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Accessory breast tissue in axilla masquerading as breast cancer recurrence

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ABSTRACT

Ectopic or accessory breast tissue is most commonly located in the axilla, though it may be present anywhere along the milk line. Development is hormone dependent, similar to normal breast tissue. These lesions do not warrant any intervention unless they produce discomfort, thus their identification and distinction from other breast pathologies, both benign and malignant, is essential. We report a case with locally advanced breast cancer who presented with an ipsilateral axillary mass following surgery, radiotherapy, and chemotherapy. Subsequent evaluation with excision biopsy showed duct ectasia in axillary breast tissue and the patient was continued on hormone therapy with tamoxifen.

KEY WORDS: Accessory axillary breast, breast carcinoma, tamoxifen

Accessory breast tissue, which is an aberration of normal breast development, is an uncommon finding in the normal population and rarer still in cases with breast cancer. The presence of ectopic breast masses may simulate recurrence and cause unnecessary anxiety to patients if symptomatic or if presenting sequentially in cases with known and treated breast cancer. A conservative approach is warranted and therefore it is necessary for oncologists to be aware of this entity, so that proper management in the form of hormone therapy or surgery for symptomatic lesions, and reassurance in others, may be instituted.

CASE REPORT

A 36-year-old premenopausal multiparous female presented to our institute with complaints of a painless, progressively enlarging lump in her left breast for 1 year. There were no comorbid conditions or history of benign breast disease. Family history of malignancy was absent. On examination, she had an 8×5 cm lump in the upper outer quadrant of the left breast with a mobile, ipsilateral, axillary lymph node. Systemic examination was unremarkable. Trucut biopsy from the lump revealed invasive ductal carcinoma (IDC) (ER strongly positive, PR negative, Her-2/neu 3+). Following staging workup, a diagnosis of carcinoma left breast, T3N1M0, was given. She received three cycles of neoadjuvant chemotherapy with a DE regimen (docetaxel 75 mg/m^2 and epirubicin 75 mg/m^2 every three weeks) followed by left modified radical mastectomy. Postoperative histopathology confirmed IDC in a 7×5 cm tumor, with negative resection margins and no lymphovascular invasion. All 13 resected nodes were involved by tumor, with perinodal soft tissue extension. She received three cycles of DE and locoregional radiotherapy to the left chest wall, supraclavicular fossa, and axilla to a dose of 50 Gy over 5 weeks, followed by tamoxifen 20 mg daily in the adjuvant setting. She maintained premenopausal gonadotropin hormone levels post-treatment. Two months following completion of radiotherapy, she developed a painful 2×2 cm lump in the left axilla. Fine needle aspiration cytology was inconclusive, and considering the locally advanced presentation at diagnosis, a high index of suspicion of recurrence was maintained and metastatic workup was repeated along with a right mammogram, all of which were normal. She underwent an excision biopsy of the axillary mass. Histopathology revealed dilated ductal structures surrounded by fibrous tissue and chronic inflammatory cells [Figure 1]. No malignant cells were seen. A diagnosis of duct ectasia in accessory breast tissue in the axilla was given, however no nipple/areola complex was identified. A review of the pathology of the modified radical mastectomy (MRM) specimen did not reveal any remnant breast tissue near the axilla. She was subsequently continued on tamoxifen, with a close clinical follow-up. She is asymptomatic, with no evidence of recurrence, at 1 year of follow-up.

DISCUSSION

Bilateral mammary ectodermal ridges, also known as the milk line, run along the ventral surface of the body from the anterior axillary folds to medial aspect of inguinal folds; they involute during embryogenesis except in the pectoral region, where they give rise to breast tissue.[1] Persistence of tissue

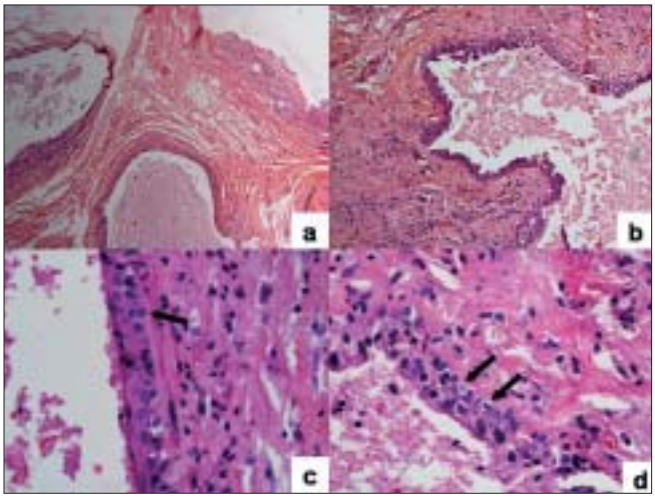

Figure 1: Photomicrograph showing dilated ducts with intraluminal secretion (a; H&E, ×40). The duct is lined by cuboidal cells with focal multilayering (b; H&E, ×100). High-power demonstrates the benign ductal epithelial cells and interspersed myoepithelial cells (arrows, can c & d H&E, ×400)

along these ridges may produce ectopic breast tissue; this occurs with an incidence of 2-6% in the normal population and the commonest location is the axilla.[2] This tissue may contain all three elements - parenchyma, areola, and nipple, or any combination of them. It is hormone responsive and undergoes physiologic changes such as enlargement and milk secretion during pregnancy. Pathological changes such as mastitis, fibroadenoma, cystosarcoma, carcinoma, and duct hyperplasia have been reported in such accessory breast tissue.[3-5] Incidence of accessory breast among the breast cancer population is only 0.3-6%.[2]

Detection of such accessory axillary breast masses may cause unnecessary alarm during or following treatment in patients with known breast cancer, as happened in the present case. However, in the present case, it was difficult to explain how its detection was delayed for so long despite the fact that the patient had undergone both axillary dissection and axillary radiotherapy. Although it is unlikely that the accessory tissue appeared *de novo* following surgery, we cannot rule out the possibility that it may have been ignored earlier or that inflammation caused it to enlarge and become prominent, thus calling attention to its presence. The clinical differential diagnoses of axillary masses may include neurofibroma, lipoma, lymphoma, and hidradenitis suppurativa.[6] Kitamura *et al*. reported a case of bilateral axillary mastopathy occurring concurrently with a proven left breast carcinoma. There was a dilemma regarding the nature of the right axillary mass and its proper management. A cytopathological examination of tissue from the bilateral axillary masses showed adenosis with fibrocystic changes. Therefore, the patient was managed with only a modified radical mastectomy on the left side, and an unnecessary right mastectomy could be avoided.

To overcome such confusion, it is recommended that all such suspicious masses should undergo cytology or a biopsy from the mass if the former is inconclusive. Management of proven benign accessory breast tissue is essentially conservative, though some authors have advocated surgical removal for management of symptomatic lesions or for cosmesis.[7]

Tamoxifen has been effective in preventing ipsilateral as well as contralateral breast cancer recurrence, and there is no reason to believe that this benefit would not extend to the ectopic breast tissue as well.[8] Women at high risk of breast cancer, especially those under 50 years, have shown a reduced incidence of benign breast diseases, including duct ectasia, with tamoxifen use.[9] Considering these findings, we decided to continue our patient on tamoxifen in view of the strong estrogen receptor positivity seen.

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