

Fibroadenoma of axillary ectopic breast tissue: A rare clinical entity

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Received: Aug 4, 2015; Revised: Aug 29, 2015; Accepted: Sep 20, 2015

Abstract: Ectopic breast tissues may be affected by the same physiological and pathological alterations seen in the normal breast, including fibroadenoma. Since valid studies describing this anomaly are rare, we decided to report a case of fibroadenoma in axillary breast tissue. We report a 28-year-old nulliparous woman presented with a left axillary lump, for which clinical impression of axillary lymphadenopathy was made for two months. After surgical resection of the nodule, the histology was identical to the fibroadenoma seen in the ectopic breast tissue. The histopathology was identical to the fibroadenomas seen in the ectopic breast tissue and those observed along the milk line. Therefore, fibroadenoma in an ectopic breast tissue must be kept in mind in the differential diagnosis of axillary mass.

Keywords: Fibroadenoma, Ectopic breast, Axillary, Breast

Background

The human breast consists of glandular tissue surrounded by thoracic fascia and held in place by Cooper's ligaments (1). During puberty, normal breast changes occur due to hormonal influences. The adipose tissue of the breast increases and ductal growth is stimulated by estrogen. Simultaneously progesterone acts on the breast to initiate alveolar budding and lobular growth (2). The thickened ectoderm forms mammary ridges (or milk lines) extending bilaterally on the ventral surface of the embryo from the base of the hind limb. Failure of regression of this ridge outside the normal position of the breast leads to the development of supernumerary breasts and nipples or ectopic breast tissue. Primary tumors of the breast are rare and most often benign, with the most common diagnosis being fibroadenoma (2-6). The ridges extend from the axilla through the thorax to the inguinal region and normally rapidly regress in all regions except the thorax (7-9). Masses in axilla like ectopic breast tissue may pose a diagnostic challenge and should be differentiated from lipoma, hidradenitis, follicular cyst or enlarged lymph node, hamartoma or phyllodes and etc. (9-12). The most common malignant neoplasm in this location is lymphoma; although primary or metastatic solid tumors are rare, tumors, such as lipomas and other vascular or lymphatic malformations may be present in the milk line (8). Ectopic breast tissue can take different forms, including any of the normal physical elements of normal breast, such as glandular tissue and ductal elements in addition to connective tissue elements. Ectopic breast tissue has been reported in adolescence, and fibroadenoma is the most common cause of a mass in the normal adolescent breast (10, 11). Malignant breast tumors have been reported in ectopic axillary breast tissue, but never in children or adolescents (12). Ectopic fibroadenomas in adults have been reported also in other locations such as the perianal region and vulva (13-16).

Case presentation

We report a 28-year-old nulliparous woman with a non-significant medical history presented with a left axillary

lump which was characterized as firm, nontender, mobile and measured approximately 2 cm in diameter, for which clinical impression of axillary lymphadenopathy was made for two months. The patient performed surgical resection and the pathology was identical to the fibroadenomas seen in the ectopic breast tissue. The excised mass showed well circumscribed, firm spherical mass with smooth, rounded border measured 5×3×3 cm, and showed a tan, smooth, the homogeneous appearance on cut section (Figure 1).

Microscopic examination showed a fibroadenoma arising in ectopic breast tissue (Figure 2). The lesion was incompletely surrounded by a thin fibrous capsule. Breast ducts lined by double layer epithelium were embedded within a fibrous stroma. The stroma showed focal hypercellularity, but did not show necrosis, significant mitotic activity or nuclear atypia.

Discussion

Ectopic breast tissue is found in about 2–6% of the population (8). Development of breast tissue begins at approximately the sixth week of fetal life, as epidermal cells migrate downwards toward the mesenchyme and form the primitive mammary ridges or the milk line (3). The differential diagnosis of an axillary mass in an adolescent includes many pathological processes such as neoplastic, infectious, and vascular lesion. Most commonly ectopic breast tissue presents during pregnancy, though the age at presentation can vary (8). Ectopic breast tissue can take different forms, including any of the normal physical elements of normal breast, such as glandular tissue and ductal elements in addition to connective tissue elements. Malignant breast tumors have been reported in ectopic axillary breast tissue, but never in children or adolescents (12).

Indications for surgical intervention include cosmetic intentions, rapidly growing or large masses, history of radiation therapy, malignancy and high risk genetic predisposition (7). Masses in axilla like ectopic breast tissue

may pose a diagnostic challenge and should be differentiated from lipoma, hidradenitis, follicular cyst or enlarged lymph node, hamartoma and phyllodes tumors. (9-12). The most common malignant neoplasm in this location

is lymphoma, although rarely primary or metastatic solid tumors. Benign tumors, such as lipomas and other vascular or lymphatic malformations may be present in the milk line (8).

