

# Carcinoma of the Axillary Breast

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## Abstract

Axillary breast is one of the varieties of polymastia which is characterized by the presence of more than 2 breasts. It may cause symptoms during pregnancy, lactation, or in the premenopausal period. Unless there are obvious symptoms of lactation or the assistance of further imaging studies such as mammography and breast ultrasound, the diagnosis is often confused with subcutaneous lipoma. The incidence of axillary breast cancer is low but it should be investigated and treated properly in view of another breast cancer in the embryonic milk-line. In this paper we reviewed 4 cases of axillary breast cancer and documented some articles regarding aberrant breast and carcinoma arising from it. It is suggested that subcutaneous nodules of uncertain origin around the periphery of the breast should be viewed with suspicion and treated properly.

**Key Word:** Axillary breast cancer

## INTRODUCTION

Embryologically, ectopic axillary breast tissue, as opposed to axillary components of the tail of Spence, occurs as a result of the failure of resolution of the embryologic mammary ridge, an ectodermal thickening developing from the axilla to groin bilaterally on the ventral surface of the human embryo, seen first in the sixth week of development. These are referred to as the milk lines. As the embryo develops, all but the pectoral portion of the original mammary ridge at the area of the fourth intercostal space resolves, leaving normal bilateral pectoral breast tissue.<sup>1,2</sup>

The incidence of ectopic accessory breast tissue is uncertain, but it is usually accepted to be found in 1–2% of humans.<sup>3</sup> In the presence of a fully developed areolar complex, ectopic breast tissue will function as a normal breast, including lactation.<sup>1</sup> All tumors occurring in normally located breast tissue can occur in aberrant breast tissue. Benign or malignant tumors such as carcinoma, intraductal papilloma, fibroadenoma and fibrocystic disease have all been described, though tumors of aberrant breast tissue are

a rare condition. Carcinoma occurs more frequently than benign tumors.<sup>4</sup>

## CASE REPORT

### Case 1

A 70-year-old woman presented with a palpable mass on the left axilla on May 18, 1987. About 10 months before, a bean-sized palpable mass on the left axilla was noticed by the woman and it continued to grow. One month before admission, skin rashes developed around the mass and the mass grew to infant fist size. The woman visited a local clinic and there underwent a needle aspiration biopsy of the mass on April 25, 1987. She was referred to our hospital for malignancy suspected of needle aspiration biopsy. Physical examination revealed a 5 × 5 cm-sized multilobulated firm movable mass with a nodular surface on the left anterior axillary fold. It was surrounded by irregular skin rashes. The mammography was reported as showing a large advanced left tail of breast malignancy with lymphedema and metastatic lymphadenopathy with small hidden malignancy. The patient underwent an axillary mastectomy with lymph node dissection. The pathologic examination of the removed tissue revealed infiltrating ductal carcinoma extending to the underlying fascia. Eight lymph nodes recovered were negative for metastatic disease.

Received May 6, 1998

Accepted May 10, 1999

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There was no distinct postoperative event.

Postoperative radiation treatment was employed as well as tamoxifen therapy. Follow-up care was carried out at regular intervals for 6 months. There was no evidence of disease during this period.

### Case 2

A 73-year-old woman was seen in November 1987 with a palpable mass of 2 months' duration on the left axillary area. She had undergone a right-side modified radical mastectomy due to right breast cancer in November 1985 at our hospital. At that time, the pathology was reported as a 2 cm-sized infiltrating ductal carcinoma with no lymph-node involvement. The disease was compatible to stage I. No adjuvant therapy was employed. Follow-up care was carried out at regular intervals. At admission, physical examination revealed a 3×3 cm-sized mass on the left anterior axillary fold. It was surmounted by a smooth hyperpigmented prominence resembling a nipple. On palpation it was a hard and fixed mass with a nodular surface. An incisional biopsy was performed and it was found to be a carcinoma. An axillary mastectomy with axillary dissection and left upper outer quadrantectomy was performed. Histopathologic examination showed partly mucoid residual mucinous carcinoma in the axillary breast and 10 lymph nodes were negative for metastatic disease. Her postoperative course was uneventful. The woman's menstruation had been terminated since she was 50 years old and she was administered with adjuvant hormonal treatment with tamoxifen. To date she remains well with no evidence of disease, more than 137 months following the second cancer.

