

# Adenoid cystic carcinoma of breast

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## Abstract

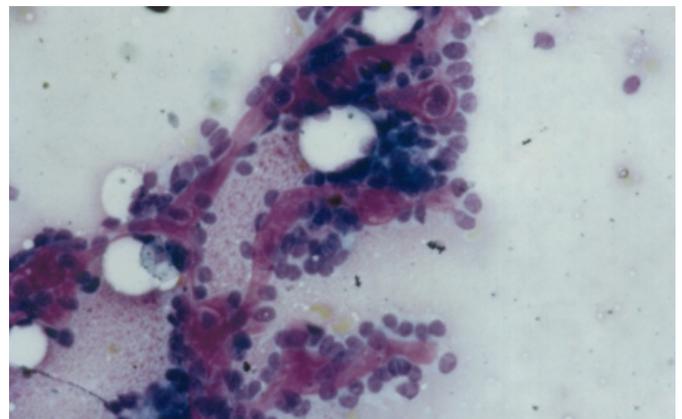
Adenoid cystic carcinoma of the breast is a very rare neoplasm. It has a biological course of slow progression and absence of lymph node metastasis. In contrast to extra mammary adenoid cystic carcinoma, the prognosis of adenoid cystic carcinoma is excellent. This unusual neoplasm of the breast has certain histo-pathological and biological characteristics that differentiate it from more common histologic types. Clinical experience has shown that this entity has a low propensity for local recurrence after excision. We present a case of a 55 year old female who presented to us with a painless swelling in the upper outer quadrant of left breast. Fine needle aspiration revealed adenoid cystic carcinoma. The patient underwent quadrantectomy. Histopathological examination confirmed adenoid cystic carcinoma of the left breast. Postoperatively the patient received radiotherapy and chemotherapy. The patient is doing well.

## CASE REPORT

A 55 year old postmenopausal woman presented with a 2 years history of palpable mass in the left breast. The lump was painless and there was no history of any discharge through the nipple. She had reached menopause 5 years back and had four children. She attained menarchy at the age of 14 years. Physical examination revealed a mass of 4 x 5 cms in the upper outer quadrant of left breast with no stain or nipple changes. There was no palpable axillary lymphadenopathy. Mammography revealed a well defined regular marginated, homogenous nodular density lesion located in upper outer quadrant of the left breast. FNAC of the lesion was advised that revealed features of adenoid cystic carcinoma of the breast (Fig. 1). Smear showed cylinders of hyaline stroma, surrounded by tumour cells. Tumour cells were monomorphic with scanty cytoplasm, hyperchromatic nuclei, coarse chromatin and indistinct nucleoli.

## Figure 1

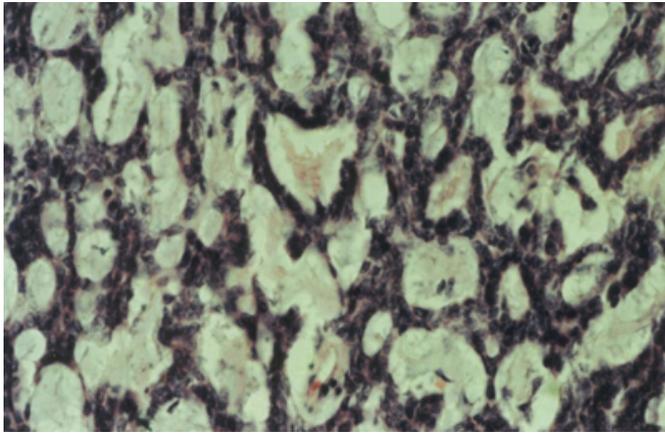
Figure 1: FNAC of adenoid cystic carcinoma breast, showing eosinophilic cylindroid material enclosed by small basaloid cells M 44 x 400



Since the diagnosis of adenoid cystic carcinoma was made on FNAC, a conservative line of management was followed. The patient underwent quadrantectomy with left axillary sampling. The postoperative period was uneventful. The histopathologic examination revealed typical features of adenoid cystic carcinoma of the breast with negative axillary lymph nodes. Pseudoglandular spaces with scant eosinophilic material was seen enclosed by small basaloid cells (Fig. 2). Resection lines were free and perineural invasion was not observed. The primary tumour was 2 x 1 cm in size and negative for hormone receptors as well.

