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Sarcoma of the Breast from Mankweng Breast Oncology Clinic and Literature Review

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ABSTRACT

Breast sarcoma is an uncommon clinical entity that represents less than 1% of all breast malignancies. This tumor has a mesenchymal origin and is classified into primary breast sarcomas and secondary breast sarcomas which develop as a result of previous irradiation or chronic lymphedema. A 73-year-old female was admitted to the Mankweng Academic Hospital, University of Limpopo, South Africa, with a rapidly enlarging, painful lump in her left breast with duration of 3 months. The patient had no previous history of malignancy or irradiation. Clinical local examination revealed asymmetrical breasts with the left breast bigger than the right. Mammogram revealed a large dense retro-areolar mass containing suspicious intralesional calcifications within the left breast. Histopathological results from biopsy reported features of sarcoma with a heterologous chondroid and osseous differentiation. A left mastectomy was performed, resulting in a complete removal of the tumor with clear margins. The patient was subsequently discharged home in good general condition, without complications, with appointments for follow up at the outpatient clinic, as well as a referral to the oncologists for radiotherapy.

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INTRODUCTION

Breast sarcoma is a rare clinical entity that represents less than 1% of all breast malignancies and less than 5% of all sarcomas. [1,2] The rarity of these tumors limits most studies to small retrospective case reviews and case reports making clinicopathological studies difficult. [3] Sarcomas have a mesenchymal origin and are classified into primary breast sarcomas (de novo) and secondary breast sarcomas which grow as a result of previous irradiation or chronic lymphedema. [4] Histologically, breast sarcomas can be classified into several subtypes: including fibrosarcomas, pleomorphic sarcomas, leiomyosarcomas, rhabdomyosarcomas, and angiosarcomas. [5] Breast sarcomas typically affect patients aged 55-59 years. [6] The optimal treatment of breast sarcomas involves a multidisciplinary team which decides on the appropriate managements of each individual patient. [3,7] In this paper we highlight the presentation of primary breast sarcoma in a 73 old female patient to share our experience with literature view. Ethical approval was obtained from Pietersburg-Mankweng Research Ethics committee, reference number PMREC 27 JANUARY UL 2021/A.

CASE PRESENTATION

We report the case of 73-year-old African female on treatment for a systemic arterial hypertension, who presented to our breast oncology clinic with a 3-month history of a rapidly enlarging painful left breast lump. The patient had no previous history of malignancies or exposure to irradiation. Clinical local examination revealed an asymmetry of the breasts, where the left breast was bigger than right [fig 1]. There was a tumor in the left breast measuring 15 cm x 18 cm, with no skin or chest wall involvement. Axillary lymph nodes were not palpable. Further systemic examination was unremarkable. Mammographic findings (BIRADS 6) revealed a large dense retro-areolar mass with suspicious intralesional calcifications visualized in the left breast [fig 2], and multiple ovoid sub-centimeter axillary lymphadenopathy. Abdominal ultrasonography was grossly normal. The histopathological result of an incisional biopsy demonstrated features of sarcoma showing heterologous chondroid and osseous differentiation.

All immunohistochemical stains were negative for MCK, p63, 34Beta E12 and CK5/6. The patient underwent a left mastectomy with sentinel lymph node biopsy. A few days after surgery the patient was discharged home in good general condition without complications with appointments for

review in the outpatient clinic, she was also referred to the oncologists for subsequent radiotherapy and continuous follow-up. The post-mastectomy histopathological results showed features in keeping with the mixed multinodular, circumscribed, malignant neoplasm with mixed mesenchymal (68%), spindle cell (30%) and epithelial (2%) components. Surgical margins were clear of malignant cells and lymph nodes did not have any metastatic deposits.

