Case Report

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Paget's Disease of Nipple in Male Breast with Cancer

Surgery Section

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ABSTRACT

Carcinoma of the male breast accounts for less than 0.5% of all cases of breast cancer. However, Paget's disease of nipple in male is extremely rare. We report on a case of Paget's disease of nipple with breast cancer in a 51-year-old gentleman. He presented with a ulcerative lesion and lump in the left breast beneath the nipple-areolar region with single mobile ipsilateral central group of axillary nodes. Modified radical mastectomy was performed. On follow up, patient was doing well with no recurrence.

Keywords: Adjuvant radiotherapy & chemotherapy, Gynaecomastia, Mastectomy, Paget's cells

CASE REPORT

A 51-year-old male presented to Department of Surgery in August 2013 with 6 months history of lump in the left breast beneath the nipple-areolar region and occasional pricking pain. He was treated conservatively elsewhere, as the treating physician had a suspicion of infective pathology responsible for his symptoms. No history suggestive of breast cancer pathology was elicited. Clinical examination revealed a firm to hard lump of 3 x 2 cm in size, occupying the nipple areola complex. It was not fixed to skin or underlying structures. No discharge was seen from nipple but for some ulcerative lesion in the areola at 1'0 clock position [Table/Fig-1]. Axillary examination showed a single mobile ipsilateral central group of axillary nodes. His physical examination and other organ system evaluation were normal.

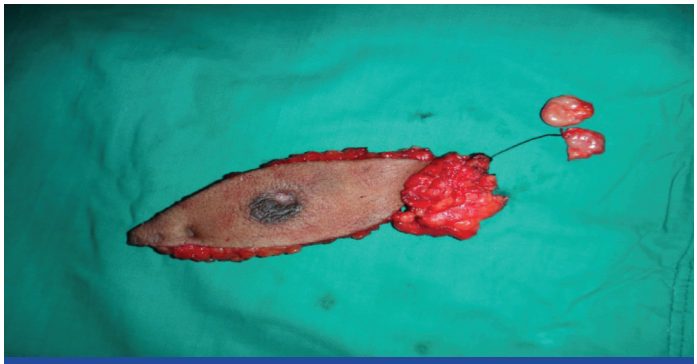
With a clinical diagnosis of carcinoma breast, the patient was investigated. His chest X-ray and ultrasonogram (USG) of the abdomen was normal. USG of breast showed mixed echogenic irregular lesion in the left breast beneath the areolar region with increased vascularity in left axillary lymph node. Fine Needle Aspiration Cytology (FNAC) of breast, nipple and lymph node was suggestive of carcinoma of breast, possibly infiltrating ductal type with metastasis to ipsilateral axillary lymph node along with Paget's disease of nipple.

He underwent modified radical mastectomy [Table/Fig-2,3] and withstood the procedure well. The postoperative course was uneventful. Histology revealed a low grade ductal lesion of breast with Paget's disease of nipple. The resected margin was free of tumour infiltration [Table/Fig-4]. As the patient was not willing to undergo any further treatment other than surgery, adjuvant treatments were deferred. At follow up patient was doing well, no recurrence.

[Table/Fig-1]: Ulcerative Lesion – Left Breast

[Table/Fig-2]: MRM – Markings

[Table/Fig-3]: Modified Radical Mastectomy



[Table/Fig-4]: Resected Specimen

DISCUSSION

Paget disease of the breast (also known as Paget disease of the nipple and mammary Paget disease) is a rare type of cancer involving the skin of the nipple and, usually, the darker circle of skin around it, which is called the areola. Paget's disease is much more frequent in women but can occur in men [1,2]. Male breast cancer can account for 1% of all malignancies in men [3]. Risk factors include old age, genetic predisposition like family history and gene mutations. Gynaecomastia should not be considered as a risk factor [4]. Cancer of male breast rarely occurs in young males. The mean age of men presenting with Paget's disease of breast and male breast cancer is in the sixth decade of life [1,5] as in our case. The pathology is similar to that of female breast cancer.

Many theories have been attributed towards the pathogenesis of Paget's disease. Studies have shown that 93% of patients with Paget's disease present with mass lesion of invasive breast cancer, as in present case [4]. The most widely accepted theory is that cancer cells from a tumour inside the breast travel through the milk ducts to the nipple and areola. This would explain why Paget disease of the breast and tumours inside the same breast are almost always found together [6,7]. Yet another theory is that cancerous cells develop independently in the nipple or areola and this would explain the incidence of Paget disease of the breast in few cases without tumour inside the same breast [7].

