

Benign Phyllodes Tumor of Axillary Tail USG and Elastography Evaluation with Histopathological Correlation

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Abstract

The axillary tail, also known as spencer's tail or axillary process, is a continuation of tissue from the upper lateral quadrant of the breast that travels into the axilla through a foramen of Langer in the deep fascia. Axillary inflammation or lump is a typical clinical symptom that necessitates imaging evaluation. Since the axilla consists of lymph nodes as well as nonlymphatic tissue such as accessory breast tissue, skin, fat, muscles, nerves, and blood vessels, it has a wide variety of differential diagnoses. The radiologists should be well acquainted with axillary anatomy and imaging aspects of various axillary lesions. Here, we present a 35-year-old female with a right axillary lump which was suggestive of benign tumor on ultrasonography and was proven to be benign phyllodes tumor on histopathology.

Keywords: Axilla, benign tumor, phyllodes tumor, ultrasonography

INTRODUCTION

The axillary space is small and superficial, and sonography is the main modality in the diagnosis of axillary pathologies. Unlike computed tomography (CT) and magnetic resonance imaging, ultrasonography may assess crucial factors such as shape, margin, the shape of hila, thickness of the cortex, internal structures, echogenicity, and vascular component in cases of lymphadenopathy. Furthermore, ultrasound can be used to guide a percutaneous needle biopsy of axillary masses for histopathologic characterization.^[1]

CASE REPORT

A 35-year-old female visited the hospital in view of a mass lesion in the right axilla for the last 4 months [Figure 1]. The lesion was insidious in onset and gradually increasing in size over a period of the last 90 days. On inspection, the lesion was well-defined, oval in shape, with no overlying skin ulceration or satellite lesions. The lesion was painless and nontender with no local rise of temperature on palpation. On local examination, the lesion was mobile. She had no complaints related to the breast such as a palpable mass. There is no history of trauma

or similar complaints in the past. There was no significant family history.

The patient was advised ultrasonography of bilateral breast and axilla. There was a well-defined oval hypoechoic well-encapsulated lesion wider than taller, in the region of the axillary tail of the right breast right axilla measuring approximately 3.6 cm × 1.8 cm [Figure 2]. Few fluid containing clefts are also seen in the lesion. The above ultrasonography features suggest a benign lesion giving a BI-RADS score of 2. Minimal peripheral vascularity was seen on Doppler. On elastography using a 12–18 MHz frequency probe, ROI A was taken in the hypoechoic mass lesion and ROI B in the surrounding soft tissue and fat, the lesion appeared soft with strain ratio of 1.9 suggesting a benign lesion. According to the Tsukuba scoring system, the lesion showed blue and green mosaic, suggesting predominantly soft tissue nearly 90% including few peripheral areas as well (SCORE 2) [Figure 3]. The ultrasound features were suggestive of benign breast

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lesions, probably fibroadenoma, or benign phyllodes tumor. Both breasts revealed no obvious abnormality without any axillary lymphadenopathy. As the USG and elastography features indicated a benign lesion, the core biopsy was not advised.

The patient was posted for excision of the right axillary mass under local anesthesia and the sample was sent for histopathological diagnosis. On histopathology, the lesion turned out to be benign phyllodes tumor, giving typical leaf-like epithelial pattern, with low stroma-to-epithelium ratio [Figure 4].

DISCUSSION

The axillary space is small and superficial, and sonography is the main modality in the diagnosis of axillary pathologies. Skin lesions, infections, hematomas, lymphadenopathy (hyperplastic, inflammatory, and benign or malignant lesions), accessory tissue in the breast, fibroadenoma, phyllodes tumor, fibrocystic alteration, lump

due to postoperative fluid, primary breast malignancy, and intramuscular neoplasms are the leading differential diagnoses for axillary lesions.^[2]

Fibroadenoma is one of the most common breast growth that affects about half of all young women. Despite this, fibroadenoma of the axilla is a rare occurrence. Other causes of mass in the axilla should be investigated as differential diagnoses, such as lymphadenopathy, sebaceous cyst, or fatty lesions such as lipoma.^[3]

Phyllodes tumor is a rare fibroepithelial tumor that mimics fibroadenoma but differs in that it has a minor but distinct potential to recur locally or to behave like a completely malignant sarcoma in terms of metastatic behavior. It accounts for between 0.3% and 0.9% of all breast tumors. The majority of occurrences have been in women in their 40s and 50s, with only a few in teens.^[4]



Figure 1: Lump in right axilla (blue arrow)

