

**Primary metaplastic squamous cell carcinoma of breast****Soumita Poddar<sup>1</sup>, Santu Mondal<sup>2</sup>, Arya Sen<sup>3</sup>, Anjali Bandyopadhyay<sup>4</sup>**<sup>1</sup> Department of Radiotherapy, <sup>3</sup> Departments of Pathology, Murshidabad Medical College and Hospital

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**ABSTRACT**

38 years old female patient presented with a lump in left breast since 6 months, gradually progressive in size, ultimately involving almost entire breast. She also had a lump in left axilla. She had no complaint of pain over the lump or skin changes. There was no history suggestive of distant metastasis. Trucut biopsy from left breast lump showed poorly differentiated carcinoma with squamoid differentiation. In whole body PET CT scan, there was no distant metastasis. Patient underwent left sided modified radical mastectomy. Histopathological examination diagnosed the case as metaplastic squamous cell carcinoma. In immunohistochemistry, it was triple negative breast carcinoma. Patient received adjuvant chemotherapy and radiotherapy. The case is described along with a review of literature.

**Key words:** Squamous, carcinoma, breast.

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**INTRODUCTION**

Carcinoma breast is now one of the most common malignancies in the world. Common subtype of carcinoma of breast is ductal carcinoma followed by lobular carcinoma. There are many uncommon subtypes, such as tubular, mucinous, apocrine and others. Metaplastic carcinoma of breast is a rare variant. Squamous cell carcinoma of breast is a variant of metaplastic carcinoma, which is very rare as primary malignancy in breast. Mean age group is 54-64 years. Size of the tumour is more than 4 cm. Here we present such a case of primary squamous cell carcinoma of breast.

**CASE REPORT**

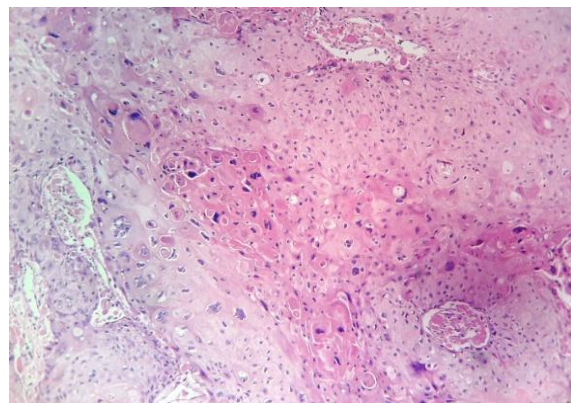
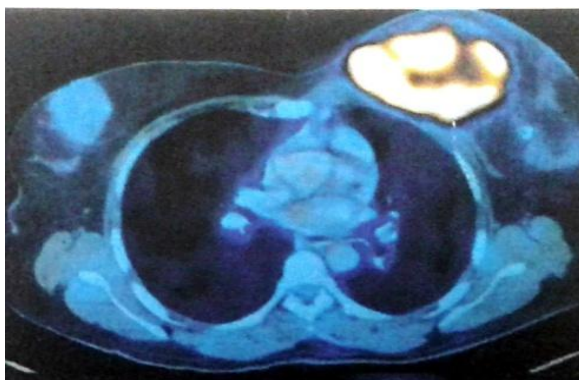
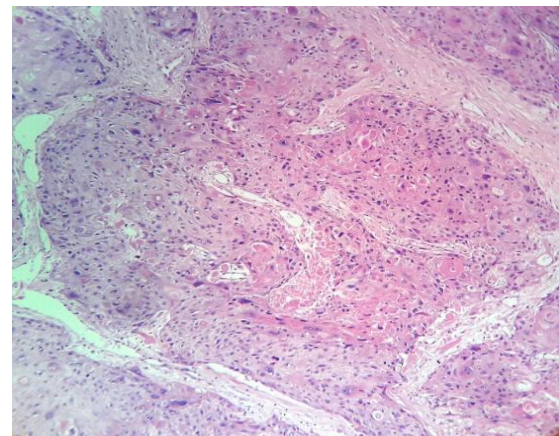
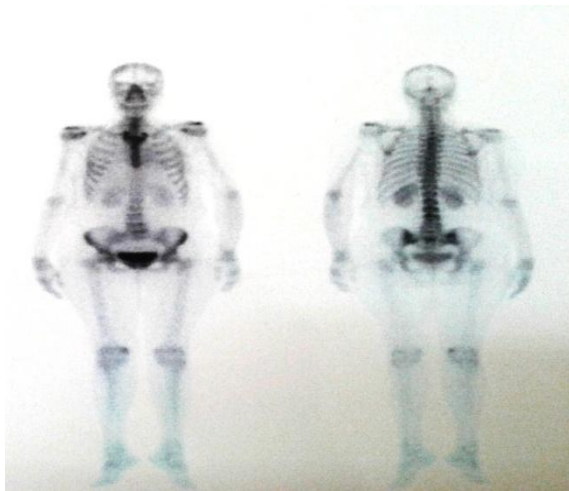
A 38 years old female patient had complaint of a lump in left breast since 6 months, gradually progressive in size, ultimately involving almost entire breast. No complaint of pain over the lump, skin changes or nipple discharge was there. She had no history suggestive of distant metastasis. She had a lump in left axilla.

