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Osteoclastic giant cell rich metaplastic carcinoma in malignant phylloides: A rare entity

Sir,

The term metaplastic carcinoma was introduced by Huvos *et al,* in 1973.[1] Metaplastic carcinoma refers to a highly heterogeneous group of neoplasm with an admixture of carcinomatous epithelial and mesenchymal elements with a reported incidence of 0.2-1%.[2-4] Wartagotz *et al,* in 1990, studied a largest series of 247 cases of metaplastic carcinoma and suggested five variants- matrix producing metaplastic carcinoma of breast, squamous cell carcinoma, spindle cell carcinoma, carcinosarcoma and metaplastic carcinoma of breast with osteoclastic giant cells.[5] We present a case of 63 year old lady who was hospitalised for gradually increasing breast lump over a span of ten years. She underwent simple mastectomy for clinically suspected phylloides tumor.

Gross: We received a skin covered mass with unremarkable nipple and areola totally measuring 13x10x10cms. Bread loafing showed a gritty tumor measuring 10x9x9cm with leaf like spaces along with cystic, necrotic areas [Figure 1] and focal cartilaginous area [Figure 2]. Microscopy: Sections revealed a biphasic tumor composed of ducts lined by dual epithelium and hyperplasic stroma [Figure 3]. Stromal overgrowth merged with fibrosarcomatous areas with spindle shaped hyperchromatic

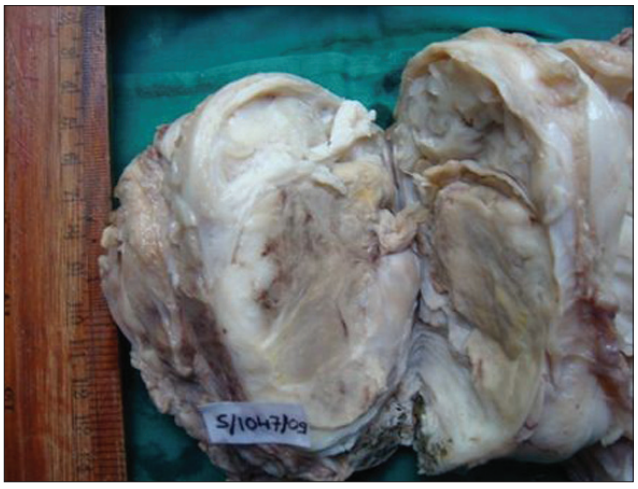

Figure 1: Gross photograph of breast mass cut open showing leaf like spaces along with cystic degeneration and large necrotic areas

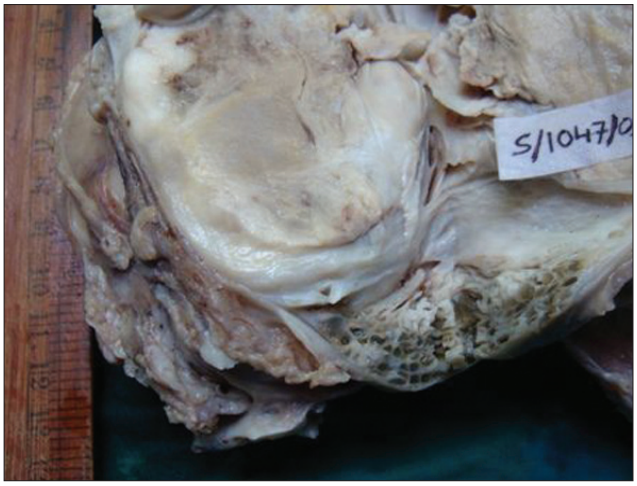

Figure 2: Close view showing focal cartilaginous area

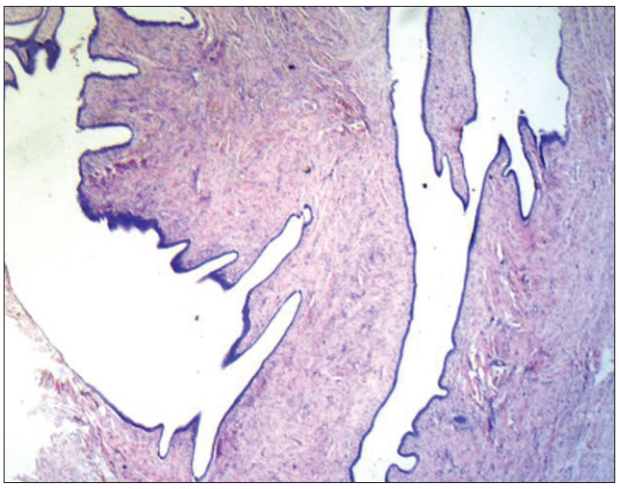

Figure 3: Microphotograph showing typical biphasic pattern of Phylloides tumor composed of ducts lined by dual epithelium and hyperplasic stroma (H and E, ×10)

