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Primary Breast Squamous Cell Carcinoma in Developing Country – A Case Report

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Abstract: Primary breast squamous cell carcinoma (SCC) is an extremely rare malignancy tumour. Reported case of this diseases only less than 0.1% of all breast carcinomas. SCC of the breast have aggressive histological features at presentation, and have poor outcomes or poor prognosis. Management therapy of primary breast SCC does not differ from other common breast cancer. Because this is a rare disease, the standard therapy has not been established and may involve surgery, chemotherapy, hormonal therapy and radiation therapy. Clinical trials are needed to improve patient's outcome. This case of primary breast squamous cell carcinoma is reported in a 52-year-old women from Indonesia who presented with a lump in the left breast.

Keywords: Breast, squamous cell, carcinoma.

INTRODUCTION

Primary breast squamous cell carcinoma is an extremely rare malignancy of breast cancers with very few cases reported in literature [Goel, D. *et al*., 2021]. The incidence of this disease is 0.06- 0,1% (<0,1%) of all invasive breast carcinomas. World Health Organization (WHO) classification of primary breast squamous cell carcinoma is an epithelial-type of metaplasia breast carcinoma neither derived from the overlying skin, nor representing metastases from other sites of squamous cell carcinoma. Diagnosis requires that no other neoplastic elements are to be present in the tumour and must be independent from the overlying skin or nipple also no other primary carcinoma in the patient [Benoist, P. *et al*., 2018]. Due to its very low prevalence, a poor understanding and association with the absence of less standard treatment of breast SCC it will give poor outcomes and poor prognosis [Han, Y. *et al*., 2021].

CASE REPORT

A 52-year-old women from Indonesia presented with a lump in the left breast. Patient does not know how long the lump has existed but it was gradually progressive in size, associated with pain, not associated with fever, no nipple discharge, small retraction of the skin. There was no lump in other area, and no history of lumps. There was no family history of breast malignancy. Physical examination revealed a rubbery, little-pain and non-mobile lesion in the middle of the left breast, in the back of nipple. There is no enlargement of axillary lymph nodes. The skin and the nipple areola complex were not involved. Examination using radiographic imaging was carried out and the results were obtained an irregular-shaped hypoechoic lesion with an internal heterogeneous anechoic area (Figure 1). Then with the patient's consent a lumpectomy with radical excision will be carried out.

Lumpectomy with radical excision was performed. Grossly, the tumour was 5 × 4 × 4 cm in size. The cut section showed single lump with gray white appearance with few cystic areas. Not associated with pus (Figure 2).

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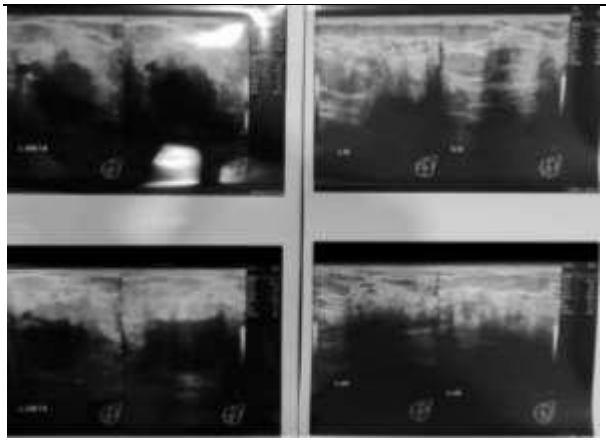

Figure 1: Ultrasonographic examination of the left breast showed an irregular-shaped hypoechoic lesion with an internal heterogeneous anechoic area

Figure 2: The excised part of a breast lump after lumpectomy. A 5x4x4 cm tumour has been seen

Histopathologically, the slide from the left breast contained fragments of an invasive tumour mass forming keratin pearls. Pleomorphic, vesicular, mitotic nucleated tumour cells were found. The stroma is lightly dusted with lymphocytes. No invasive lymphovascular was found in this preparation. Keratinized squamous cell carcinoma which is a component of metaplastic carcinoma (Figure 3). After obtaining clinical information that no skin lesions were found and additional incisions were made from the edges of the incision, the ductal carcinoma insitu component was obtained. Then the diagnosis was made as metaplastic carcinoma of the breast, type of keratinized squamous cell carcinoma. The margin of the incision are close to the tumour mass.