**Primary metaplastic squamous cell carcinoma of breast**

Trucut biopsy from left breast lump showed poorly differentiated carcinoma with squamoid differentiation. Findings of whole body bone scan was normal (Image 1). Whole body PET CT scan showed a huge (12 cm. in maximum dimension) heterogeneously enhancing, partly necrotic and metabolically active mass in left breast; enlarged mild metabolically active left axillary lymph node (Image 2). There was no distant metastasis.

Patient had underwent left sided modified radical mastectomy. Histopathological examination from left breast tumour showed malignant squamous cells invading stroma in sheets (Image 3). Areas of necrosis were present. There was increased mitotic activity. Focal keratinohyalin granules and dyskeratosis were also seen (Image 4). No intervening malignant stromal component was seen. No malignant glandular component or skin structure involvement were seen. 18/18 axillary lymph nodes showed reactive hyperplasia and no malignant cell. In immunohistochemistry, neoplastic cells were negative for ER, PR and Her-2/neu.

The Patient was given 6 cycles of adjuvant chemotherapy with Paclitaxel and Carboplatin. Patient had received adjuvant radiotherapy.



## DISCUSSION

Metaplastic carcinoma is a rare subtype of carcinoma of breast. It represents less than 1% of all cases breast carcinoma.<sup>1</sup> Ellis et al have described metaplastic carcinoma of the breast as a heterogenous group characterized by admixture of adenocarcinoma with spindle cell, squamous cell or mesenchymal differentiation<sup>2</sup> World Health Organization has divided metaplastic tumours in two groups: pure epithelial (squamous cell, adenocarcinoma with spindle cell) and mixed epithelial-mesenchymal (carcinosarcoma with possible chondroid or osseous differentiation).

Pure squamous cell carcinoma of breast is very rare and is an aggressive variant of metaplastic carcinoma. Squamous cell carcinoma of breast accounts for less than 0.1% among all breast malignancy.<sup>3</sup> According to the definition of Macia et al., SCC of breast should have following criteria<sup>4</sup>

- No other neoplastic components (such as ductal or mesenchymal) in the tumour.
- Origin is independent of overlying skin and nipple.
- Absence of primary squamous cell carcinoma in another site. All these criteria were fulfilled in our patient also.

According to Rosen et al., more than 90% of cell of primary SCC of breast should be of squamous cell.<sup>5</sup> There are various opinion regarding origin of SCC of breast. It may be very extreme form of squamous cell metaplasia developing from ductal carcinoma cell. This has been supported by Stevenson et al. and this can explain origin of mixed variant.<sup>6</sup> An alternative theory is that SCC directly arises from epithelium of mammary ducts.

Mean age of presentation in this carcinoma is 54-64 years.<sup>7</sup> But in our case, patient's age at presentation was 38 years. Majority of patients are presented with a palpable mass, but may present with skin ulceration or an abscess.<sup>8,9</sup> Tumour size in this carcinoma is generally large (>4 cm) and cystic in almost 50% cases.<sup>10</sup> In our case, it was a large mass having no ulceration and maximum tumour dimension was 12 cm. A review of literature has found that almost 70% patients had no nodal involvement. But another series has shown that only 48% patients had node-negative disease. In this case, all(18/18) removed axillary lymph node were pathologically negative.

Regarding immunohistochemistry, this variant of breast carcinoma is associated with high Ki-67 proliferation index.<sup>11</sup> More than 85% patients are ER-, PR- and most of the patients are also HER-2/neu-.<sup>7</sup> It has been suggested that this variant behaves like basal type of breast carcinoma. In this case also, the specimen of the tumour was triple negative. Mitosis were plentiful in pathological examination.