### Case 3

A 35-year-old woman was seen November 2, 1996 for proper management of axillary breast cancer. She had undergone an excisional biopsy for a palpable axillary mass presenting a 0.7×0.5-cm nodule at a local clinic on October 19, 1996. The pathology report revealed an infiltrating ductal carcinoma of the ectopic breast. No nipple/areolar complex was identified grossly at that time. The metastatic survey was negative. Excision of the right breast nodule and an axillary dissection were carried out. The pathology report was fibrocystic disease in the breast tissue. Nine-

teen axillary lymph nodes were negative for metastatic disease. The patient's postoperative course was uneventful. No adjuvant chemotherapy was employed.

### Case 4

A 47-year-old woman was seen February 1, 1997, for an axillary mass of the left side. She had discovered the mass 4 years previously but no treatment measure was attempted. Recently the mass had been increasing in size. So she visited a hospital and underwent an excisional biopsy of the mass in the left axilla on Jan. 15, 1997 because malignancy was suspected on fine needle aspiration biopsy. The biopsy revealed an infiltrating ductal carcinoma arising in the ectopic mammary gland. The tumor was 3.5-cm in size. Under the impression of an axillary breast cancer, a radical operation consisting of axillary mastectomy and axillary dissection was performed. A histopathologic report revealed breast tissue without evidence of ductal carcinoma and 19 axillary lymph nodes were reactive hyperplasia without metastatic disease. The patient was discharged without any problem.

Postoperatively, she received a course of chemotherapy and radiation therapy.

## DISCUSSION

The incidence rate of accessory breast is not known, but it is probably about 1–2% and it is approximately twice as common in females as in males.<sup>3,4</sup>

Aberrant breast comes under the general classification of polymastia. This latter condition in humans is characterized by the presence of more than two breasts. Under this general heading a differentiation is made between supernumerary breasts and aberrant breasts. Supernumerary breasts have a nipple, areola, or both, with or without glandular breast tissue occurring along the nipple line, running from axilla to groin, usually below the breast and they can extend down as far as the vulva but may occur in other areas, including the cheek, neck, shoulder, midline of chest or abdomen, flank, hip, thigh, and buttock. Aberrant breasts, by contrast, consist of ectopic breast tissue having no nipple or areola and are usually found in proximity to the normal breast, for example in the axilla, but may occur less frequently in the infra-

clavicular, juxtasternal or epigastric regions.<sup>3</sup> The axillary site is the most common.<sup>5</sup> Aberrant breasts are subject to the same diseases as normal pectoral breast tissue and commonly respond to the hormonal stimulations of menses or pregnancy provocative of engorgement and discomfort. It is well established that the incidence of carcinoma occurring in supernumerary breasts is low. In a review of the literature, Story noted that many American and English authors were of the opinion that carcinomatous changes in accessory breast tissue occurred rarely.<sup>4</sup> Chiari found only 3 cases in a series of 918 patients who were operated on for breast cancer over a 10-year period.<sup>6</sup> In our experience, only 4 cases (0.28%) of axillary breast cancer were found among a total of 1,430 cases of operated breast cancer from March 1987 to February 1997 at Yonsei University Medical Center. The condition is, therefore, likely to be misdiagnosed unless it is kept in mind whenever an unusual swelling is seen in the area around the breast. Carcinoma was found in 1 case (3.8%) in a series of 26 operated cases of aberrant breast of the axilla by deCholnoky.<sup>7</sup> The most common tumors found in aberrant breast tissue are cancer and fibroadenoma, with the former being the more frequent.<sup>8</sup> Most carcinomas of aberrant breast tissue occur near the axilla. Copeland and Geshickter noted 7 of 9 cases occurred in the axilla and 2 occurred in the sternal region.<sup>8</sup> The ages of the patients varied from 39 to 69 years of age.<sup>4</sup> Chiari collected 57 cases of carcinoma of aberrant breast tissue from the literature and added 3 of his own. Forty-three of these occurred in the axilla, 6 in the infraclavicular region, 6 in the sternal area, and 5 in the epigastrium, close to the xiphisternum.<sup>6</sup>