The clinical features in men appear to be similar to those in women. The early presentation is, as Paget described - an itchy, eczema-like rash involving the nipple-areolar complex. In more advanced stages the lesions may progress to ulceration and cause nipple retraction or bloody discharge from the nipple [6]. Approximately 50% of patients also present with an associated palpable mass in the breast [8] as in our case. Lymph node enlargement is found more often in cases with palpable tumour [9] similar to the present case.

The diagnoses of male breast cancer are delayed and are often under treated similar to the presented case. It has to be differentiated from other benign and malignant disease processes like - eczema, psoriasis, dermatitis, mastitis, adenomas, ductal carcinoma, melanoma and bowen's disease [10]. In any patient presenting with an itching or ulcerated lesion of the nipple, a tissue biopsy should be obtained to exclude the diagnosis of Paget's disease. A skin specimen containing Paget cells and a lactiferous duct secures the diagnosis and can be obtained by nipple scrape cytology or biopsy. Paget cells have similar distribution to junctional melanocytes. Distinguishing Paget's disease from melanoma is extremely difficult when the cancer cells contain pigment melanin. Immunohistochemistry is the important tool to differentiate Paget's disease from other entities [11]. Paget cells stain positive for cytokeratins (CK7), CAM-5.2, and Her-2 oncoprotein. But they do not express for CK 20, HMB-45 and high molecular weight keratin which helps it to differentiate from melanomas [12]. In addition lack of CK7 expression in Paget cells may be associated with lack of CK7 reactivity in underlying malignancy as well. This expression pattern will predict the association of underlying carcinoma as well [13].

As the patient presented with lump as well, USG of the breast was opted. Recent studies show that Magnetic resonance imaging (MRI) plays an important role in diagnosing mammary Paget's disease with or without lump and has a sensitivity of 95% compared to mammography and USG [14]. Fine needle aspiration confirms the diagnosis and delineates the correct treatment modalities as in the presented case.

No randomized studies so far have compared the treatment options for mammary Paget's disease with breast cancer in men due to the relative scarcity of cases in this population. Some studies showed treatment options like modified radical mastectomy, axillary staging, radiation therapy, or systemic chemotherapies [15]. Recently less invasive approaches such as photodynamic therapy (PDT) either in the form of topical or intravenous applications has shown to be effective in the treatment of mammary and extra-mammary Paget's disease [16]. PDT uses a photosensitizing agent which is activated by a light source that destroys the affected tissue and spares the healthy tissue. But most studies have shown that the standard therapy for Paget's disease even in the absence of malignancy is mastectomy with or without axillary lymph node dissection [17]. We opted for modified radical mastectomy in our case.

Limited and little information are available regarding the indications for adjuvant radiotherapy and effectiveness of adjuvant chemotherapy in male patients with breast cancer. Most studies [18,19] show that similar recommendations and benefit in both men and women. Considering radiotherapy, local recurrence rates were less in male patients without focal skin involvement [18]. Adjuvant chemotherapy with CMF (cyclophosphamide, methotrexate and 5 - flurouracil) lowers the risk of recurrence with good prognosis rate in male patients with Stage II breast cancer [19]. Considering the role of hormonal therapy in male breast cancer, tamoxifen is the still the first and main agent in the adjuvant treatment as well as in advance disease. The role of second line drugs such as aromatase inhibitors or LHRH analogues in the treatment of male breast cancer is not defined [20]. Due to refusal of further treatment by the patient the above adjuvant treatment modalities were not adopted in this case.

The final histopathology report showed the presence of low-grade invasive ductal carcinoma with metastasis to axillary lymph node along with Paget's disease of nipple. The resected specimen margins were free from tumour. Even though the clinical description in men is similar to that of women, considering prognosis, men seems to have worst prognosis. Overall survival rate of 47% is seen in patients with positive nodes [21]. In the literature, either breast conserving therapy or mastectomy may be the treatment of Paget's disease with or without underlying mass, but the patient should be regularly followed up with mammogram [21]. Till now patient was doing well in the presented case.

CONCLUSION

Male Paget's disease of nipple with breast cancer, though very rare, does exist. Paget's disease of the nipple is almost always associated with an underlying invasive breast cancer. Any involvement of nipple – areolar complex should be taken seriously and there should be no hesitation in resorting to biopsy. Clinical presentation of our male patient resembled those reported in literature. The surgical treatment plan was selected on the basis of careful clinical assessment and extent of involvement of the cancer.

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