Prognosis of this variant is poor. In the study by Hennesy et al. median overall survival was 37 months.<sup>7</sup> From the onset of distant metastasis, survival is less than 1 year.<sup>12</sup> Guideline regarding treatment of SCC of breast is not very clear. Initial management is modified radical mastectomy. Breast conservation is usually not

possible due to locally advanced presentation and less than optimal response to neoadjuvant therapy. As squamous cells are often radiosensitive, Henneesy et al. proposed early adjuvant radiotherapy. It failed to demonstrate statistically significant improvement (relapse-free rate of 45% among those receiving radiotherapy versus 33% among those not receiving radiotherapy).<sup>7</sup> In a small retrospective study by Chen et al., only 18% patients showed partial response to neoadjuvant chemotherapy and in metastatic setting only 8% patients responded to first-line chemotherapy.<sup>13</sup> In this series, no patient responded to anthracycline, vinorelbine or cyclophosphamide based regimen. In a study done in M.D.Anderson Cancer Center, 33 patients were included.<sup>7</sup> Median relapse-free survival of patients treated with chemotherapy was 24 months and median overall survival was 42 months. Different chemotherapeutic regimen were used. Taxane and Platin were added to common chemotherapeutic drugs (5-FU, Anthracycline, Cyclophosphamide). 19 patients were treated adjuvant radiotherapy. 5 year overall survival was 44% who received radiotherapy and 33% who did not. Number of patients was too small to draw any definitive conclusion. In this case, we had treated our patient with adjuvant chemotherapy (Paclitaxel+Carboplatin). Patient had also been treated with adjuvant radiotherapy.

### **CONCLUSION**

Primary metaplastic squamous cell carcinoma of breast is a rare malignancy and its aggressiveness should be kept in mind during taking decision regarding treatment.

### **REFERENCES**

1. PezziCM, Patel-ParekhL, ColeK, FrankoJ, KlimbergVS, BlandK. Characteristics and treatment of metaplastic breast cancer: analysis of 892 cases from the National Cancer Data Base. *Ann Surg Oncol* 2007;166-173.
2. EllisIO, SchnittSJ, Sastre-GarauX. Invasive breast carcinoma In: TavassoliF, DevileeP,eds. World Health Organization classification of tumours: pathology and genetics of tumours of the breast and female genital organs. Lyon, France: IARC, 2003;13-59.
3. GrenierJ, SoriaJC, MathieuMC. Differential immunohistochemical and biological profile of squamous cell carcinoma of the breast. *Anticancer Res* 2007;27:547-555.
4. Macia M, Ces JA, Becerra E, Novo A. Pure squamous carcinoma of the breast. Report of a case diagnosed by aspiration cytology. *Acta Cytol.* 1989;33201-4.
5. Rosen PR. Ch.21. Philadelphia, New York: Lippincott-Raven; 1997. Rosen's Breast Pathology; pp.397-404.
6. Stevenson JT, Graham DJ, Khiyami A, Mansour EG: Squamous cell Carcinoma of the breast: A clinical approach. *Ann Surg Oncol* 1996, 3:367-374.
7. Hennessy BT, Krishnamurthy S, Giordano S et al. Squamous cell carcinoma of the breast. *J Clin Oncol* 2005;23:7827-7835.
8. Aparicio I, Martinez A, Hernández G et al. Squamous cell carcinoma of the breast. *Eur J Obstet Gynecol Reprod Biol* 2008;137:222-226.

9. Behranwala KA, Nasiri N, Abdullah N et al. Squamous cell carcinoma of the breast: Clinico-pathologic implications and outcome. *Eur J Surg Oncol* 2003;29: 386–389.
10. Gupta G, Malani AK, Weigand RT, Rangenini G: Pure primary squamous cell carcinoma of the breast: A rare presentation and clinicopathologic comparison with usual ductal carcinoma of the breast. *Pathol Res Pract* 2006, 6:465-469.
11. Comellas N, Marin Gutzke M. Primary pure squamous cell carcinoma of the breast presenting as a breast abscess. *J Plast Reconstruct Aesthet Surg* 2009;62:e178–e179.
12. Luini A, Aguilar M, Gatti G et al. Metaplastic carcinoma of the breast, an unusual disease with Worse prognosis: The experience of the European Institute of Oncology and review of the literature. *Breast Cancer Res Treat* 2007;101:349–353.
13. Chen IC, Lin CH, Huang CS et al. Lack of efficacy To systemic chemotherapy for treatment of metaplastic Carcinoma of the breast in the modern era. *Breast Cancer Res Treat* 2011;130:345–351.