Case Report

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Ectopic Male Breast Cancer: A Case Report

Oncology Section

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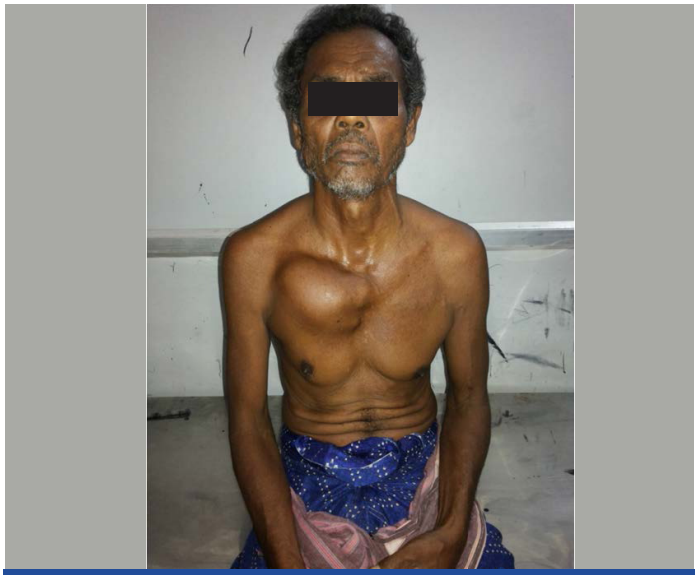
ABSTRACT

Carcinoma of male breast constitutes 1% of total breast malignancy. Carcinoma arising from ectopic breast tissue in male is an extremely rare entity and can be misdiagnosed. Ectopic breast tissue may be supernumerary or aberrant one. Despite morphologic difference, ectopic breast tissue presents characteristics analogous to orthoptic breast in terms of functional and pathologic degeneration. Most of the ectopic breast tissue occurs in thoracic or abdominal portion of milk line. If found in a location outside the milk line, it proves a diagnostic dilemma. We are reporting a case of 60-year-old male who presented with a fixed mass of size 10cm×8cm, in right chest wall infraclavicular area of 6 months duration. Histopathology of the mass revealed invasive duct carcinoma. He had no evidence of malignant or occult primary lesion in the bilateral mammary glands. Due to the paucity of the literature, incidence of ectopic male breast cancer and its management is not well understood. There is high probability of misdiagnosis of this disease. To the best of our knowledge this is the first described case of ectopic male breast cancer in the chest wall, not along the milk line, which is being reported here for documentation.

Keywords: Ectopic breast tissue, Chest wall, Supernumerary

CASE REPORT

A 60-year-old male presented with a mild tender, irregular, fixed mass of size 10cm×8cm at right chest wall at infra clavicular area of six month duration. The mass was hard in consistency, overlying skin was free [Table/Fig-1]. Both the breasts were normal. He had no evidence of supraclavicular or axillary lymphadenopathy. Remainder of physical examination was unremarkable. He had no history of surgery in the past and denied any previous neoplasia or family history of cancer. Contrast enhanced MRI of thorax showed in homogenously enhancing infiltrating expansile mass involving right chest parietal plane, anterosuperior aspect embedding pectoral muscle plane with rib erosion. Another mass was present at left internal mammary area [Table/Fig-2]. His haematological parameter was normal. Ultrasonography of abdomen and pelvis was normal. Histopathology of the mass revealed invasive duct carcinoma [Table/Fig-3]. Immunohistochemically both estrogen receptor and progesterone receptors were positive [Table/Fig-4,5]. HER-2 was negative. These finding were strongly suggestive of mammary carcinoma originating in an ectopic breast tissues at right anterior chest wall. He received three cycle of TAC {Docetaxel, Adriamycin, Cyclophophamide} and after three cycles of chemotherapy there was partial response and was inoperable for which he was advised three more cycles of chemotherapy, but he was lost for follow up.

