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Case Report

Isolated eosinophilic mastitis: a rare breast disease mimicking malignancy

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ABSTRACT

Eosinophilic mastitis is a rare benign breast pathology which presents with lump breast and can mimic malignancy. So far eight reported cases have been found in literature review. All cases were associated with peripheral eosinophilia and systemic involvement except one. Isolated eosinophilic mastitis in the absence of peripheral eosinophilia or systemic involvement is a very rare presentation. Being one of the rare cases, prompted us to take up this case in our present study. A 40-year-old lady presented with progressively enlarging, slightly painful swelling in left breast of 15 days duration with no other relevant past and family history. The clinical differential diagnosis of mastitis and carcinoma was suggested. Aspiration cytology was reported as benign breast disease- fibroadenosis. Imaging studies undertaken were inconclusive. Case managed surgically with wide local excision. Post-surgical tissue specimen was subjected to histopathology examination and was diagnosed as eosinophilic mastitis. A prolonged follow-up revealed no recurrence.

Keywords: Eosinophilic, Mastitis, Breast

INTRODUCTION

Eosinophilic mastitis is a rare breast pathology characterized by intense infiltration of eosinophils around ducts and lobules.[1,2] Only few cases reported in the literature. Most of those cases were associated with peripheral eosinophilia and systemic involvement as in Bronchial Asthma, Churg- Strauss Syndrome and Hyper-eosinophilic syndrome.[3-6] Clinically it presents as a palpable breast mass and can mimic malignant disease. Histologically there is extensive infiltration of eosinophils around ducts and lobules. Lymphocytes and plasma cells may be present within the infiltrate. The epithelium of the involved ducts and lobules may appear reactive with enlarged nuclei and prominent nucleoli. Isolated eosinophilic mastitis in absence of peripheral eosinophilia or systemic involvement is a rare entity and this prompted us to report this case.

CASE REPORT

A 40-year-old lady presented with a progressively enlarging left lump breast of 15 days duration with no relevant past or present family history except history of breast feeding 3 years back. On examination the lump was approximately 10×12 cm involving central and outer lower quadrant. It was hard, mild tender with restricted mobility. Skin tethering over areola noted. No nipple discharge or enlarged lymph node seen. Differential diagnosis of chronic mastitis and malignant disease was made. Routine haematology, biochemistry, microbiology examination and X-Ray did not reveal any abnormal finding. Blood count was 7400 per cum and differential count was N 72, L 26, M 02. Imaging studies could not rule out malignancy. Aspirate cytology reported benign breast disease-fibroadenosis. The patient was subjected to surgery with complete excision of the lump.

Figure 1: Gross image of excised breast tissue mass showing whitish streaks amidst fibrofatty background.

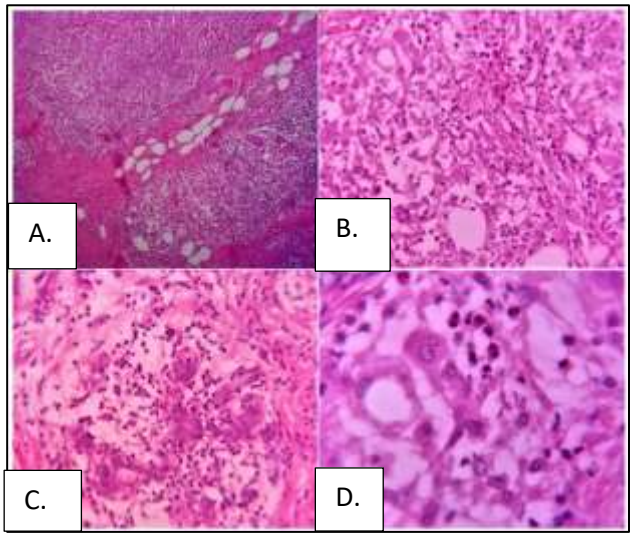

Figure 2: (A) Distorted architecture of breast lobules with inflammatory cell infiltrate. (H and E, 100X) (B) Breast tissue showing intense inflammatory cell infiltrate with relative preponderance of eosinophils. (H and E, 400 X) (C) Duct epithelium cells showing reactive atypia (H and E, 400X) (D) Reactive duct epithelium with many bilobed eosinophils. (H and E, 1000 X).

