

## Squamous Cell Carcinoma of Breast in a 21 Years Old Female - A Rare Case Report.

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### ABSTRACT

Squamous cell carcinoma of breast is a very aggressive, treatment-refractory tumor, with a poor prognosis. The case is being presented in view of the age of the patient for this extremely rare tumor of which histogenesis is unclear and biologic studies are urgently needed to find out relevant treatment targets. To the best of our knowledge no case of SCC of breast has been reported in 21 years of age.

**Keywords:** Neoplasia, Squamous cell carcinoma.

### INTRODUCTION

Squamous cell carcinoma (SCC) does occur in breast but very rarely. Reported incidences of primary squamous cell carcinoma of breast vary between 0.1% to less than 0.04% of all breast carcinomas.<sup>[1]</sup> WHO puts squamous cell carcinoma of breast under the category of Metaplastic Breast Carcinoma.<sup>[2]</sup> Previously it has been diagnosed in adult women of ages ranging from 29 years to 90 years, with a median of 52 years of age.<sup>[3]</sup> The histogenesis of this tumor is not known but it is not a breast cancer, which evolves in the breast ducts. We here report a case of squamous cell carcinoma of breast in a 21 years old unmarried female.

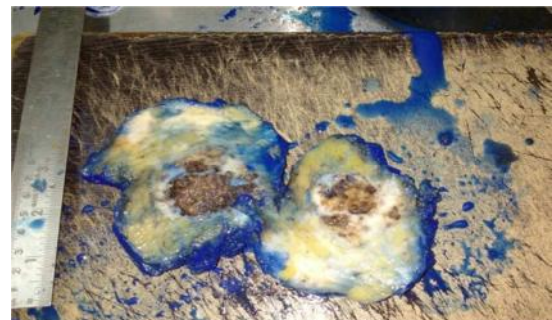
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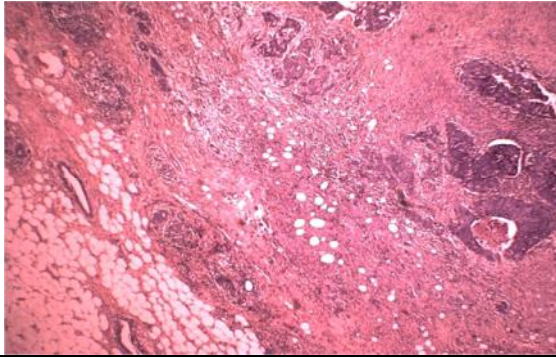
### CASE REPORT

A 21 years old girl presented with a palpable lump measuring 6x5cm in the right upper quadrant. Physical examination revealed firm, non tender mobile lesion. No lymph nodes could be palpated in axilla. FNAC revealed highly cellular smears. Smears showed cells with nuclear pleomorphism and atypia along with bipolar nuclei. It was reported as Proliferative breast disease with atypia and biopsy was advised. Tru cut biopsy was done and reported as carcinoma breast. Considering the age of the

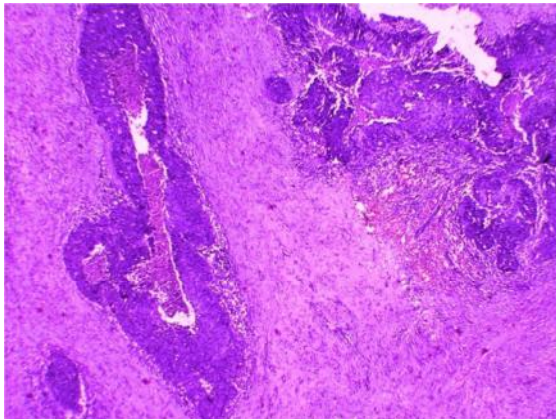
patient wide excision of mass was done. Grossly, specimen revealed a cystic cavity measuring 3.2x2.5x2cm surrounded by grey white area measuring 3.5x3.5 cm [Figure 1]. Microscopic sections showed breast tissue with ducts lined by squamous epithelial cells. [Figure 2] Individual cells had abundant eosinophilic cytoplasm and hyperchromatic pleomorphic nuclei with abortive squamous pearl formation. The ducts showed central necrosis. [Figure 3] The nests of malignant cells were infiltrating into the stromal tissue. [Figure 4] On immunohistochemistry, the cells were cytokeratin positive [Figure 5], p 63 positive [Figure 6], estrogen receptor negative [Figure 7], progesterone receptor negative (Figure 8), HER2/neu negative [Figure 9]. According to all these findings patient was diagnosed as a case of Squamous cell carcinoma of breast. Postoperative period was uneventful. Patient was referred to higher centres for further treatment.



