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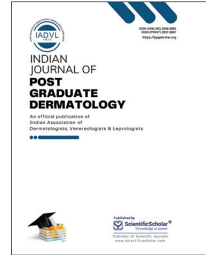

Case Report

Eosinophilic Mastitis – A Benign Condition Mimicking Carcinoma Breast: A Case Report

Saniya Amit Mahajani[1], Dhanashree Santosh Bhide[2], Kala Gananasekaran Kiruthiga[3]

[1]Chatrapati Sambhaji Maharaj Government Medical College Satara, Departments of [2]Dermatology Venereology and Leprology and [3]Pathology, KEM Hospital, Pune, Maharashtra, India.

***Corresponding author:**
Dhanashree Santosh Bhide,
Department of Dermatology
Venereology and Leprology,
KEM Hospital, Pune,
Maharashtra, India.

dsbhide@gmail.com

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ABSTRACT

Any lump in the breast raises suspicion of malignancy. This can be the cause of anxiety for the patients and may lead to unnecessary investigations. Awareness of this completely benign condition can help in early diagnosis of these cases. We report a rare case with isolated infiltration of eosinophils in the mammary gland and overlying skin without other organ involvement.

Keywords: Eosinophilic, Isolated, Mastitis, Mimicker, Steroids

INTRODUCTION

Eosinophilic mastitis is a rare benign condition that can present as an inflammatory mass with erythema, tenderness and itching. Infiltration of organs such as lungs, liver, gastrointestinal tract and skin has been reported in the literature. Infiltration of the breast tissue alone without other organ involvement is extremely rare. Eosinophilic infiltration can be associated with other diseases such as hypereosinophilic syndrome, parasitic and other infections, idiopathic granulomatous mastitis, Churg-Strauss syndrome, urticaria, asthma and peripheral eosinophilia.[1,2]

It is difficult to clinically distinguish eosinophilic mastitis from other benign and malignant breast conditions. At times, mammography and magnetic resonance imaging (MRI) can also be misleading and may not help in the diagnosis. Histopathology remains the mainstay in the diagnosis of this condition.

CASE REPORT

A 37-year-old married (Gravida 1 Para 1) female presented to a general practitioner with a history of painful swelling associated with redness of the skin and itching on the left breast of 8 days duration. On clinical examination, a mobile tender mass of 2 × 2 cm was noted in the left upper outer quadrant. Overlying skin showed erythema and induration, which was more marked in the periareolar area [Figure 1a]. The left axillary lymph node was enlarged and non-tender. She was given a course of amoxycillin and potassium clavulanate 625 mg twice a day for 7 days without much improvement. However after further investigations patient was treated with oral steroids and showed complete resolution of lesions [Figure 1b]. Ultrasound (USG) was done, which showed subcutaneous oedema with fat stranding in the left breast in the upper

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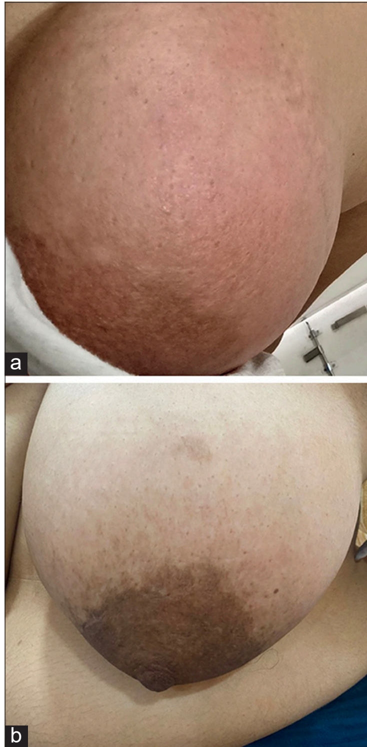

Figure 1: Eosinophilic Mastitis (a) Pretreatment photograph showing erythema and induration mainly in peri-aereolar area (b) Complete resolution of erythema and induration after treatment with prednisolone.

outer and the lower inner quadrants. Underlying the lump, a large area of parenchymal fat stranding with irregular ductal dilatation was noted. Colour Doppler showed minimal vascularity without any focal collection, suggestive of mastitis. The right breast was normal. She visited a breast surgeon who added clindamycin, a combination of paracetamol, diclofenac sodium and serratiopeptidase for 7 days without much improvement. Hence, an USG-guided core needle biopsy, biopsy of the axillary lymph node and wedge biopsy of periareolar skin were performed. Blood investigations showed raised immunoglobulin E (1174.00 kUA/L) with normal absolute eosinophilic count (0.44 thou/mm^3) and upper normal level of eosinophils (6.0%) on differential count. The USG-guided core-needle biopsy showed ductal ectasia and periductal infiltration of eosinophils [Figure 2a]. Skin biopsy showed infiltration of a large number of eosinophils with chronic inflammatory cells, mainly lymphocytes and macrophages, with dilatation of blood vessels [Figure 2b].