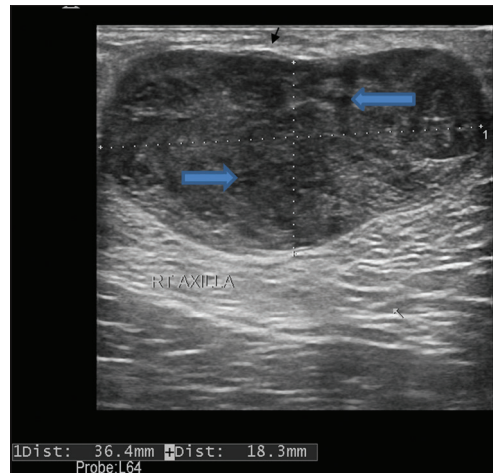


Figure 2: Well-defined oval hypoechoic well-encapsulated lesion with transverse diameter more than vertical diameter, in the region of axillary tail of right breast in the right axilla. Few fluid containing clefts (blue arrow) are also seen in the lesion

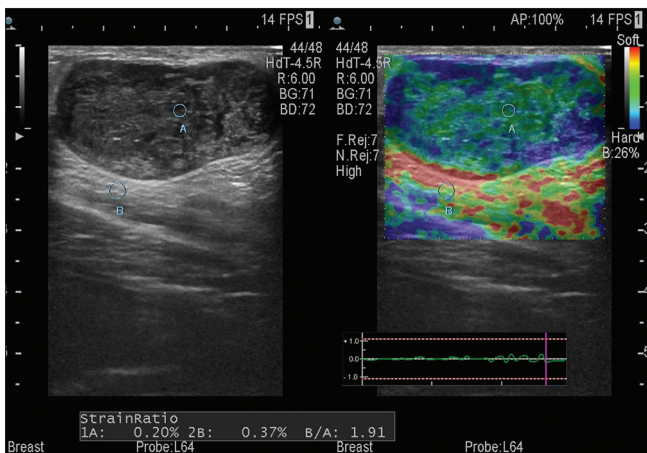


Figure 3: On elastography, the lesion appeared soft with strain ratio of 1.9 suggesting a benign lesion. According to Tsukuba scoring system, the lesion showed blue and green mosaic (SCORE 2)

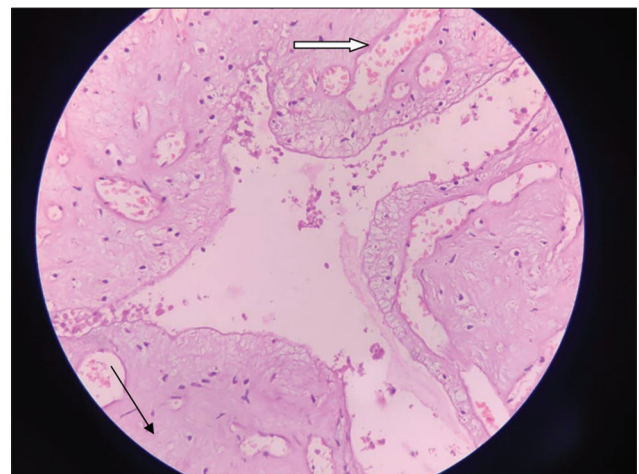


Figure 4: Low stroma (black arrow) to epithelium ratio and cleft-like epithelial pattern (broad arrow), also seen are inflammatory cells and blood vessels (H and E, ×40)

A linear array transducer with a high frequency (7.5–17 MHz) should be used for axillary ultrasonography.^[5]

Ultrasonography of fibroadenoma has several characteristics that include a variety of presentations, most of which are similar to those found in a benign tumor. A circular hypoechoic mass with confined edges is one of the most common features.^[6] The most common ultrasonography manifestation of phyllodes tumor is an inhomogeneous, solid-appearing mass. A solid mass with single or numerous cystic gaps, round or cleft-like, with posterior acoustic amplification strongly confirms the diagnosis of phyllodes tumor.^[7]

Score 1 represents the masses of green color that indicate soft and loose structure, according to Tsukuba scoring guidelines. Score 2 stresses a soft-rigid inner structure that is heterogeneously distributed and is a mosaic of blue and green codes. A Score 3 mass has a blue center and a green peripheral implies that the core of the mass is tougher than the perimeter. Score 4 indicates that the entire structure is firm and rigid, with all mass-coded blue. Finally, a 5 shows a blue encoding of a region greater than the mass's size, which includes the mass and its surrounding tissue. It refers to the desmoplastic reaction's hardening of the mass and surrounding tissue. Finally, a 5 shows a blue encoding of a region greater than the mass's size, which includes the mass and its surrounding tissue.^[8] The fat-to-lesion ratio is a semiquantitative measure of the relative stiffness of breast lesions that looks at the difference in compliance between the lesion and the fat tissue around it.^[9] Benign lesions have a lower strain ratio (mean 2.12 ± 1.72) than malignant lesions (mean 6.91 ± 3.96).^[10]

CONCLUSION

Diagnosing a phyllodes tumor on ultrasonography can be tricky, especially in uncommon locations such as the axilla, but with the help of the distinguishing feature, such as clefts within the lesion on ultrasonography and with the help of elastography to confirm its benign nature can help the patient with early diagnosis and excision of the tumor.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent form. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that names and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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