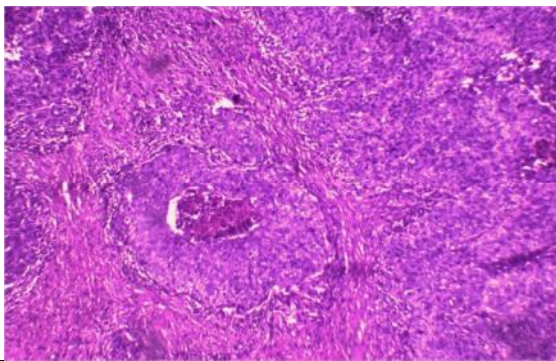
**Figure 1:** Grossly, specimen revealed a cystic cavity measuring 3.2x2.5x2cm surrounded by grey white area measuring 3.5x3.5 cm .



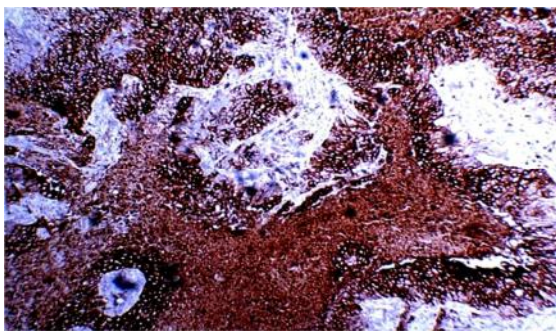
**Figure 2: Microscopic picture showing breast tissue with ducts lined by squamous epithelial cells (H&E,4X).**



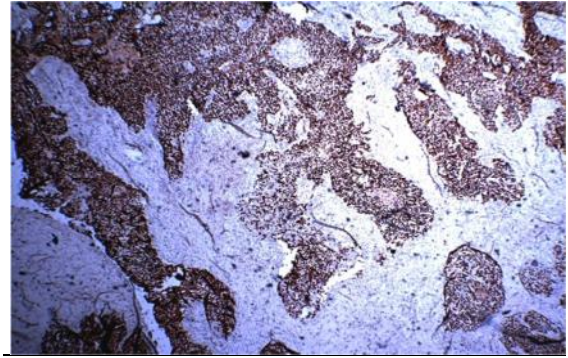
**Figure 3: Microscopic image showing ducts lined by squamous cells with central necrosis.(H&E stain,10x).**



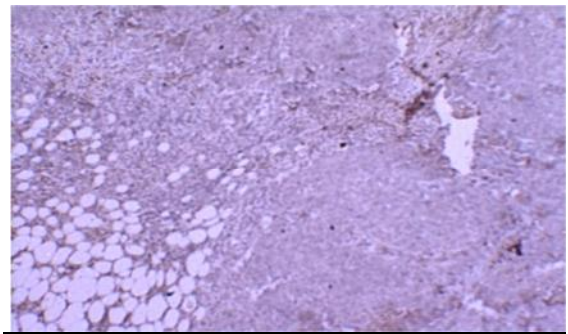
**Figure 4: Microscopic image showing nests of squamous cells infiltrating into stromal tissue.(H&E stain,10x).**