Gross examination revealed a yellow gray, globular like, non-capsulated, fibro-fatty firm tissue mass, measuring 9.5×7.0×2.5 cm. On cut uneven surface, whitish streaks amidst fibro-fatty background with multiple tiny cystic lumina. No distinct growth/ tumour mass noticed (Figure 1). Multiple H and E sections revealed distorted architecture of breast lobules surrounded by intense inflammatory cell infiltrate with relative preponderance of eosinophils. (Figure 2 A, B) Also seen lymphocytes, neutrophils, and few plasma cells. At places micro-abscess formation noticed but no granulomas with epithelioid cells. Duct epithelium cells show reactive atypia with enlarged nuclei and prominent nucleoli (Figure 2 C, D). No evidence of parasitic infestation, bacterial or fungal colonies seen. Ziehl-Nelson stain for acid fast bacilli was negative.

DISCUSSION

Prominent tissue eosinophil infiltrate is encountered in a number of inflammatory conditions, particularly in allergic diseases, parasitic infestation, collagen diseases and haematological malignancies.[7] Review of literature reveals eight case reports of eosinophilic mastitis with seven cases accompanied with peripheral eosinophilia in association with disease example- bronchial asthma, parasitic infestation, Churg Stauss syndrome, hypereosinophilic syndrome.[3-6] So far only one case of isolated eosinophilic mastitis has been reported by Parekh A.9Our patient failed to reveal any obvious aetiology such as drug, allergy, collagen vascular disease or bronchial asthma which account for the breast tissue eosinophil infiltration.

The age group of reported cases of eosinophilic mastitis so far have been between 40-60 years with one patient being 30 years old who suffered from bilateral eosinophilic mastitis.[8,9] The symptoms were nonspecific and vary from hard, tender to non-tender, breast lump with induration and peau d orange appearance. Thus, mimicking malignancy. Aspirate cytology were inconclusive and suggestive of inflammatory smear. In our case aspirate revealed few benign breast ductal epithelium suggestive of benign pathology.[8,9]

The imaging studies were found to be nonspecific in case of eosinophilic mastitis as reported by Parekh. and could not rule out malignancy.[9]

Isolated eosinophilic mastitis is an extremely rare condition characterized by intense eosinophil infiltrate around ducts and lobules with no known peripheral eosinophilia and systemic involvement. Despite the fact that some human cancers are associated with eosinophil infiltrate very few cases of breast duct carcinoma with significant eosinophils have been identified.[7] In contrast significant eosinophil infiltrate has been identified in granulomatous mastitis which is characterized by granulomatous lobulitis with mixed inflammatory cell infiltrate.[7] Histopathology in our case revealed distorted breast lobules, inflammatory cells infiltrate with preponderance of eosinophils , ductal epithelium with atypia of reactive changes and no granulomatous inflammation. Case was reviewed with clinical correlation and confirmed diagnosis of eosinophilic mastitis was made excluding malignancy and granulomatous inflammation.

Eosinophils have both anti-inflammatory and immunoregulatory function. They have been found to be associated with chronic fibrotic conditions with different etiologies. The etiology of eosinophilic infiltrate in our case remain unknown, but it could reflect a local reaction to intraluminal substances.[1,2,7]

CONCLUSION

Eosinophilic mastitis is an extremely rare benign breast disease which present with breast lump and can occur without peripheral eosinophilia or systemic involvement. It can mimic breast carcinoma. Clinical, radiological and cytological diagnosis is difficult due to the rarity and nonspecific pathology. Diagnosis can only be established on histopathology. Awareness of this entity is a must to rule out/exclude malignant disease. The treatment modality is appropriate complete local excision of the lump. Follow up in our case revealed no recurrence.

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