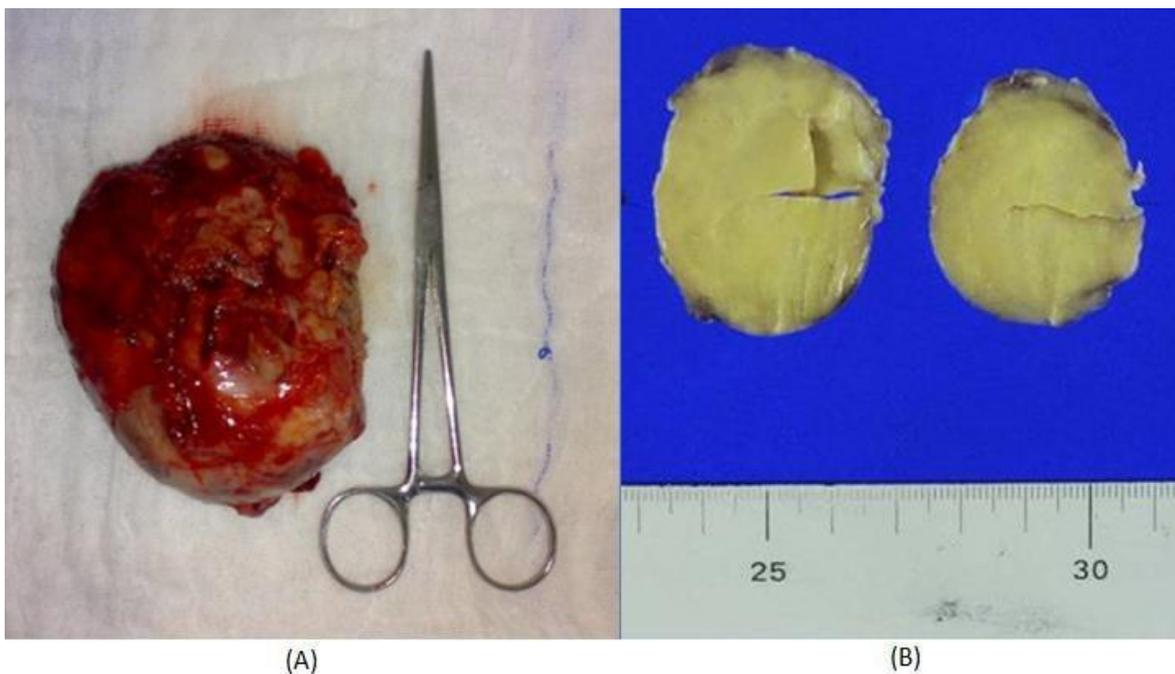


Figure 1. (A) Well circumscribed, firm spherical mass with smooth, rounded border measured 5*3*3 cm; (B) cut section showed a tan, smooth, and homogenous appearance.

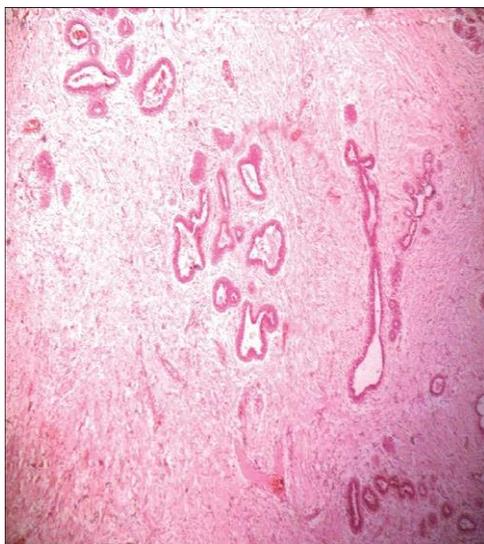


Figure 2. The ductal structures are lined by benign columnar epithelium and the stromal cells are fibroblastic in appearance without necrosis, significant mitotic activity, or nuclear atypia (hematoxylin and eosin, 40x).

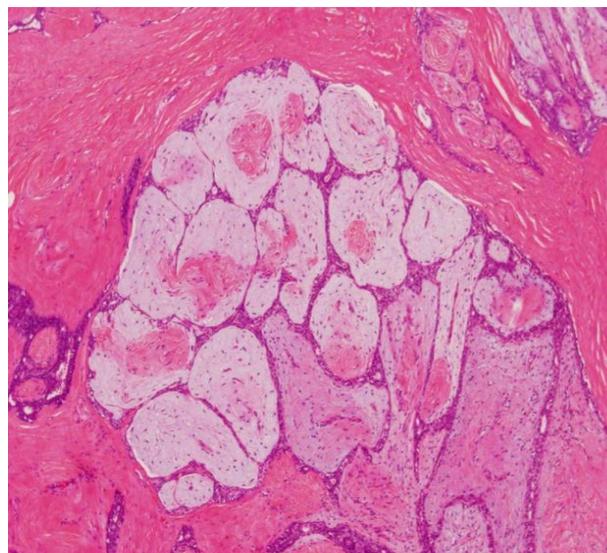


Figure 3. Microscopic appearance of the fibroadenoma arising in ectopic breast tissue; Breast ductal structures are embedded within a fibrous stroma; no lobular tissue is noted (hematoxylin and eosin, 10x).

Conclusion

Infections are a common cause of axillary lymphadenopathy and a variety of agents are considered to be the source, but ectopic breast tissue must be kept in mind as a differential diagnosis, and according to the valid paper. The first imaging modality might be used for investigation of an axillary mass is ultrasonography, which is helpful to distinguish between vascular lesions, and between solid and cystic masses (17).

Acknowledgement

We are grateful to Department of pathology and surgery of Ahvaz Jundishapur University of Medical Sciences for scientific support.

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