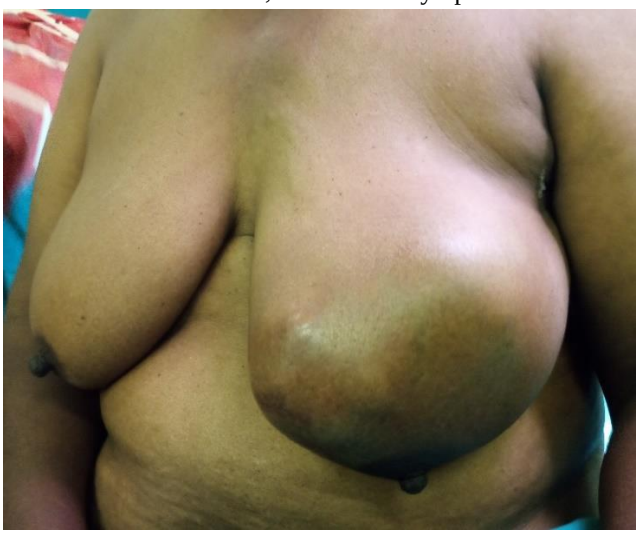

Figure 1: breasts asymmetry with the left breast bigger than the right

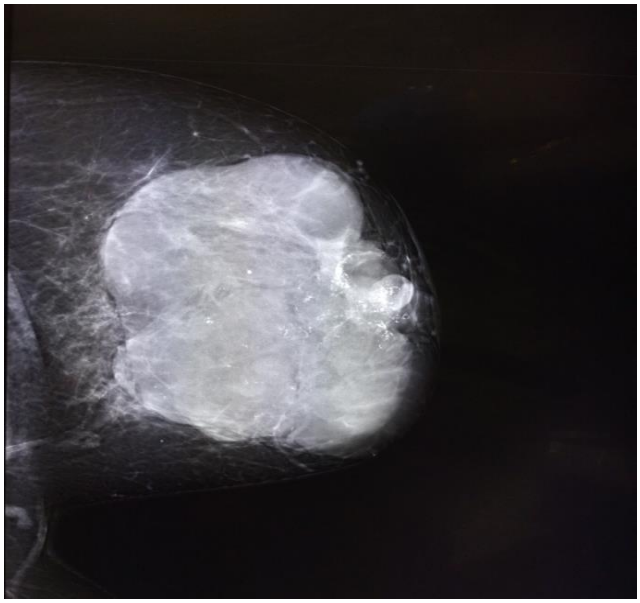

Figure 2: Mammographic picture of left breast: A large dense retroareolar mass with suspicious intralesional calcifications was visualised.

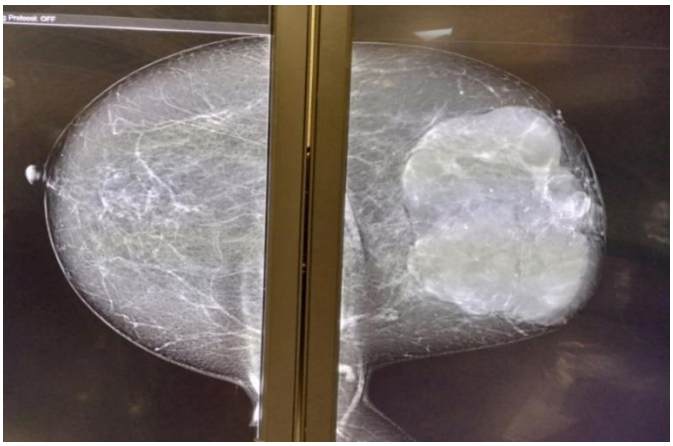

Figure 3: Mammographic picture of both breast findings

DISCUSSION

Sarcomas of the breast are a rare and a diverse group of mesenchymal-derived malignancies with a unique natural history, treatment, and prognosis if compared to other more common carcinoma-type malignancies of the breast. [1] Although they are rare, they are aggressive with a high recurrence rate. Unlike most other breast cancers which spread mainly via a lymphatic system, breast sarcomas usually spread hematogenously. The lungs, liver and bones are the most common sites for sarcomas' metastatic deposits. Sarcomas share some clinical features with breast carcinomas, but the therapy and prognosis can differ substantially. [4] Lymphatic spreads in sarcomas are uncommon therefore the nodal status in breast sarcomas is less informative. [4]

Breast sarcomas have a high recurrence rate and a poor prognosis. [3,8] Approximately 80% of recurrences appear in the first two years. [4] Tumor size, histopathological type, histopathologic grading, the presence of positive margins, and local recurrences appear to be prognostic factors. [6]

The most appropriate and effective treatment of breast sarcomas requires a multidisciplinary approach including experienced sarcoma surgeons, pathologists, radiotherapists, and medical oncologists. [3] Surgical intervention with adequate resections of margins is considered the gold standard of treatment. Negative surgical margins free of malignant cells are more important in terms of local recurrences and overall survival than the extent of surgical resection. [3] There is much debate surrounding the optimal surgical strategy to achieve clear surgical margins, nevertheless most sarcoma centers advocate aggressive surgical management with radical or Patey mastectomy rather than breast conservation surgery (BCS) or wide local resection (WLE). [10] Lo S *et al,* found that WLE in sarcomas was associated with an unacceptably high incomplete excision rate of 87.5%. [10] There is also controversy concerning the use of radiotherapy or chemotherapy in patients with breast sarcomas, and there is no consensus in this matter as the use of adjuvant therapies may often depend on the risk of tumor recurrence. [4] Al-Benna S *et al.* recommended the use of a neoadjuvant chemotherapy in order to shrink the tumor and help to obtain negative surgical margins. [3] Currently the use of radiotherapy seems to be recommended in patients with a positive margin resection because the risk of recurrences is high, and in those patients with R0 resections when tumors were larger than 5 cm or a histopathological investigation found a high-grade sarcoma. [4,8]

Local recurrence appears to be higher for breast sarcomas than for sarcomas of other anatomical locations (22% versus 16%) which may suggest that a more aggressive surgical treatment is required for sarcomas of the breasts. [11]

CONCLUSIONS

We presented the case of 73-year-old African lady with the primary breast sarcoma. Breast sarcomas are rare but aggressive type of tumors. The higher tumor size, the worse the prognosis. Axillary lymph nodes in sarcomas, unlike in other breast cancers are usually not affected by metastases. The optimal treatment of breast sarcomas requires a multidisciplinary team. Surgery with an adequate resection of margins remains the mainstay of treatment. A close follow up is strongly recommended because of a high risk of recurrence.

INFORMED CONSENT

A written informed consent was obtained from the patient to publish this case report.

CONFLICT OF INTEREST

None declared.

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