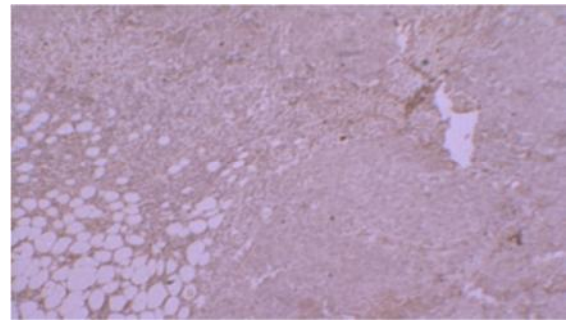
**Figure 5: Cytokeratin Positive.**



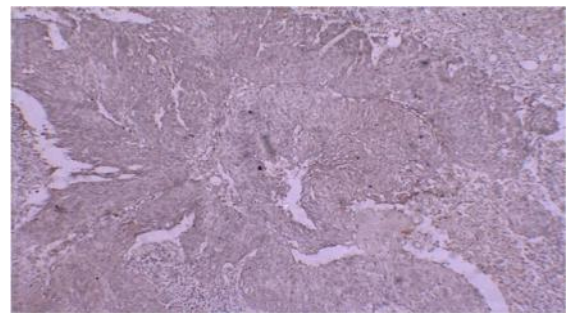
**Figure 6: P63 P Positive.**



**Figure 7: Estrogen Receptor Negative.**



**Figure 8: Estrogen Receptor Negative.**



**Figure 9: Her 2/neu Negative.**

## DISCUSSION

The rarity of this tumor is evident from the study conducted by Stevenson et al<sup>[4]</sup>. He reviewed 1,647 cases of malignant breast tumors indexed between 1945 and 1993 in the Oncology Data Center of Metro Health and found only eight cases of SCC or squamous metaplasia. Fisher et al found no cases of

squamous cell carcinoma in 1000 cases.<sup>[5]</sup> Gupta et al in 2005 identified 47 cases of SCC using strict diagnostic criteria.<sup>[6]</sup>

The criteria for diagnosis of SCC as described by Macia et al<sup>[7]</sup> are 1. No other neoplastic components such as ductal or mesenchymal elements are present in the tumor. 2. The tumor origin is independent of the overlying skin and nipple. 3. Absence of an associated primary SqCC in a second site. Rosen et al. found the presence of *in situ* squamous carcinoma in the ducts or a lesion in which more than 90% of the neoplasm is comprised of squamous carcinoma or its variant must for the diagnosis of primary squamous cell carcinoma.<sup>[8]</sup> This type of breast carcinoma should be distinguished from adenocarcinoma of breast with extreme squamous metaplasia.

Various theories postulated for its histogenesis include malignant growth of intrinsic epidermal elements (epidermal or dermoid cysts) and metaplasia from breast parenchyma (benign disease, e.g., cystosarcoma phyllodes, fibroadenomas, or breast malignancies, e.g., intraductal carcinoma,) or from chronic abscess. This is further supported by many cases in which primary squamous cell carcinoma is reported after its initial appearance as a benign disorder (abscess or after implantation of a breast prosthesis or after radiation therapy.<sup>[9]</sup> In our case we had no such history from the patient.

There are no findings on mammography specific to this diagnosis, which may explain the more-advanced disease stage at diagnosis. The most consistent feature of SCCB on mammogram is the lack of microcalcifications.<sup>[10]</sup> In our patient mammography was not done. Diagnosis was confirmed on tru cut biopsy.

Squamous cell carcinomas are reported to result in less lymphatic spread than adenocarcinomas. In 10-30% of cases, there is lymph node infiltration at the time of surgery<sup>[11]</sup>. Our patient also had no lymphnodes. Though in SCC lymphatic spread is rare still it is very aggressive, treatment refractory tumor with poor prognosis. Immunohistochemically, it is triple negative Similarly the tumor was ER, PR AND Her2/neu negative in this case. So, hormonal therapy is not useful. Rostock et al. suggests that SqCC is not sensitive to chemotherapeutic agents commonly used for ductal carcinoma such as methotrexate, cyclophosphamide, 5-fluorouracil (5-FU) and anthracycline<sup>[12]</sup> Hennessy et al. proposed early adjuvant radiotherapy despite being unable to demonstrate a difference (presumably because of small numbers) in the loco-regional relapse-free rate of 45% among those receiving vs 33% among those not receiving radiotherapy.<sup>[13]</sup>

The high frequency of EGFR positivity is interesting. The use of anti-EGFR, combined with synergic cytotoxic agents such as Platin or Taxanes, should be investigated in clinical trials.

Though initial recommended treatment in breast SCC is modified radical mastectomy, the surgeon preferred breast conservation because of very young age and the patient was sent to higher centre for radiotherapy and follow up.

## CONCLUSION

SCC of breast is aggressive and treatment refractory with frequent locoregional and distant relapses and resultant deaths. The role of platinum salts, EGFR inhibitors and other novel agents need to be explored.

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