Axillary lesions: Are they all lymph nodes? An algorithmic approach to differential diagnoses based on a 12-year imaging review

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Objectives

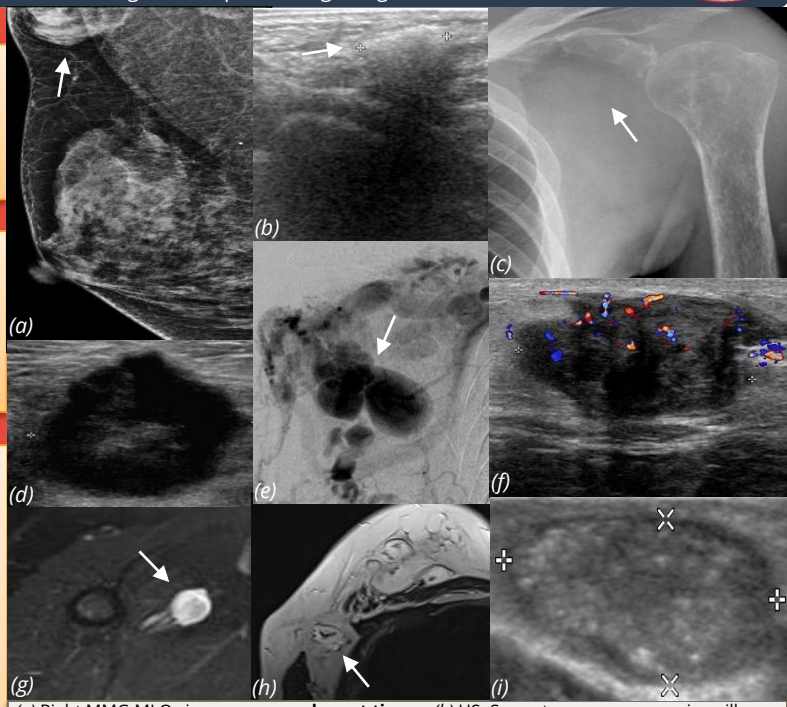
- To review the imaging findings of various entities of axillary lesions according to their anatomical origins.
- Emphasize on distinctive features that can be helpful in making the correct diagnosis.
- To devise an algorithm for the approach to axillary lesions.

Materials and Methods

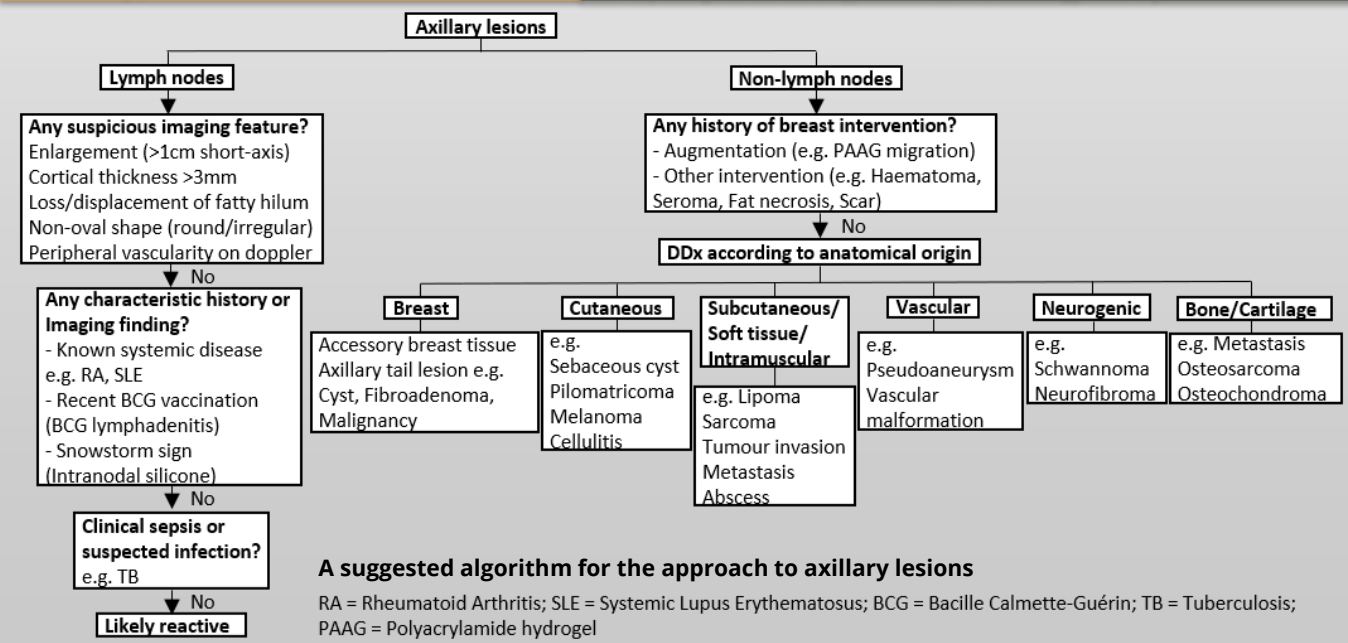
- Retrospective review of patients referred to our institution from 2008 to 2020.
- Radiological features were delineated by different imaging modalities including ultrasonography (US), mammography (MMG), plain radiography, computed tomography (CT), magnetic resonance imaging (MRI) and digital subtraction angiography (DSA).

Results and Discussion

- Lymph nodes with suspicious imaging features should undergo tissue diagnosis to exclude metastasis and lymphoma.
- In patients with characteristic clinical history and/or imaging findings to suggest benign causes of lymphadenopathy, conservative management would usually suffice.
- Fine needle aspiration for microbiological diagnosis may be helpful for suspected infection related lymphadenitis.
- After exclusion of more sinister pathologies, follow-up US is advised for reactive nodes.
- For non-nodal lesions, prior axillary surgery or breast augmentation might attribute to the axillary pathologies.
- Other non-nodal pathologies could be categorized according to their anatomical origins and managed accordingly.



(a) Right MMG MLO view: **accessory breast tissue**; *(b)* US: Snowstorm appearance in axillary lymph node, characteristic of **intranodal silicone**; *(c)* XR shoulder: Left scapular **osseous metastasis** with extension to axilla of a patient with known renal cell carcinoma; *(d)* US: Enlarged irregular lymph node with loss of fatty hilum, suggestive of **nodal metastasis** in a patient with known invasive ductal carcinoma of breast *(e)* DSA: **vascular malformation** *(f)* US: Subcutaneous hypoechoic lesion with irregular margin and internal vascularity – biopsy confirmed **liposarcoma** *(g)* MRI: T2 hyperintense **schwannoma** arising from axillary nerve with split fat sign *(h)* MRI: T2 hyperintense **PAAG gel migration** in a patient with history of breast augmentation *(i)* US: Hyperechoic lesion at junction of dermis and subcutaneous layer with tiny echogenic foci and a hypoechoic rim in a child, suggestive of **pilomatricoma**



A suggested algorithm for the approach to axillary lesions

RA = Rheumatoid Arthritis; SLE = Systemic Lupus Erythematosus; BCG = Bacille Calmette-Guérin; TB = Tuberculosis; PAAG = Polyacrylamide hydrogel

Conclusion

Familiarity with the characteristic imaging findings of various entities of axillary lesions according to their anatomical origins will be useful for radiologists in the formulation of a differential diagnosis and subsequent management plan.

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