

Case Report

Metaplastic carcinoma of the breast: a case report

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ABSTRACT

Metaplastic carcinoma is a rare but heterogeneous group of neoplasm of breast, accounting for about 1% of all breast carcinomas. Metaplastic carcinomas may be either low-grade tumors (e.g., adenosquamous carcinoma or spindle cell carcinoma), or high-grade tumors (e.g., squamous cell carcinoma, or spindle cell carcinoma). We report a case of metaplastic breast carcinoma in a 72-year-old lady. The clinical, radiological and histological characteristics are discussed.

Keywords: Metaplastic breast carcinoma, Spindle cell, Breast carcinoma

INTRODUCTION

Metaplastic carcinoma is a rare but heterogeneous group of neoplasm of breast, accounting for about 1% of all breast carcinomas.¹ Its variants include low to high grade squamous cell, adenosquamous or spindle cell carcinoma. Spindle cell neoplasm is an aggressive tumor associated with poor survival and because of its rarity there is no standardized treatment guideline. Here we present an old lady with spindle cell variant of the metaplastic carcinoma of breast.

CASE REPORT

We report the case of a 72-year-old lady presented to our OPD with large lump in her right breast. She had no history of breast cancer in her first-degree relative. She had a history of painless lump in her left breast for the last 4 months, which gradually increased in size over this duration. The initial physical examination revealed a hard lump measuring 10×8 cm with overlying skin about to ulcerate, not fixed to the chest wall. There was few palpable mobile ipsilateral axillary nodes and no palpable

lymphadenopathy in bilateral supraclavicular fossa and contralateral axilla (Figure 1).



Figure 1 (A-B): Clinical images of right breast tumor just before surgery. (White arrow-axilla, red arrow-nipple).

Ultrasound guided core needle biopsy was done elsewhere. Pathology slide and block were reviewed by

pathologist which revealed picture of predominantly resembling an undifferentiated sarcoma, although small foci of epithelial component also noted, suggestive of metaplastic carcinoma. The immunohistochemistry (IHC) analysis showed (Figure 2 A and B) patchy positivity of cytokeratin and p63 and negative for CD34 as well as negative for ER, PR, HER 2 NEU with Ki 67 index 80%-suggestive of metaplastic carcinoma or stromal neoplasm. Whole body 18-FDG PET CT scan was done which revealed (Figure 3) FDG avid heterogeneously enhancing centrally necrotic large lobulated soft tissue density mass lesion predominantly in upper outer quadrant of right breast involving overlying skin and reaching up to underlying pectoralis muscle (measuring 7.8×6.2 cm in maximum trans-axial dimension and extending approximately 7.3 cm in maximum cranio-caudal extent, SUV max 31.6). FDG avid few enhancing soft tissue nodules in right breast adjacent to main mass lesion-satellite nodules (largest measuring 1.3×1.2 cm, SUV max 20.3). FDG avid few enhancing right axillary lymph nodes (reference node measuring 1.1×0.9 cm, SUV max 6.0).

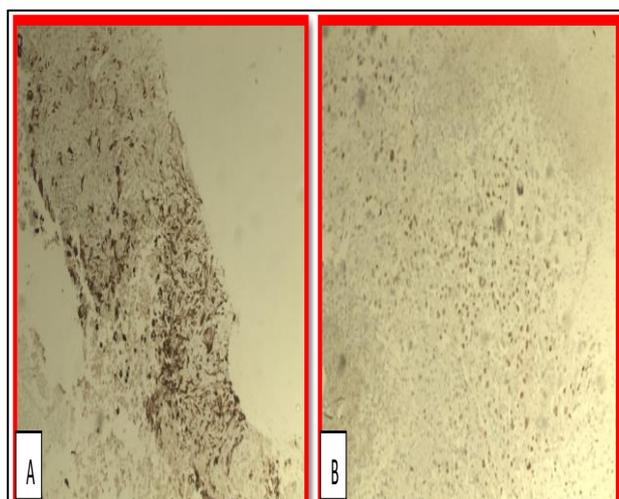


Figure 2 (A and B): Cytokeratin-patchy positivity in tumour cells (IHC 10x), p63-patchy positivity in tumour cells. (IHC 10x).

