Scientific Research Publishing

Open Journal of Pathology, 2026, 16(1), 16-20
https://www.scirp.org/journal/ojpathology
ISSN Online: 2164-6783
ISSN Print: 2164-6775

Primary Squamous Cell Carcinoma of the Breast: A Case Report

Lalaina Nomenjanahary[1], Zo Irène Raivoherivony[1*], Vahatra Joëlle Razafimahefa[2], Nantenaina Soa Randrianjafisamindrakotroka[3]

[1]Department of Pathology, Joseph Ravoahangy Andrianavalona University Hospital, Antananarivo, Madagascar
[2]Department of Pathology, Andrainjato University Hospital, Fianarantsoa, Madagascar
[3]Department of Pathology, Medical School of Antananarivo, Antananarivo, Madagascar
Email: *ireneraivh@gmail.com

How to cite this paper: Nomenjanahary, L., Raivoherivony, Z.I., Razafimahefa, V.J. and Randrianjafisamindrakotroka, N.S. (2026) Primary Squamous Cell Carcinoma of the Breast: A Case Report. *Open Journal of Pathology*, **16**, 16-20.
https://doi.org/10.4236/ojpathology.2026.161002

Received: September 19, 2025
Accepted: November 15, 2025
Published: November 18, 2025

Abstract

Primary squamous cell carcinoma of the breast is rare. We report a case of primary squamous cell carcinoma of the breast. It is a 47-year-old woman. She has an ulcerated, budding mass measuring 11 cm in diameter in the right breast. She underwent a right mastectomy. The diagnosis was non-keratinizing, moderately differentiated squamous cell carcinoma of the breast, stage IIIB invasive. Immunohistochemical testing was negative for estrogen and progesterone receptors but positive for cytokeratin CK 5/6. Diagnosis is histological and it is important to differentiate its primary breast origin from skin tumors or metastases from other organs.

Keywords

Breast Cancer, Cytokeratin, Estrogen Receptor, Progesterone Receptor, Squamous Cell Carcinoma

1. Introduction

Breast cancer is the most common gynecological cancer. The most common histological type is non-specific carcinoma, followed by lobular carcinoma. Primary Squamous Cell Carcinoma of the breast (PSCC) is very rare, accounting for 0.1% to 2% of invasive carcinoma. Few cases have been reported in the literature to date [1]. It is important to differentiate its primary breast origin from skin tumors or metastases from other organs such as the esophagus, cervix, or anus.

We report a case of primary squamous cell carcinoma of the breast in order to differentiate its epidemiological and histopathological features.

2. Observation

The patient was a 47-year-old woman. She has two children and came to Joseph Ravoahangy Andrianavalona (JRA) University Hospital for a tumor in her right breast. The disease apparently began with a small breast nodule on the right side, without a skin lesion, which gradually increased in size and became increasingly painful. Due to a lack of financial resources, she had not consulted a doctor. Twenty-four months later, the lump had become ulcerated and very large, interfering with the patient's daily activities. She therefore came for a consultation at the oncology department of the JRA University Hospital.

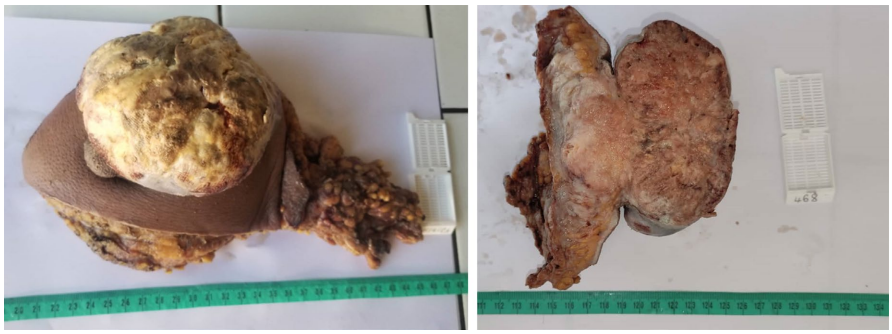
The medical history revealed no personal or family history of breast cancer.

Physical examination revealed an ulcerated, budding mass of the breast on the right side, measuring 11 cm in diameter, with lymphadenopathy. The contralateral breast was normal. The rest of the examination was normal.

Imaging did not reveal any other tumor locations.

The patient underwent breast fine needle aspiration, but the smears consisted mainly of inflammatory cells such as neutrophils, macrophages, and lymphocytes, against a dirty background, with no neoplastic cells, suggesting a suppurative mastitis lesion.

Despite the result of fine needle aspiration, the clinical appearance (Figure 1) prompted the oncologist to treat the mass as a malignant lesion. After two courses of chemotherapy, the patient underwent a mastectomy with lymph node dissection.



Source: Department of Pathology, JRA University Hospital.