The presence of aberrant breast tissue is often noticed only when breast engorgement takes place during pregnancy and lactation, or when tumor formation occurs within it. There is no convincing evidence that this tissue is more prone to malignant change than normal breast tissue, and therefore excision of aberrant breast tissue which is not causing symptoms and contains no tumor is not normally indicated.<sup>7</sup>

In our 4 cases of accessory breast cancer, all occurred in the axillary region, 1 was regarded as supernumerary breast and the others were comprised of aberrant breast. All of them presented with a palpable mass in the axilla region. One case was followed by contralateral breast cancer, which was an infiltrating

ductal carcinoma and modified radical mastectomy had been performed. The pathology reports on removed specimens were infiltrating ductal carcinoma in all cases with 1 exception, a partly-mucoid mucinous carcinoma. All cases were negative for axillary lymph node metastasis, but in 1 case the tumor extended to the underlying fascia.

Carcinoma of aberrant breast tissue may be treated by wide local excision or by radical mastectomy. DeCholnoky advocated wide local excision with the removal of adjacent lymph nodes as the treatment of choice and suggested that the breast should only be removed if any suspicious nodules are palpable within it.<sup>7</sup> In the case of conserving the breast, particularly careful follow-up is, of course, necessary to exclude any later manifestation of an occult primary neoplasm in the normal breast parenchyma. However, the mode of treatment at present is obviously undergoing tremendous change with the advent of adjuvant chemotherapy. Groups such as those led by Dr. Fisher in the U.S. and Dr. Bonadonna's group in Italy would seem to indicate that adjuvant chemotherapy has its place in aberrant breast tissue with malignancy where normal enbloc dissections cannot be performed.<sup>9</sup> It has been suggested that, though no available prognostic data has been established, the prognosis of carcinoma of aberrant breast tissue is thought to be poorer than that of carcinoma of normal breast tissue because an early diagnosis is difficult and these tumors metastasize early to lymph nodes which exist near the primary tumor.<sup>3</sup> Though there were no available prognostic conclusions because of a lack of experience, the prognosis is thought to be poor for an early diagnosis and the tumor exists near the axillary lymph nodes which metastasize earlier than normal breast cancers do.<sup>2</sup> Copeland and Geschickter noted only one 5-year survivor out of 9 cases, while Smith and Greening in 1972 reported 3 cases which were treated by local excision of the tumor, with additional axillary lymphadenectomy in 2 cases.<sup>8,5</sup> Postoperatively, each patient received radiation therapy to the axilla and supraclavicular region and, in 1 instance, 3 years had passed with no tumor recurrence. Chiari, however, in a review of 60 cases, including 3 of his own, concluded that no differences exist in the prognosis between carcinoma of aberrant breast tissue and those of normal breast tissue.<sup>6</sup>

In our series, age distribution was from 35 to 73 years. The disease states were as follows: stage I

disease in 2 cases and stage IIa in the other 2 cases. The treatment was radical axillary mastectomy and axillary dissection in all 4 cases and adjuvant measures were employed case by case: chemotherapy and radiation therapy in the fourth case; radiation and tamoxifen therapy in the first case; and tamoxifen hormonal therapy alone in the second case. The one remaining case underwent no adjuvant therapy. Follow-up care was carried out at regular intervals in 1 case for 137 months with no tumor recurrence.

Carcinoma of aberrant breast of the axilla is a rare condition, being most often confused with a subcutaneous lipoma.<sup>10</sup> Radical excision of the axillary tumor, including the axillary lymph nodes, is the treatment of choice. However the introduction of combination chemotherapy and radiation on the remaining breast parenchyma in breast-conserving cases have somewhat altered the treatment of axillary breast cancer. The prognosis of carcinoma of the axillary breast is not well established because of the lack of experience but it is generally regarded as poorer than that of ordinary breast cancer.

The rareness of this disease and confusion with some similarly manifested diseases offer some difficulty in diagnosis. The most common erroneous clinical diagnosis is lipoma unless that possibility is kept in mind. This serves to emphasize that aberrant breast carcinoma has to be treated properly as early as possible by detecting any suspicious subcutaneous nodules

in the area around the periphery of the breast, especially in the axillary site.

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