

A Case Report of Breast Carcinoma - A Malignant Stromal Tumour with Osteoclastic Giant CellsSadiyahparveen V. Saiyed¹, Alinawaz Saiyed²¹Third Year Resident, Department of General Surgery, Sumandeep Vidyapeeth, Vadodra, Gujarat, India²Medical Student, Smt. NHL Municipal Medical College, Ahmedabad, Gujarat, India

Received: 22-02-2026 / Revised: 23-03-2026 / Accepted: 25-04-2026

Corresponding Author: Dr. Sadiyahparveen V Saiyed

Conflict of interest: Nil

Abstract:

Background: Less than 2% of breast cancer patients have breast carcinoma with osteoclastic giant cells (OGCs). Rosen initially reported breast cancer with large cells resembling osteoclasts in 1979. The distinctive stromal characteristic is present in breast carcinomas that are invasive, ductal, lobular, squamous, or papillary. The expression of histochemical stains such as the human epidermal growth factor receptor 2 (HER-2), progesterone receptor (PR), and estrogen receptor (ER) is closely associated with the treatment strategy for malignancies with OGC. Here we represent a case of Breast Carcinoma - a malignant stromal tumour with osteoclastic giant cells.

Case Summary: A 55 year old female came to Department of General Surgery with chief complain of right side breast lump and on & off pain since 1 month. Pain was not associated with fever, redness, discharge. On local examination, right side breast lump was palpable, skin normal, scarring absent and axillary lymph node palpable.

Conclusion: Invasive breast cancer with OGCs is currently uncommon. Our case report showed how aggressive breast cancer with OGCs typically presents. Regardless of the existence of OGC, the prognosis was thought to be related to the kind of cancer. The OGCs may be a reactive infiltration and have a different origin than the cancer. The prognosis was shown to be favorable for patients with benign large cells that expressed a CD68 pattern next to bone. A less aggressive tumor with a favorable prognosis is suggested by the presence of OGCs.

Keywords: Breast carcinoma, osteoclastic giant cells, tumor metastasis, prognosis, immunohistochemistry.

DOI:10.25258/ijcpr.18.4.214

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Introduction

Less than 2% of breast cancer patients have breast carcinoma with osteoclastic giant cells (OGCs) [1,2]. There have been a few examples documented in the medical literature up to this point. Rosen initially reported breast cancer with large cells resembling osteoclasts in 1979 [3]. Organs such the breast, gall bladder, liver, thyroid, and pancreas contain osteoclast-like stromal giant cells (OGCs), which are infrequently seen [4,5]. The distinctive stromal characteristic is present in breast carcinomas that are invasive, ductal, lobular, squamous, or papillary. There is debate over the prognosis of breast cancer with OGC involvement. Mammary carcinomas with OGC have a better prognosis since they have a lower cytological grade. However, axillary node metastases occur in around one-third of OGC tumors [6]. The expression of histochemical stains such as the human epidermal growth factor receptor 2 (HER-2), progesterone receptor (PR), and estrogen receptor (ER) is closely associated with the treatment strategy for malignancies with OGC. Here we represent a case of Breast Carcinoma - a malignant stromal tumour with osteoclastic giant cells.

Case History: A 55-year-old female came to Department of General Surgery with chief complain of right-side breast lump and on & off pain since 1 month. Pain was not associated with fever, redness, discharge. Patient was known case of Hypertension and Diabetes mellitus from 4 years and regularly taken medicines. No significant personal history. On vital examination, temperature was afebrile, RR-16/min, Pulse rate - 76/min and BP was 140/90 mmHg. On local examination, right side breast lump was palpable, skin normal, scarring absent and axillary lymph node palpable. On USG of abdomen and pelvis suggestive of borderline hepatomegaly with fatty liver disease. Right side modified radical mastectomy was done. After surgery, on USG examination of right breast, suggestive of heterogeneously hypo echoic ill-defined collection of approx 1.7*3.3*2.5 cm in subcutaneous plane of postoperative site showing few separation. On Histological examination, found that post lumpectomy specimen along with axillary lymph node suggestive of malignant stromal tumour with osteoclastic giant cells.