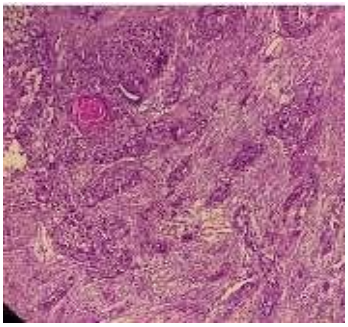

Figure 3: The preparation contained fragments of an invasive tumour mass forming keratin pearls. Pleomorphic, vesicular, mitotic nucleated tumour cells were found. The stroma is lightly dusted with lymphocytes. No invasive lymphovascular.

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After the diagnosis is established as SCC, then the patient is directed to receive chemotherapy according to standard SCC chemotherapy for 6 cycles. The patient was followed up, after one year, there was no recurrences in the patient and no lumps in other parts of body appeared.

DISCUSSION

Primary squamous cell carcinoma is a malignancy of the skin and other organs. It is composed of squamous cells, which are normally not found inside the breast. Accordingly, a primary breast squamous cell carcinoma is a greatly uncommon, <0.1% incidents of all breast carcinomas. The diagnosis is established when squamous cell carcinoma is the only malignancy found in the breast, the tumour does not involve with the skin of the breast and there are no metastases from another primary [Youssef, S. *et al*., 2015]. Furthermore, World Health Organization (WHO) classification of primary breast squamous cell carcinoma is an epithelial-type of metaplasic breast carcinoma derived from the overlying skin. No representing metastases from other sites [Benoist, P. *et al*., 2018].

SCC is a heterogenous tumour showing various histomorphologic patterns, including keratinizing, nonkeratinizing, cystic, papillary, spindle cell, clear cell, and acantholytic patterns. However, many of the published studies on primary SCC to date have not evaluated the biological behaviour of this tumour in the context of its varying histomorphology. The only histopathologic feature significantly associated with the presence of at least focal keratinization after evaluated multiple histologic features of the tumours. Keratinizing SCC had significantly improved compared with nonkeratinizing tumours [Nayak, A. *et al*., 2013]. Other literature said that the presence of in situ squamous carcinoma in the ducts is a must for the diagnosis of primary squamous cell carcinoma and they have defined that it must more than 90% of the neoplasm is comprised of squamous carcinoma or its variant [Badge, S.A. *et al*., 2014].

Patients with breast SCC has average age slightly younger than infiltrating ductal carcinoma patients with a median of 52 years of age [Soliman, M, 2019]. Similar to that literature, the median age of this report was 52 years. The etiology and pathogenesis of breast SCC is still unclear. Ultrasound may show a complicated cyst or an inflammatory process. Moreover, squamous cell metaplasia is also seen in cysts, chronic inflammations, abscesses and adenofibromas and there are no typical findings on the mammogram [Badge, S.A. *et al*., 2014].

Treatment of breast SCC is still unclear due to its rarity. It does not differ from other common histological types of breast cancer and may involve surgery, chemotherapy, hormonal therapy and radiation therapy [Badge, S.A. *et al*., 2014]. Other literature mention that the treatment of primary breast SCC includes surgery and postoperative related treatment. It has no established postoperative treatment plan. The adjuvant treatment should follow the guiding principles of invasive ductal carcinoma. However, due to the biological behaviour of this disease is very aggressive so that the conventional breast chemotherapy is not recommended [Lei, R. *et al*., 2020].

Therefore, diagnosis, treatment and prognosis are a challenging concern. There are two therapeutic targets. First, management could be modeled on that of triple negative adenocarcinoma with aggressive treatments at the outset. Second, to reduce morbidity in patients with primary breast SCC, treatment could also adapted to the according histological type (with adjuvant cures). This should be exploited in the development of future treatments [Pirot, F. *et al*., 2020].

Breast SCC is considered aggressive and has a poor prognosis. There are three studies that reported breast SCC survival outcomes using a database. First, Surveillance, Epidemiology and End Results (SEER) database from 1988 to 2001 reported 5 years survival rate of 125 localized breast SCC patients was 64%. Second, California Cancer Registry from 1988 to 2006 reported 177 breast SCC patients was 68.1% (5-year overall survival), while it was 83.9% for all other types of invasive ductal carcinoma (IDC). Third, based on the national cancer database in the United States between 2004 and 2014, showed that 5-year survival rate was 62.1% for 686 breast SCC patients and 83% for IDC patients [Ogita, M. *et al*., 2020].

CONCLUSION

Breast squamous cell carcinoma is extremely rare malignancy and aggressive tumour having poor prognosis and poor outcomes. The standard therapy has not been established and may involve surgery, chemotherapy, hormonal therapy and radiation therapy. Clinical trials including large series of these rare tumours are needed to increase our knowledge and to improve patient's outcome.

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