Unilateral Axillary Lymphadenopathy

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Case Presentation

A 37-year-old woman presented with pain and tingling underneath and behind her left breast for the past two weeks intermittently. She denied trauma or any inciting event. Past medical history and review of systems were noncontributory. Physical exam of the breasts and left chest wall is negative. The patient was subsequently referred for diagnostic mammogram, ultrasound, and MRI breast (Figs A-D).

Figure. Bilateral MLO (A) and magnified ML view of the left breast (B), demonstrate asymmetric left axillary adenopathy. Targeted ultrasound of the left axilla (C) confirms enlarged axillary lymph nodes with irregular, thickened cortex and loss of the fatty hilum. Sagittal T1 post-contrast fat suppressed MR image (D) reveals an enhancing mass in the middle depth left breast that is mammographically occult. Left axillary adenopathy is again demonstrated.
Key imaging finding

Unilateral axillary lymphadenopathy

Differential diagnoses

Breast carcinoma with axillary spread
Reactive lymphadenopathy
Metastases/Lymphoma
Systemic disease
Granulomatous disease

Discussion

Unilateral axillary adenopathy can present a diagnostic and therapeutic dilemma. Differentiating benign versus malignant causes can be a challenge. Features of axillary lymph nodes that may be considered abnormal include increased size (greater than 2 cm), homogeneously increased density, loss of normal architecture, and occasionally internal calcifications. When detected, a thorough history and physical exam may aid in excluding benign causes, such as reactive adenopathy or granulomatous disease. In most cases, further imaging and often biopsy are performed to determine the etiology. A typical workup for unilateral axillary adenopathy detected on mammogram includes bilateral axillary ultrasound and tissue sampling. Additionally, MRI and nuclear medicine imaging may be contributory in the diagnostic and therapeutic approach.

Breast carcinoma with axillary spread.

Although primary breast carcinoma presenting as axillary adenopathy is relatively uncommon (some authors suggesting ranges of 4-12%), it must considered in the differential diagnosis of unilateral axillary adenopathy. Most women with axillary adenopathy due to metastatic disease have an obvious primary tumor. In fact, unilateral axillary adenopathy with an otherwise normal mammogram is a rare presentation of breast cancer, occurring in less than 1% of cases. Axillary nodes in the setting of metastatic breast cancer can appear dysmorphic with increased size and density and rarely have internal pleomorphic microcalcifications. If a mass is not seen on mammogram, an ultrasound can be performed but is often low yield without a suspicious mammographic finding. In such cases, lymph node biopsy is typically performed. Imaging with MRI is a another alternative to further evaluate for a mammographically occult mass.

Reactive Adenopathy.

Radiographic appearance of reactive adenopathy is nonspecific but typically consists of enlarged lymph nodes that maintain normal architecture (i.e. reniform shape and preserved fatty hilum). Clinical evaluation for infection or inflammation in the ipsilateral breast, axilla, arm, and hand is recommended. Common causes of unilateral reactive adenopathy include mastitis, breast abscess, an infected skin lesion, and cat scratch disease.

Metastases/Lymphoma.

Metastases and lymphoma may present with axillary adenopathy, which is more often bilateral but may be unilateral as well. Some of the more common extramammary malignancies that may present with axillary adenopathy include thyroid, lung, gastrointestinal, and pancreatic cancers. Ovarian metastases can also present with unilateral axillary adenopathy, but this is quite rare. Past medical history and prior imaging may be beneficial in these cases.

Granulomatous disease.

Axillary adenopathy can be seen in patients with granulomatous diseases, such as tuberculosis or sarcoidosis. Imaging features include enlarged axillary lymph nodes with coarse internal calcifications. If granulomatous disease is suspected, prior chest radiographs or chest CTs can confirm pulmonary granulomas and/or calcified mediastinal/hilar lymph nodes.
Collagen vascular disease.

Systemic diseases, such as systemic lupus erythematosus, rheumatoid arthritis (RA), and scleroderma can present with unilateral axillary adenopathy. The imaging characteristics of axillary nodes in systematic diseases are often nonspecific. One rare but unique imaging feature is gold deposits within the lymph nodes, which mimic internal calcifications; this feature is seen in RA patients treated with gold therapy.6

Diagnosis

Invasive ductal carcinoma with axillary spread.

Summary

Unilateral axillary adenopathy detected on imaging should be regarded as suspicious and warrants further investigation. Workup should include, at a minimum, diagnostic mammogram and axillary ultrasound (to confirm unilateral adenopathy); biopsy is often necessary. MRI may be contributory to detect mammographically occult breast masses, as in the case presented here, and is widely being used in the diagnostic approach for malignant axillary adenopathy in the absence of a mammographic abnormality. Nuclear medicine studies (such as PET and BSGI) may also have some benefit in evaluating for underlying breast malignancies.7 Although the diagnostic workup of unilateral axillary adenopathy remains variable, a prudent approach should make every effort to exclude a primary breast malignancy as the cause.

The views expressed in this material are those of the author, and do not reflect the official policy or position of the U.S. Government, the Department of Defense, or the Department of the Air Force.

References

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