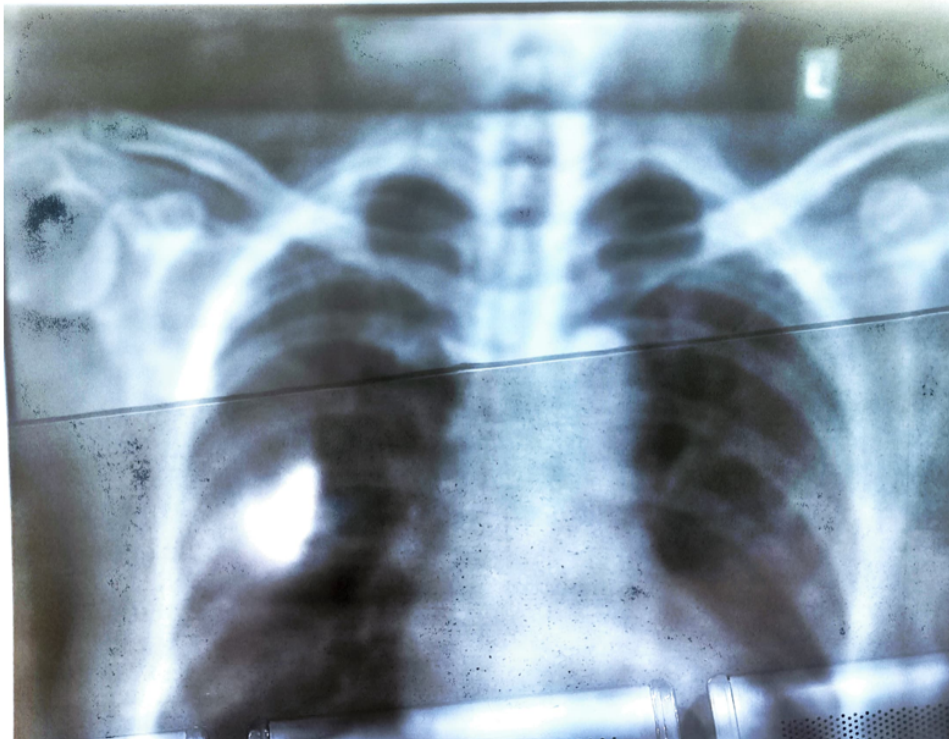


Figure 1: Chest Xray

Discussion

Osteoclastic giant cell (OGC) carcinoma has been reported in a number of organs, including the thyroid, liver, and gallbladder, in addition to the pancreas [7] and urinary tract [8]. About 200 examples of cancer with osteoclastic large cells have been documented thus far. Just 0.5–1.2% of breast carcinomas have osteoclastic (or osteoclast-like) large cells. Breast carcinomas that are invasive ductal, lobular, papillary, or squamous can become OGCs [9,10]. Axillary node metastasis occurs in around one-third of tumors with osteoclast-like large cells, which worsens the prognosis for patients with this kind of carcinoma [11]. Here, we described a case of lymph node metastases and breast cancer with OGCs.

A core needle biopsy or fine needle aspiration are frequently used for the first diagnosis of breast cancer. Large cells with plenty of cytoplasm and centrally placed nuclei that vary in size and quantity are among the cytologic findings of osteoclast-like giant cells [12]. Additionally, there are noticeable, related nucleoli. Due to their bland appearance and resemblance to foreign-body huge cells linked to fat necrosis, osteoclast-like giant cells can be very challenging to diagnose on cytologic testing. This could result in a misleading negative diagnosis if cancer cells are overlooked. OGCs can occasionally be overlooked, leading to a cytological mimic of benign tumors such fibroadenoma [13].

The presence of OGCs mixed with malignant epithelial cells is a characteristic of breast cancer with OGCs. They frequently had abnormal hyperchromatic nuclei with thin chromatin structure and sporadic tiny nucleoli. Usually, mitotic figures are uncommon. Additionally, OGCs were found in numerous different lesions and illnesses, including granulomatous mastitis, sarcoidosis, and tuberculosis. On the other hand, no histological characteristics of granulomatous illness are seen in breast cancer [14].

It is still unclear how osteoclast-like large cells are formed. Regardless of the tumor cells' histology, a recent study shown that the release of particular cytokines, such as VEGF and MMP12, resulted in a distinctive inflammatory and hypervascular stroma, which is frequently seen in breast cancer with OGCs. OGCs may therefore be the result of pro-tumoral macrophage development in response to hypervascular microenvironments brought on by breast cancer rather than antitumoral immune responses [15].

Conclusion

Invasive breast cancer with OGCs is currently uncommon. Our case report showed how aggressive breast cancer with OGCs typically presents. Regardless of the existence of OGC, the prognosis was thought to be related to the kind of cancer. The OGCs may be a reactive infiltration and have a different origin than the cancer. The prognosis was shown to be favorable for patients with benign large

cells that expressed a CD68 pattern next to bone. A less aggressive tumor with a favorable prognosis is suggested by the presence of OGCs.

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