Letter to the Editor

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Primary Giant Cell Tumor of the Breast: Report of a Rare Case and Review of the Literature

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Dear Editor,

Giant cell tumor (GCT) of soft tissue is a rare tumor arising primarily from the soft tissue of extremities. GCT is very rare in the breast, and the incidence of primary GCT of breast is not known due to its extreme rarity, with only ten published cases in the English literature to date (1). These tumours mimic breast carcinoma or phyllodes tumor, and often cause a diagnostic dilemma.

We recently encountered a case of a 58-year-old female who presented with a lump of size 8.5x7x6 cm in her right breast that had persisted for two months. On clinical examination, the differential diagnosis of phyllodes tumor and carcinoma of the breast were made. Imaging studies, including mammography and contrast-enhanced computed tomography of the chest, revealed a large, complex, cystic mass. An ultrasound-guided core needle biopsy from the lesion revealed a tumor comprising multinucleated giant cells admixed with mononuclear oval to plump, elongated cells. On immunohistochemistry, the multinucleated giant cells were positive for CD68, and were negative for estrogen receptor, progesterone receptor, human epidermal growth factor receptor 2/neu, and pan-cytokeratin cocktail (AE1/AE3), suggestive of a GCT of the breast. Further imaging showed no metastatic lymphadenopathy or additional lesions. The patient underwent a modified radical mastectomy, which confirmed the initial diagnosis. Grossly, the tumor was well-circumscribed, with cystic areas. Histological examination revealed features consistent with GCT of the breast, emphasizing the importance of distinguishing this tumor from commoner breast tumors, like breast carcinoma with osteoclast-like giant cells and Phyllodes tumor.

Primary GCT of the breast was first reported in 1981 by Lucas et al. (2), in a male patient. All the cases reported in the literature presented as well-circumscribed breast masses. The current case was clinically diagnosed as a malignant breast mass with differentials of phyllodes tumor and carcinoma of the breast. Primary GCT of the breast may be differentiated from carcinoma of the breast by the absence of epithelial immunostains. Similarly, malignant phyllodes is excluded by the absence of epithelial component or sarcomatous component. On microscopy, the other differentials considered were metastatic GCT, direct infiltration of breast by a primary bone tumor, reactive lesions, and granulomatosis. Metastatic GCT and direct infiltration of a primary bone tumor were excluded by the absence of bone lesions radiologically. The patient did not have any prior systemic diseases or history of any infection, which ruled out the possibilities of reactive lesions or granulomatosis. There were no epithelioid cell granulomas and the giant cells seen were osteoclastic type, so the possibility of a granulomatous lesion, such as tuberculosis, was also excluded. Cystic change can also be GCT of the breast (1). The current case also showed cystic change, which may suggest a differential diagnosis of papillary neoplasms. However, no papillae were seen grossly or on microscopy in the current case. In all cases, including the, presented case, initial concerns of malignancy were prompted by imaging findings. GCTs of the breast have a variable clinical course. Most of the cases reported in the literature did not recur. A few cases had local recurrence (3, 4) and a single case showed pulmonary metastases. (5) The current case is on regular follow-up and has been followed-up for eleven months to date, with no recurrence so far.

We report a primary GCT of the breast, which is a very rare breast lesion. The importance of immunohistochemistry in the differential diagnosis of similar lesions is highlighted.

Footnotes

Authorship Contributions

Surgical and Medical Practices: S.P., M.L., P.K., T.Y., V.N.G.; Concept: S.P., M.R., S.K., M.L., V.N.G.; Design: S.P., M.R., M.L., V.N.G.; Data Collection or Processing: S.P., M.R., V.N.G.; Analysis or Interpretation: S.P., M.R., S.K.,

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