Case Report

Heterologous osseous differentiation in Malignant Phyllodes tumour - A rare case report

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Abstract

Breast sarcomas are rare neoplasms accounting for less than 1% of breast malignancy. Phyllodes tumors have biphasic histological features with both epithelial and stromal component. Careful characterization of the stromal component is critical since it is the pathologic features of the stromal cells that determine its malignant potential. We reported a case of 57 years old female with right breast mass who underwent wide excision and on histological examination a diagnosis of malignant phyllodes tumour with heterogonous osseous differentiation was made. The rarity of the lesion was considered for reporting and on follow up the patient was free of metastasis.

Key words

Immunohistochemistry, Osseous differentiation, Metaplastic carcinoma, Malignant phyllodes.

Introduction

Phyllodes tumor of the breast is a biphasic fibroepithelial neoplasm and accounts for 0.3-1.5% of all female breast tumors [1-4]. Clonal analyses have revealed that some Phyllodes tumor develop from fibroadenomas [5]. At least

12.5% of patients with Phyllodes tumor have history of fibroadenomas and over 20% of patients have a concurrent diagnosis of a benign fibroadenomas [6]. The majority of Phyllodes tumors are benign, with the remainder divided between borderline and malignant subtypes. Heterologous sarcomatous stromal elements, such as, chondrosarcoma, liposarcoma, osteosarcoma, rhabdomyosarcoma, angiosarcoma and leiomyosarcoma are rarely encountered in a malignant Phyllodes tumor [1, 2]. The rarity of malignant Phyllodes showing stromal elements of osteosarcoma was considered when reporting this case.

Case report

A 57 years female presented with a large right breast mass, which had been palpable for the past three years and had suddenly increased to the present size. On physical examination, she had a firm to hard, non tender lump on the right side. The contralateral breast examination was unremarkable. Axillary lymph nodes were not palpable.

The patient went total mastectomy, grossly the growth measured 3.5x3.0x3.0 cm. The cut surface revealed a circumscribed, predominantly solid gritty tumor with minute cystic spaces along with calcification. Routine processing was done and stained with Hematoxylin and Eosin. Microscopic findings shows heterogeneous tumor showing glandular component comprises of proliferation of atypical spindle cells along with osseous metaplasia (**Figures - 1, 2, 3**). The glandular component consisted of scattered small glands, elongated tubules and cell nests showing low to moderate grade atypia. At that time differential diagnosis of metaplastic carcinoma with osseous differentiation and mesenchymal tumor of breast with heterogonous osseous differentiation was made.

Immunohistochemical breast markers ER, PR, Her-2/neu were negative. Extensive markers cytokeratin, EMA and CK-8/18 were done which were negative and thus confirmed the diagnosis of malignant Phyllodes tumor with Heterologous osseous differentiation. The patient recovery is uneventful. The patient is alive and well at the one year follows up, with no clinical evidence of local recurrence.

Figure – 1: Sections showing sarcomatous stroma.

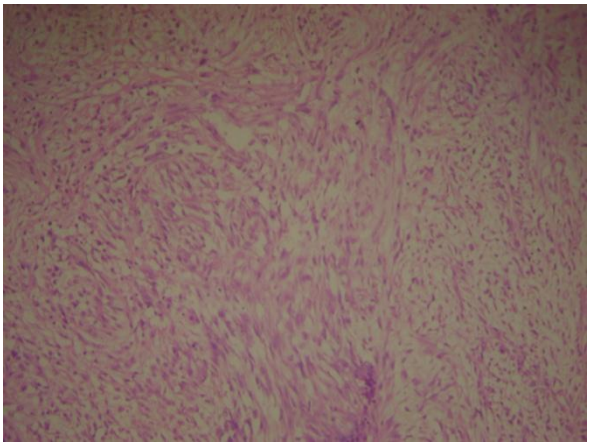


Figure – 2: Sections showing osteoid matrix along with atypical mesenchymal cells.

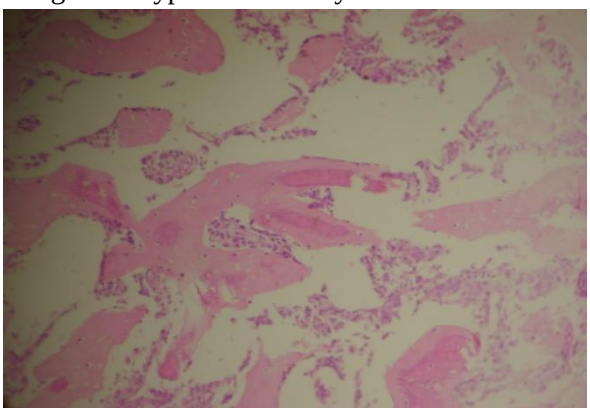
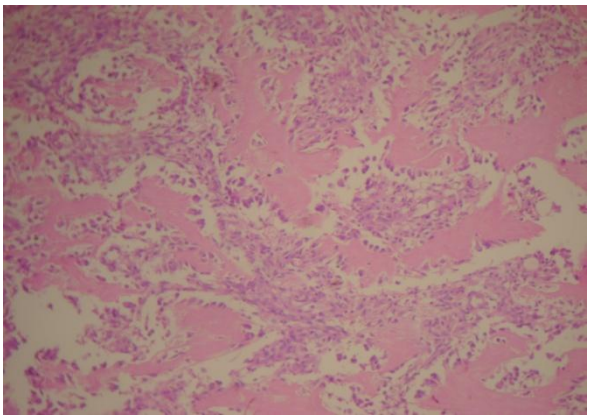


Figure – 3: Section showing tumour osteoid rimmed by tumour cells, osteosarcoma differentiation.



Discussion

Sarcomas of the breast are rare neoplasm accounting for less than 1% of breast malignancy [7, 8, 9]. A malignant Phyllodes account for 0.18% of all breast malignancies [10]. These tumors with Heterologous differentiation of osteosarcoma and chondrosarcoma are rare, accounting for 1.3% of all Phyllodes tumors [1, 8, 10].

Various investigators have found cellular pleomorphic, stromal elements or the combination of histologous stromal elements or the combination of histological features to be prognostically useful [1, 8, 10, 11]. According to Hawkins, et al., four features-high mitotic count, stromal overgrowth, severe nuclear pleomorphism and infiltrating margins were useful predictors for the development of metastases [8]. They also showed that the most reliable predictor for metastasis was the presence of stromal overgrowth, and a primary tumor with stromal overgrowth had a 72% risk of metastatic spread [8]. Here patients need a close follow up with a CT scan of the bones and lungs.

In our case Immunohistochemistry played a vital role to reach final diagnosis. These tumors were triple-negative ER, PR and Her2/neu. [12]. Immunonegativity for cytokeratin, EMA and CK 8/18 confirmed the diagnosis.

Conclusion

Breast sarcomas are biologically aggressive tumors with a wide differential diagnosis. Hence, Immunohistochemistry is needed for their typing and confirmation. Here we emphasize the need for Immunohistochemistry of every suspicious differential diagnosis for better patient management and evaluation.

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