

appearance of adenoid cystic carcinoma. Adenoid cystic carcinoma of the breast has favorable prognosis. Therefore the accurate diagnosis and treatment is clinically important. Although it is rare, local recurrence and distant metastases may occur long after initial treatment and close follow-up is mandatory.

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