Multidisciplinary tumour board suggested for surgery. Mastectomy with axillary dissection was planned. After taking informed and written surgical consent, right modified radical mastectomy with level I, II and III axillary lymph node dissection performed under general anesthesia. Post-operative period was uneventful. Final HPE report was consistent with the pre-operative diagnosis- Metaplastic carcinoma of right breast, MBR grade 3, stage: pT4bN0M0 (AJCC 8th edition). All margins including deep resection margin were free but skin was involved. All examined 20 lymph nodes were free of tumour. Multidisciplinary tumour board suggested for adjuvant chemotherapy and radiotherapy. Patient is receiving her adjuvant treatment.

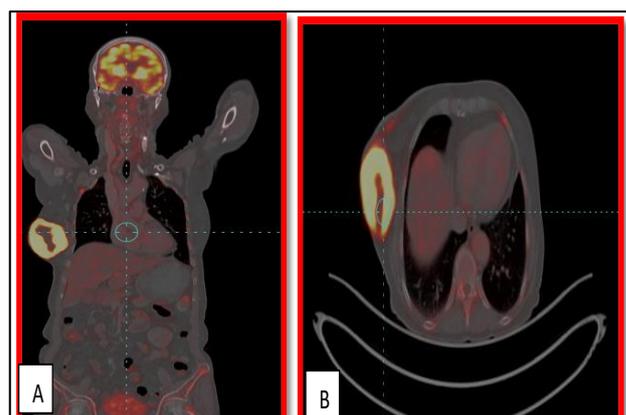


Figure 3 (A-B): FDG-PET CT scan images showing FDG avid heterogeneously enhancing centrally necrotic large lobulated soft tissue density mass lesion predominantly in upper outer quadrant of right breast involving overlying skin reaching upto underlying pectoralis muscle noted (SUV max 31.6).

DISCUSSION

Spindle cell carcinoma is a variant of metaplastic carcinoma with predominance of spindle cells. Metaplastic carcinomas may be either low-grade tumors (e.g., adenosquamous carcinoma or spindle cell carcinoma), or high-grade tumors (e.g., squamous cell carcinoma, or spindle cell carcinoma).²

Its presentation is similar to other breast cancer clinically as well as radiologically. Carter et al reported age of presentation of tumor from 40 to 96 years with median of 68 years while it was reported to be 22-91 years by Luini.^{3,4} The reported incidence of axillary lymph node metastasis at diagnosis was 5-56%.^{3,5} Most common sites of distant metastasis are lung and bone.³ These variations in the lymph node metastasis can be due to extent of the epithelial component and differentiation in the primary tumor.^{6,7} In primary breast sarcoma, lymph node metastasis is rare. If present, the diagnosis of a metaplastic carcinoma should be considered even in the presence of a pure spindle cell neoplasm.⁸

IHC plays a crucial role in the establishing accurate diagnosis of metaplastic carcinoma. It usually stains positive for vimentin, SMA, pan-keratin and p63 and negative for ER/PR, HER2/Neu and CD34 as similarly observed in the present case.^{3,4,7} Metaplastic carcinomas have a worse disease-free and overall survival when compared with adenocarcinoma.^{4,9}

CONCLUSION

The optimal management of a patient who receives a diagnosis of a malignant tumor of the breast depends on both a tumor-specific and a patient-specific approach. This requires knowledge about the tumor type, as well as its predicted behavior, and response to various

treatments. Data concerning subtypes of breast malignancy, including extremely rare subtypes, will aid in these therapeutic decisions. Metaplastic breast cancer (MBC) is a rare malignancy characterized by various combinations of adenocarcinoma, mesenchymal, and other epithelial components.

Rarity along with poor prognosis associated with metaplastic carcinoma requires a high degree of suspicion while investigating a breast lump with rapid growth. Review of literature suggests it should be treated similar to another invasive carcinoma. As it is less responsive to conventional chemotherapy, role of targeted therapy which is being evaluated in many studies may be beneficial to patients in near future.

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