Figure 1. Mastectomy with axillary lymph node dissection. Ulcerated lesion with necrotic-hemorrhagic changes on cut.

On macroscopic examination, the mastectomy specimen measured 17 × 13 × 4 cm and contained an ulcerated, budding mass measuring 11 cm, with heterogeneous white sections with necrotic and hemorrhagic changes (Figure 1). The lymph node dissection specimen measured 8 × 7 × 3 cm, with 39 lymph nodes ranging from 0.5 to 2 cm in diameter.

Histological examination revealed that the mass corresponded to a carcinomatous proliferation consisting of cells with moderate cytonuclear atypia. They were organized in clusters or rows, with squamous differentiation without keratinization. The stroma was necrotic and inflammatory. No other histological type was

observed. There was no evidence of Paget's disease of the nipple, endovascular carcinomatous, or perineural invasion. Only one of the lymph nodes showed metastasis, without capsular rupture.

The diagnosis was non-keratinizing, moderately differentiated squamous cell carcinoma of the breast, pT4bN1aM0, stage IIIB.

Immunohistochemical testing was negative for estrogen and progesterone receptors but positive for cytokeratin CK 5/6.

3. Discussion

Squamous cell carcinoma is one of the most common histological types of cancer that develops in an organ or system covered with squamous epithelium, such as the skin, cervix, vagina, esophagus, and anus. Its primary location in the breast is rare, with a frequency of 0.1% to 2% among invasive breast carcinomas [1].

Primary squamous cell carcinoma of the breast affects women aged 31 to 83, with a peak at 55 years old [2]. Our patient was 47 years old at the time of diagnosis.

The etiopathogenesis remains controversial. It has been suggested that it is an extreme form of squamous metaplasia developed on adenocarcinoma [3]. This hypothesis is the most widely accepted by authors, as the squamous cell carcinomas, they reported were consecutive to benign lesions likely to cause squamous metaplasia, such as inflammation, breast abscesses, or breast implants, or to radiotherapy sessions [4]-[9]. In our case, no similar history was reported by the patient.

The diagnosis of primary squamous cell carcinoma of the breast is made after ruling out a cutaneous origin, breast metastasis from a distant carcinoma, and a significant glandular component within the tumor [5] [10]. Our case was purely squamous cell carcinoma and there was no distant primary cancer, such as skin, cervix or vagina. The skin involvement was considered to be local extension at an advanced stage, as according to the history of the disease, the nodule, at first, was developed on the breast parenchyma without a skin lesion.

The clinical manifestation of our case was a clinically advanced breast mass (skin ulceration with budding lesion, with a lymphadenopathy). The clinical and radiological appearance of these tumors is not specific [1] [11].

In our case, the fine needle aspiration was only inflammatory, without tumor cells identified. The absence of tumor cells observed in this case could be due to the large inflammatory and necrotic appearance of the lesion and the samples did not show any neoplastic proliferation. But usually, this test helps the diagnosis, as in the cases of Zein Ahmed [1] and Gupta R. K. [12]. However, sometimes the fine needle aspiration is negative, as in our case, or leads to an inaccurate diagnosis, as in the case of Flikweert E. R. [11], where adenocarcinoma based on the fine needle aspiration was made. Histological examination provides the final diagnosis. It shows malignant squamous cells, cohesive, organized in clusters or rows, or in layers, with or without keratinization [13] [14].

Squamous cell carcinoma is not lymphophilic. More than 70% of reported cases

were free of lymph node metastasis [15]. In our case, however, one of the 39 lymph nodes was metastatic. Zein Ahmed [1] reported three positive lymph nodes in his case.

Unlike adenocarcinoma, squamous cell carcinoma of the breast lacks hormone receptors. If hormone receptor testing is positive, a glandular component that has gone unnoticed must be sought. This is a very aggressive tumor, with negative hormone receptors and refractory to treatment, with a poor prognosis. The prognosis appears to be comparable to that of undifferentiated carcinomas. [1] It was a malignant tumor with a low survival rate. Marital status, age, surgical procedure, tumor size, and several positive lymph nodes were independent predictors of patient survival. Researchers believed that breast squamous cell carcinoma was highly invasive and worse than the prognosis of typical triple-negative breast cancer [16].

4. Conclusion

Primary squamous cell carcinoma of the breast is rare. The clinical and radiological appearance is nonspecific, and fine needle aspirations are sometimes negative. Diagnosis is histological, but metastatic origin or extension of cutaneous squamous cell carcinoma must always be ruled out before confirming the primary nature of the breast tumor.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Ahmed, Z., Idriss, A.M., Heiba, A. and Sidi, I. (2019) Carcinome épidermoïde du sein: À propos d'un cas en Mauritanie. *Pan African Medical Journal*, **33**, Article 143. https://doi.org/10.11604/pamj.2019.33.143.18375

[2] Vidyasagar, M.S., Fernandes, D.J. and Ramanujam, A.S. (1998) Primary Squamous Cell Carcinoma of the Breast in a Young Woman: A Case Report and Review of Literature. *Indian Journal of Pathology and Microbiology*, **41**, 485-488.