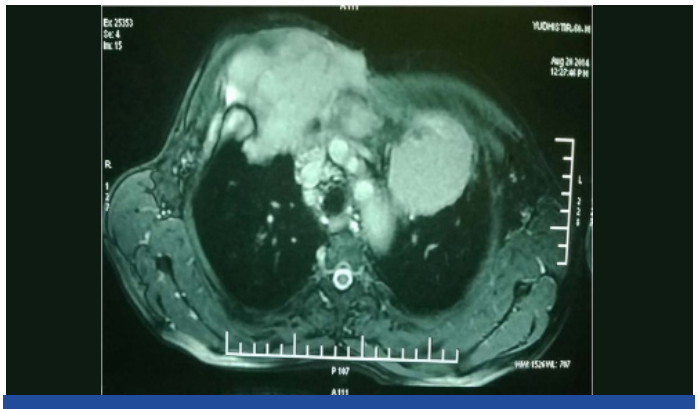


[Table/Fig-1]: Clinical photograph showing a mass at right anterior chest wall

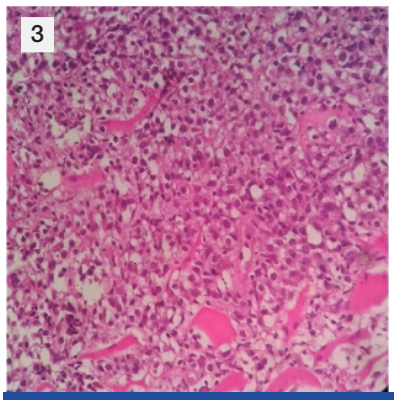
DISCUSSION

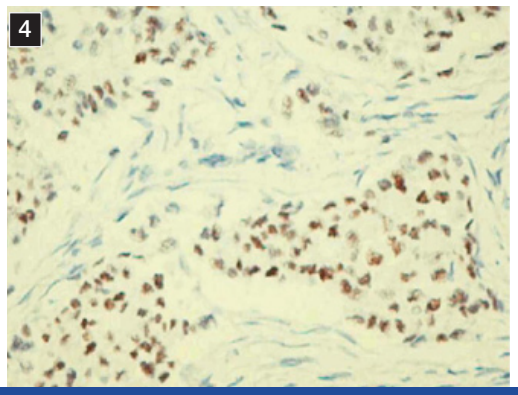
The "ectopic breast tissue" (EBT) can be either supernumerary or aberrant [1]. Histopathology, of supernumerary breast tissue is characterised by an organised ductal system communicating with its overlying skin, whereas that of aberrant breast tissue consists of unorganised secretory system, without any communication to the overlying skin [2]. EBT usually found in axilla [3]. However, it has been reported in other sites like parasternal, subclavicular, submammary, vulvar and anal region [2,4]. Malignancy arising from EBT is a rare entity. Ectopic breast cancer occurs in 0.3 to 0.6% of cases of breast cancer [5]. Ectopic breast cancer is also, further rare in male. Due to the atypical location, a correct diagnosis is often reached during the late stage of the cancer.

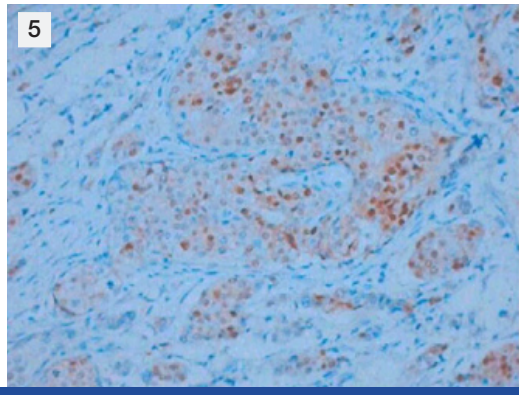
Incidence of EBT in female ranges 2-6% and in male 1-3% with highest incidence among Japanese [6,7]. Embryonic breast development begins during the 6th week of gestation, when bilateral mammary ectodermal tissue forms a ridge along the ventral surface



[Table/Fig-2]: MRI of thorax showing inhomogenous enhanced mass involving right chest wall with involvement of pectoralis muscle and also bone erosion. Another mass present at left haemi thorax at anatomical location of internal mammary lymph node