**Figure 2**

Figure 2: Adenoid cystic carcinoma breast showing pseudoglandular spaces with scant eosinophilic material enclosed by small basaloid cells. H&E x 400.



Postoperatively the patient received three cycles of chemotherapy (5-FU, Epirubicin and cyclophosphamide) followed by radiotherapy and then again three more cycles of chemotherapy. The patient is well maintained with no evidence of disease at 12 years follow up.

**DISCUSSION**

Adenoid cystic carcinoma of the breast is a rare neoplasm and comprises less than 1% of all breast cancers<sup>(1,2,3,4)</sup>. Approximately 150 cases have been reported in the literatures<sup>(1,2,3,4)</sup>. The most frequent 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<sup>(1,4)</sup>. It can develop distant metastasis without prior detectable invasion of axillary lymph nodes<sup>(5)</sup>. Qizilbash et al pointed out a preferential occurrence of these tumours in the area of nipple and areola. The tumour is usually small with a mean diameter of 2 to 3 cm<sup>(6)</sup>.

The histologic and cytological appearance of adenoid cystic carcinoma in the breast is similar to the other sites like salivary glands, external ear, respiratory tract, cervix, bartholin gland and prostate gland<sup>(7)</sup>. Extramammary adenoid cystic carcinoma has a worse prognosis with a five year survival of 30 to 50%<sup>(1,2)</sup>. Recent reports described characteristic features on FNAC, to enable pre-operative diagnosis<sup>(7,8)</sup> cellular aspirates with tightly cohesive aggregates of cells with enclosed spheres and inter connecting cylinders of acellular material are characteristics. The principal cell type represents the epithelial cells and a

minor proportion of cells are ovoid to spindle shaped with hyperchromatic nuclei, representing myoepithelial cells. Histologically adenoid cystic carcinoma of the breast is characterized mainly by small basaloid cells either with solid cribriform pattern or tubular growth patterns enclosing pseudoglandular space with scant eosinophilic material<sup>(7)</sup>. Another distinctive histological feature of adenoid cystic carcinoma is the biphasic cellularity with myoepithelial cells intermixed with another cell type<sup>(7)</sup>.

Several studies have investigated the possible correlation between histological grade and prognosis. Some reports conclude that a solid variant of mammary adenoid cystic carcinoma had a more aggressive clinical course. Prognosis appears to be favourable and axillary lymph node involvement was uncommon. Qizilbash reviewed 95 well documented cases with lymph node metastases documented in only one case<sup>(6)</sup>. Distant metastases are unusual and tend to occur without previous lymph node involvement<sup>(8)</sup>. Recurrence after local excision has been reported by various authors<sup>(8)</sup>. Tumours rarely show positivity for estrogen and progesterone receptors<sup>(8)</sup>.

There is no consensus on optimal treatment for adenoid cystic carcinoma of the breast. Surgical management has evolved from radical mastectomy to breast conserving surgery<sup>(8)</sup>.

The statistical numbers for each have been too small to clearly confirm which of these surgical treatments may be best. The role of radiotherapy chemotherapy or hormonal therapy is unproved<sup>(8)</sup>. Sumphio et al suggested that wide local excision could be curative because of prolonged clinical course, good prognosis and almost nonexistent lymph node involvement<sup>(10)</sup>.

In conclusion, adenoid cystic carcinoma, although has a good prognosis, accurate diagnosis and treatment is important clinically. Although rare, local recurrence and distant metastases may occur long after initial treatment and close follow up is mandatory.

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