

# Primary Squamous Cell Carcinoma of the Breast: A Rare Case Report

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## Abstract

Primary squamous cell carcinoma (SCC) of the breast is an extremely rare malignancy. It constitutes <0.1% of all primary invasive breast carcinomas. Pure primary SCC of the breast is a rare condition and is considered to arise through metaplastic change of ductal carcinoma cells. These tumors are usually hormone receptor (estrogen receptor [ER]/progesterone receptor[PR]) and HER2/neu - negative while endothelial growth factor receptor (EGFR) is frequently overexpressed. These are very aggressive and treatment-refractory tumors with a poor prognosis. Here, we present a case of 58-year-old female presented with a lump measuring 4 cm × 3 cm in her right breast since 8 months. Fine-needle aspiration cytology was positive for malignant cell. Right modified radical mastectomy was done. Histo-pathology proved it to be SCC with no axillary node involvement. ER and PR status was negative. Post-operative six cycles of chemotherapy were given. Use of anti-EGFR therapy, together with synergistic cytotoxics such as platinums and taxanes, should be explored in a clinical trial.

**Keywords:** Carcinoma, Mastectomy, Modified radical, Squamous cell

## INTRODUCTION

Primary squamous cell carcinoma (SCC) of the breast is a rare type of breast cancer. It constitutes <0.1% of all primary invasive breast carcinomas.<sup>1</sup> It is important to differentiate SCC of the breast from SCC of the other part of the body like skin, anal canal. This entity should be differentiated from malignancies of the skin of the breast. Clinical findings and radiological findings are not specific for this tumor. These tumors are very aggressive; hormone receptor (estrogen receptor [ER]/progesterone receptor[PR]) negative and treatment-refractory tumors with a poor prognosis.<sup>2</sup> Here, we report a case of a 58-year-old female with primary SCC of the right breast.

### Presentation of Case

A 58-year-old female presented with a lump in her right breast since 8 months. On examination, there was a

4 cm × 3 cm lump in right breast that was painless, mobile and hard in consistency with no palpable axillary lymph node as shown in Figure 1. Mammography revealed areas of stippled microcalcifications and irregular architecture of right breast. On fine-needle aspiration cytology of right breast lump malignant cells were present. Through investigations and work up done to rule out metastatic disease, the patient had no history of skin cancer, nor did she have any skin, oral or anal lesion. Patient underwent a right modified radical mastectomy as shown in Figure 2. The histopathological report of mastectomy specimen came out to be SCC with no axillary node involvement. Figure 3 is showing microphotograph with pearl-like appearance of SCC in breast tissue. ER and PR status was negative. Postoperative period was uneventful.

Patient was advised postoperative chemotherapy with paclitaxel and carboplatin combination. Patient took six cycles of chemotherapy. She has been keeping regular follow-up since.

## DISCUSSION

Primary SCC of the breast is a rare condition and thought to arise due to metaplastic change of ductal carcinoma cells.<sup>3</sup>

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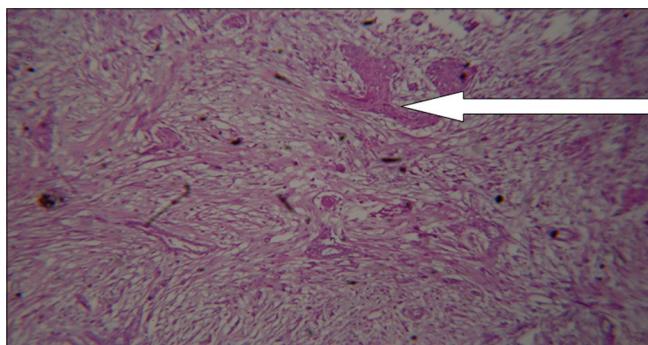
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**Figure 1:** Right breast with indicator showing lump



**Figure 2:** Wound after right modified radical mastectomy



**Figure 3:** Microphotograph of squamous cell carcinoma of breast. Indicator showing keratin pearl in breast tissue

Primary SCC of the breast is a rare and aggressive malignancy constituting <0.1% of invasive breast cancers. The standard textbooks of pathology and oncology do not mention pure SCC in their classification of malignant breast tumor. The origin of SCC in the breast is uncertain or exact histogenesis remains obscure. It may arise directly from the epithelium of the mammary ducts or from the foci of squamous metaplasia within a pre-existing adenocarcinoma

of the breast. There is also a hypothesis for malignant transformation of a deep-seated epidermal cyst.<sup>4</sup>

Radiologically, no typical mammographic appearances are seen except for the lack of the microcalcifications. Predominant appearance of SCC is cystic and seen in more than 50% of cases.<sup>5</sup> Clinically, they are indistinguishable from other breast malignancies and present as a usual hard breast lump. There are anecdotal reports of pyogenic abscess with underlying squamous cell malignancy.<sup>6</sup> Breast SCC is large size tumor at presentation. Likewise, our case was clinically T2N0 at presentation.

In spite of large primary tumor at the time of presentation there are less chances of lymph node metastasis compared to similar type of lesions of infiltrating duct carcinoma (IDC).<sup>7</sup> Similarly our patient had N0 disease in spite of thorough lymph node sampling. Unlike IDC, there is a significant incidence of distant metastasis even without lymph node involvement in primary SCC of breast. These tumors are usually ER/PR and HER2/neu - negative while endothelial growth factor receptor (EGFR) is frequently overexpressed.<sup>8</sup> Our patient was also triple negative on immunohistochemistry.

The treatment of SCC of the breast does not differ from other types of breast cancer and involve surgery, radiation therapy, chemotherapy and hormonal therapy. Because of its rarity the most appropriate treatment regimen for SCC of the breast is still controversial.

A recent literature review reveals that SCC of breast does not involve lymph nodes. But chances of micrometastasis are unpredictable, so axillary lymph nodes dissection should always be performed for staging purposes.<sup>9</sup>

The role of radiation in the treatment of SCC has been reported unclear in many studies. Although SCC is radiosensitive, locoregional relapse occurred frequently also in the irradiated field. It seems that SCC of the breast is often relatively radioresistant.<sup>3,7,9,10</sup>

SCC of the breast is regarded as aggressive as grade three poorly differentiated, hormone receptor-negative adenocarcinoma.<sup>9</sup> Due to locoregional spread, relapses and aggressive nature of SCC prognosis of the patient is controversial.

## CONCLUSION

SCC of the breast is rare. It is an aggressive disease associated with large primary tumors with low lymph node involvement and ER/PR negative. Current surgical

management is similar to that for the more common type of breast cancer. Use of anti-EGFR therapy together with synergistic cytotoxic, such as platinum and taxanes should be explored in clinical trials. Clinical trials including the large series of these rare tumors are needed to increase our knowledge and to improve patient's outcome.

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