[Table/Fig-3]: Photomicrograph showing malignant ductal epithelial cells present in sheets infiltrating into the underlying muscle and fat (H&E,400X) **[Table/Fig-4]:** Nuclear staining for tumour cell denotes ER expression {ER(×200)} **[Table/Fig-5]:** Nuclear staining for tumour cells denotes PgR expression {PgR(×200)}

of body extending from anterior axillary folds to the medial aspect of inguinal fold [8]. This ridge is called the mammary ridge or "milk line". During development these mammary ridge undergo involution, leaving only bilateral mammary tissue at the 4th intercostal space, which subsequently develops into anatomic breasts [8]. Failure of any portion of milk line to involute can lead to EBT [8]. EBT usually found along the "milk line". However, cases have also been reported in locations other than milk line, which may be due to a migratory arrest of breast primordium during chest wall development [9], or it may develop from modified apocrine sweat glands [10]. EBT has autosomal dominant inheritance with incomplete penetrance, but sporadic cases represent the more common situation.

Kajava et al., in 1915 classified ectopic breast as [8]

Class I: complete breast with nipple, areola and glandular tissue.

Class II: nipple and glandular tissue but not areola.

Class III: an areola and glandular tissue but no nipple.

Class IV: consists of glandular tissue only.

Class V: nipple and an areola but no glandular tissue (pseudomamma).

Class VI: nipple only (polythelia).

Class VII: an areola only (polythelia areolaris)

Class VIII: patch of hair only (polythelia pilosa).

The reported case belongs to class IV as the lesion consists of glandular tissue only.

EBT is an important entity as it is at risk of developing any benign or malignant tumours that can develop in a normal breast. Benign and malignant conditions such as carcinoma, intraductal papilloma, fibroadenoma and fibrocystic disease have been reported in the literature [7,8]. Though tumours of ectopic breast tissue are rare, carcinoma occurs more frequently than benign tumours [10]. They may be prone to diagnostic challenge till they are biopsied. The role of MRI in identifying the ectopic breast cancer is well established. Diagnosis of ectopic breast cancer may be delayed without a high index of suspicion, particularly in cases with no overlying accessory areola or nipple. Majority of ectopic breast cancer are diagnosed in an advanced clinical stage, with nodal metastasis or inoperable condition. In our study patient was diagnosed in advanced stage where surgery was not feasible, so he was planned for neoadjuvant chemotherapy.

In comparison to supernumerary breast, the aberrant breast tissue is reported to be more susceptible to malignant degeneration probably due to stagnation in the ductal lumen [11,12]. Some report that malignancy in ectopic breast tissue occur earlier than normal breast. The most frequently reported breast carcinoma is infiltrating duct carcinoma (79%) followed by medullary and lobular carcinoma [2]. Rare reports of pagets disease, cystosarcoma phylloides, papillary carcinoma, leimyosarcoma and invasive secretory carcinoma also present. The reported patient was diagnosed as infiltrating duct carcinoma.

In a review of 82 cases of ectopic breast cancer published between 1865 and 1994 Marshall et al., found an increasing incidence of cancer in aberrant breast tissue but no increased incidence of cancer within supernumerary breast [2]. The mean age at diagnosis of patient within ectopic breast cancer was 54 about six years younger than the average age when cancer arises in normal breast [2]. The reported case has developed over aberrant tissue.

Ectopic breast tumour should be treated in the same line as typical breast tumour, but general clinical guidelines for ectopic breast tumours are not standardised. In case of benign neoplasm, lumpectomy is the standard of care. If neoplasm is malignant wide resection of the tumour with surrounding tissue and regional lymph node is the surgical procedure of choice [2]. Addressing the regional lymphnode depends on the draining nodal station of the anatomical site of malignant tumour [8]. There is no role of ipsilateral prophylactic mastectomy [9,13]. The principles of postoperative adjuvant treatment are same as anatomic breast cancer. Due to in operability this patient was treated with neo adjuvant chemotherapy to down stage the disease. He had received 3 cycles of neoadjuvant chemotherapy, but he was lost for follow up.

Prognosis of ectopic breast carcinoma is dismal due to delay in diagnosis as well as advanced stage of the disease as most of the ectopic tissues develop at the axilla; there is more chance of early involvement of the axillary lymphnode [14].

CONCLUSION

Breast cancer among the male constitute 1% of breast malignancy, further along the male ectopic breast cancer is a rare entity. Histopathology is the corner stone in the diagnosis. This case reported here due to its rarity and documentation.

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