Axillary lymph node biopsy showed few lymphoid follicles with active germinal centres with foci of parafollicular expansion. There was no evidence of malignancy or Koch's.

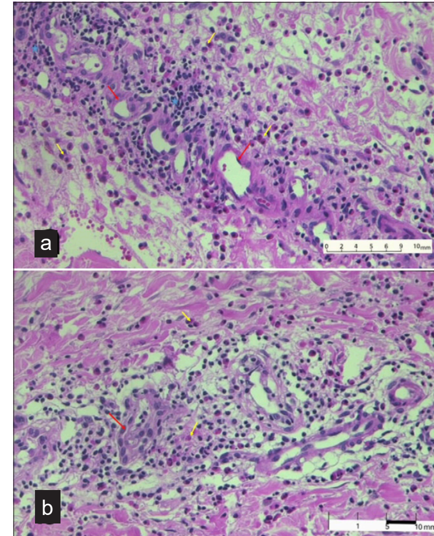

Figure 2: (a) Photomicrograph of breast biopsy (H and E stain, 200X) showing ductal ectasia (blue star), dilated ducts (red arrows) and periductal eosinophilic infiltrate (yellow arrows), (b) Photomicrograph of skin biopsy (H and E stain, 200X) showing infiltration of eosinophils (yellow arrows), lymphocytes, macrophages with dilated vessels (red arrows). (H and E: Haematoxylin and eosin).

The final diagnosis of the eosinophilic mastitis was established based on clinical and histological findings, and the patient was put on tablet Prednisolone 20 mg twice daily for 5 days and 20 mg once daily for 5 days and was asked to stop the steroids after 10 days. The lesions showed some improvement in itching and redness, but did not resolve completely. The patient came for a second opinion 15 days after stopping the steroids. On clinical examination, there was erythema and induration of the skin. There was no palpable lump. She was started on T Prednisolone 0.5 mg/kg dose till resolution of the lesion, and after that, the dose was tapered slowly over 3 months. Empirically, the patient was also given Albendazole 400 mg single dose and diethylcarbamazine 100 mg 3 times for 20 days. The patient recovered completely and has been followed up for the last 6 months without any recurrence.

DISCUSSION

Eosinophilic mastitis is a rare benign condition with an eosinophilic infiltrate in the breast tissue.[1,3] It is usually unilateral and can present with a painful, itchy mobile lump in the breast. Regional lymphadenopathy may be present. Asthma, urticaria and allergic rhinitis may or may not be associated. Peripheral blood eosinophilia is not a mandatory feature for the diagnosis.[1] There may be an allergic or immune reaction to ductal secretions, leading to infiltration by eosinophils. Activation and degranulation of eosinophils

Table 1. Differences between eosinophilic mastitis and other conditions

Histopathological differentiating features	Eosinophilic mastitis	Other conditions like hypereosinophilic syndrome, Churg Strauss
Infiltrate	Predominently eosinophils	Mixed-eosinophils, lymphocytes, histiocytes or Langerhan's cells
Neutrophilic background	Absent	Present
Location of infiltrate	Periductal	Limited to lobules

leads to the release of cytotoxic inflammatory proteins, causing the clinical symptoms.

The gold standard for the diagnosis is histopathology. Histopathology can help to distinguish eosinophilic mastitis from other conditions such as hypereosinophilic syndrome and Churg-Strauss syndrome. The differences are mentioned in Table 1. Other tests which aid in the diagnosis are USG, mammography, MRI and immunohistochemistry markers. However, the vascular, lymphatic, ductal and tissue changes on USG and MRI may be similar in carcinoma and eosinophilic mastitis and may lead to misdiagnosis. The mainstay of treatment is oral steroids in a dose of 0.5 mg/kg until the remission is achieved and then tapered slowly. Antihistamines can be supplemented.

In our case, we report a rare presentation of eosinophilic mastitis without peripheral blood eosinophilia and without involvement of other organs.[1,4]

CONCLUSION

Eosinophilic mastitis is a rare inflammatory condition mimicking carcinoma of the breast. Awareness about this benign condition will help in avoiding unnecessary investigations and radical treatment. Treatment with oral steroids gives good results.

Ethical approval: Institutional Review Board approval is not required.
Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.
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