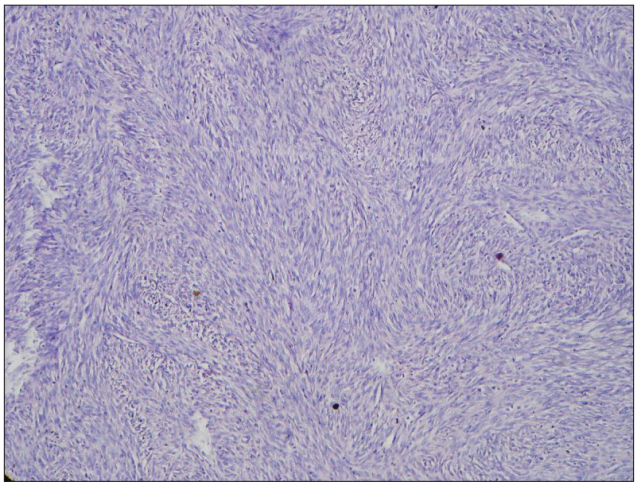

Figure 4: High power view to show fascicles of spindle cells from fibrosarcomatous area (H and E, ×40)

nuclei and eosinophilic cytoplasm arranged in fascicles and bundles [Figure 4]. Focal chondroid differentiation was seen [Figure 5]. Increased mitosis 20-30/10hpf with atypical mitoses was noted. Numerous osteoclastic giant cells were seen [Figure 6]. Thin walled vessels were seen lined by osteoclastic giant cells [Figure 7]. Malignant epithelial counterpart was not seen. Extensive necrotic areas were seen. We rendered a probable histological diagnosis of malignant phylloides tumor with predominant fibrosarcomatous and focal chondroid differentiation. IHC panel showed diffuse Pancytokeratin [Figure 8] and focal EMA , S100 and Vimentin positivity. We rendered a final diagnosis of metaplastic carcinoma -osteoclastic giant cell rich variant arising within malignant phylloides tumor Metaplastic carcinomas tend to be large, present more often in early stage and before axillary node metastasis.[4-6] Our patient presented clinically as huge breast lump without palpable nodes. Our case morphologically fulfilled the criteria of malignant phylloides tumour (PT) with predominant fibrosarcomatous component. Differential diagnosis in such cases includes metaplastic carcinoma and primary sarcoma of breast.[7] Classic features of PT were seen hence primary sarcoma of breast was ruled out. IHC showed diffuse cytokeratin positive and EMA positive which pointed towards metaplastic carcinoma. Metaplastic carcinomas show a mixture of epithelial and mesenchymal elements. A subset of metaplastic carcinomas (10%) histologically does not show epithelial elements but are positive for epithelial markers. Our case had similar appearance.

The mode of surgical approach is different, hence the need to differentiate between the two. Malignant phylloides disseminates by haematogenous route thereby needs no axillary clearance whereas metaplastic carcinomas are treated as primary breast carcinomas with axillary clearance.[7] Metaplastic carcinomas usually occur in conventional ducal carcinoma and is rarely seen arising in Phylloides tumor. Our case showed conventional PT

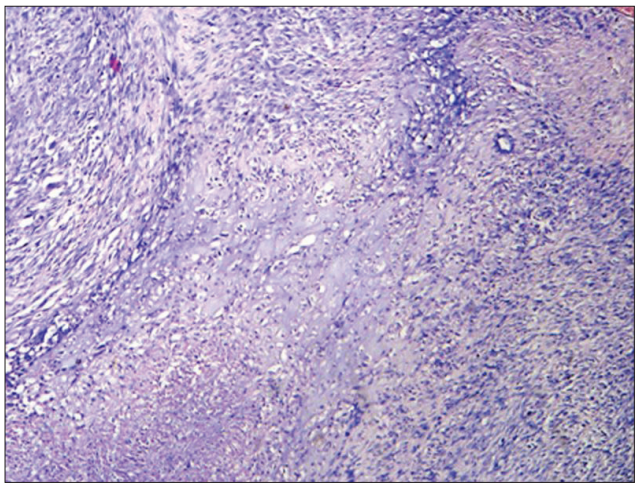

Figure 5: Focal areas of chondroid differentiation (H and E, ×40)