[3] Stevenson, J.T., Graham, D.J., Khiyami, A. and Mansour, E.G. (1996) Squamous Cell Carcinoma of the Breast: A Clinical Approach. *Annals of Surgical Oncology*, **3**, 367-374. https://doi.org/10.1007/bf02305666

[4] Behranwala, K.A., Nasiri, N., Abdullah, N., Trott, P.A. and Gui, G.P.H. (2003) Squamous Cell Carcinoma of the Breast: Clinico-Pathologic Implications and Outcome. *European Journal of Surgical Oncology* (*EJSO*), **29**, 386-389. https://doi.org/10.1053/ejso.2002.1422

[5] Wrightson, W.R., Edwards, M.J. and Mcmasters, K.M. (1999) Primary Squamous Cell Carcinoma of the Breast Presenting as a Breast Abscess. *The American Surgeon*, **65**, 1153-1155. https://doi.org/10.1177/000313489906501212

[6] Zoltan, T.B., Konick, L. and Coleman, R.J. (2001) Pure Squamous Cell Carcinoma of the Breast in a Patient with Previous Adenocarcinoma of the Breast: A Case Report and Review of the Literature. *The American Surgeon*, **67**, 671-673. https://doi.org/10.1177/000313480106700717

[7] Tan, Y.M., Yeo, A., Chia, K.H. and Wong, C.Y. (2002) Breast Abscess as the Initial Presentation of Squamous Cell Carcinoma of the Breast. *European Journal of Surgical Oncology* (*EJSO*), **28**, 91-93. https://doi.org/10.1053/ejso.2001.1156

[8] Talmor, M., Rothaus, K.O., Shannahan, E., Cortese, A.F. and Hoffman, L.A. (1995) Squamous Cell Carcinoma of the Breast after Augmentation with Liquid Silicone Injection. *Annals of Plastic Surgery*, **34**, 619-623. https://doi.org/10.1097/00000637-199506000-00009

[9] Singh, H., Williams, S.P., Kinsella, V. and Lynch, G.R. (2000) Postradiation Squamous Cell Cancer of the Breast. *Cancer Investigation*, **18**, 343-346. https://doi.org/10.3109/07357900009012177

[10] Siegelmann-Danieli, N., Murphy, T.J., Meschter, S.C., Stein, M.E. and Prichard, J. (2005) Primary Pure Squamous Cell Carcinoma of the Breast. *Clinical Breast Cancer*, **6**, 270-272. https://doi.org/10.3816/cbc.2005.n.030

[11] Flikweert, E.R., Hofstee, M. and Liem, M.S. (2008) Squamous Cell Carcinoma of the Breast: A Case Report. *World Journal of Surgical Oncology*, **6**, Article No. 135. https://doi.org/10.1186/1477-7819-6-135

[12] Gupta, R.K. and Dowle, C.S. (1997) Cytodiagnosis of Pure Primary Squamous-Cell Carcinoma of the Breast by Fine-Needle Aspiration Cytology. *Diagnostic Cytopathology*, **17**, 197-199. https://doi.org/10.1002/(sici)1097-0339(199709)17:3<197::aid-dc5>3.0.co;2-c

[13] Carbone, S., Lobo Alvarez, R., Lamacchia, A., Almenar Gil, A., Martin Hernandez, R., Lopez Guerra, J.L., *et al.* (2012) Primary Squamous Cell Carcinoma of the Breast: A Rare Case Report. *Reports of Practical Oncology & Radiotherapy*, **17**, 363-366. https://doi.org/10.1016/j.rpor.2012.07.004

[14] Anne, N., Sulger, E. and Pallapothu, R. (2019) Primary Squamous Cell Carcinoma of the Breast: A Case Report and Review of the Literature. *Journal of Surgical Case Reports*, **2019**, rjz182. https://doi.org/10.1093/jscr/rjz182

[15] Tayeb, K., Saâdi, I., Kharmash, M., Hadadi, K., El Omari-Alaoui, H., El Ghazi, E., *et al.* (2002) Carcinome épidermoïde primitif du sein. À propos de 3 cas. *Cancer /Radiothérapie*, **6**, 366-368. https://doi.org/10.1016/s1278-3218(02)00258-5

[16] Cheng, Z., Han, T., Zhang, X., Li, X., Li, H. and Gu, J. (2019) Prognostic Factors for Breast Cancer Squamous Cell Carcinoma and Nomogram Development for Prediction: Population-Based Research. *Translational Cancer Research*, **8**, 2014-2023. https://doi.org/10.21037/tcr.2019.09.13