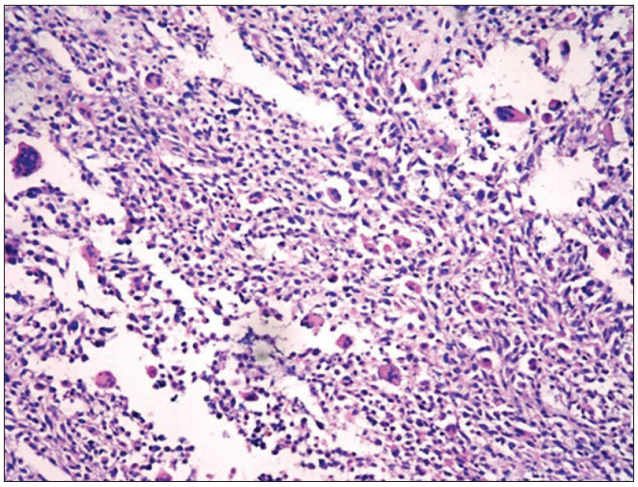

Figure 6: Microphotograph showing numerous osteoclastic giant cells (H and E, ×10)

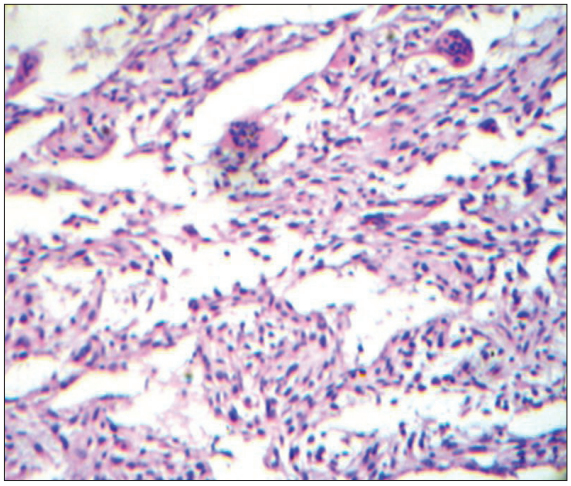

Figure 7: High power view showing thin walled blood vessels lined by osteoclastic giant cells (H and E, ×40)

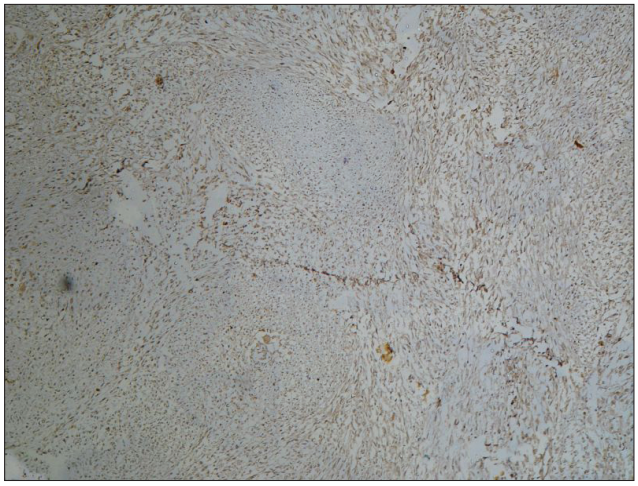

Figure 8: Immunohistochemistry showing diffuse cytokeratin positivity, chondromatous area and giant cells show negative staining

with areas of metaplastic carcinoma-osteoclastic giant cell rich variant hence we present this rare entity. Osteoclastic giant cells are seen in 2% of breast cancers, including infiltrating ductal carcinoma, invasive lobular carcinoma, sarcomas and metaplastic carcinomas.[4] Osteoclastic giant cells are usually seen in approximation to thin walled blood vessels giving it a gland like appearance and show an association with chondroid/osseous differentiation. Our case showed similar appearance. Osteoclastic giant cells are cytokeratin negative and vimentin positive. Nodal metastasis is less in metaplastic carcinomas (6-26%) than infiltrating duct carcinoma but distant metastasis to lung is frequent. This variant tends to be hormone receptor negative (ER, PR negative), an attribute typically associated with worse outcome. Survival of metaplastic carcinomas-osteoclastic giant cell rich variant is better-68% as compared to carcinosarcoma 49%.[2-5] In our case with a clinical diagnosis of PT, lumpectomy was done, she needs a further axillary clearance in view of metaplastic carcinoma. However patient did not return for follow-up since one year.

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