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Lactating breast abscess: a rare presentation of adenosquamous breast carcinoma

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ABSTRACT We report the case of a 33-year-old lactating woman who presented with a 10-cm breast abscess. Biopsy of the abscess wall revealed a poorly differentiated invasive ductal carcinoma. The patient had no family history of breast cancer or other risk factors for breast cancer. The disease was considered to be a large noninflammatory invasive breast cancer, for which the patient received neoadjuvant chemotherapy, breast-conserving surgery using axillary dissection (the patient did not consent to a mastectomy), and postoperative radiotherapy. Final histologic examination revealed a 4-cm, triple negative, high-grade adenosquamous carcinoma. At follow-up four years after surgery, the patient was doing well with no signs of recurrence. Adenosquamous carcinoma is an extremely rare disease that mainly presents in low-grade forms. High-grade forms are aggressive and frequently present with axillary involvement. To the best of our knowledge, there has been no report of adenosquamous carcinoma presenting as a breast abscess in the literature. The case we report highlights that, although rare, cancer should be considered in lactating breast abscesses.

Keywords: abscess, breast, carcinoma

INTRODUCTION

Inflammatory disorders of the breast, including mastitis and breast abscesses, are generally benign diseases that rarely harbour malignancy. Although the occurrence of cancer is not anticipated in true breast abscesses in nursing mothers, it can occasionally happen. Herein, we present a rare case of adenosquamous carcinoma of the breast in a 33-year-old lactating woman who presented with a breast abscess.

CASE REPORT

A 33-year-old lactating woman presented to our breast clinic with signs of inflammation in her left breast – the skin was largely erythematous and warm over a tender 10-cm fluctuating mass, and several soft, non-suspicious lymphadenopathies were observed in the left axilla. According to the patient, the inflammation began two months prior to presentation and temporarily subsided with the use of oral antibiotics; when the use of oral antibiotics was discontinued, the inflammation flared up. Ultrasonography performed one month prior to presentation showed a multiloculated 93-mm × 82-mm × 63-mm fluid-containing cavity in the left breast, which was suggestive of a breast abscess, and large reactive axillary lymph nodes in the same side.

Intravenous antibiotics were prescribed, lactation ceased, and the cavity was surgically drained, yielding more than 300 mL of diluted pus. As routinely done in our institution, multiple biopsies were performed using the tissue obtained from the abscess wall. The wound was left open for delayed, spontaneous healing. Histologic review revealed a poorly differentiated invasive ductal carcinoma. Mammography and ultrasonography revealed no other pathology in the breasts. The patient's metastatic work-up, consisting of double contrast spiral computed tomography (CT) of the chest, abdomen and pelvis, and a bone scan of the whole body, was negative. The patient had no family history of breast cancer, and no other known risk factor was detected.

Before proceeding with cancer treatment, we had to first determine whether the abscess was an inflammatory carcinoma or an invasive noninflammatory carcinoma presenting as an abscess. Although the inflammatory signs of the breast were in favour of the former diagnosis, a mismanaged large and persistent breast abscess is not uncommon in milk-laden breasts. Hence, the possibility of a lactating abscess superimposed on a typical invasive tumour was considered. However, since the pathologist who reviewed the histology slides could not detect any cancerous involvement in the dermal lymphatics, it was decided that the disease would be treated as a large noninflammatory invasive breast cancer.

Following the diagnosis, the surgical wound was immediately closed to allow rapid initiation of neoadjuvant chemotherapy, which involved four cycles of treatment with cyclophosphamide, epirubicin and 5-fluorouracil, followed by four cycles of treatment with taxotere. As the patient did not consent to a mastectomy, breast-conserving surgery with a wide normal margin and axillary dissection was performed. The postoperative course was uneventful. Postoperative radiotherapy consisted of a 5,000-cGy breast and regional lymphatic area irradiation and a 1,000-cGy irradiation boost to the tumour bed.

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Final histologic examination of the specimens after neoadjuvant chemotherapy showed no involvement in the ten excised lymph nodes, and all margins were free of tumour. The breast mass was found to be a 4-cm, triple negative, high-grade adenosquamous carcinoma. At follow-up four years later, the patient was doing well and harboured no sign of recurrence.

DISCUSSION

It is extremely rare for a malignant breast lesion to simultaneously harbour adenocarcinomatous and squamous carcinomatous components. Such tumours have been called 'adenocarcinoma with squamous differentiation', 'muco-epidermoid carcinoma' and 'adenosquamous carcinoma', with the latter being the most commonly employed term.[1] Although these rare tumours, which are probably a variant of metaplastic carcinomas,[1-4] present mainly in low-grade forms,[3] they are also seen as high-grade tumours. In the low-grade form, the prognosis is good,[1] with a low probability of metastasis or contralateral disease reported thus far.[2] As shown in the four cases reported by Ho et al,[4] where fine needle aspiration and core biopsy were not able to yield sufficient tissue for precise histologic diagnosis, arriving at the final diagnosis is difficult in low-grade adenosquamous carcinomas. Van Hoeven et al[3] reported 32 cases of low-grade adenosquamous carcinoma of the breast. In that study, the mean age of the patients was 57 (range 33–88) years, and all patients presented with palpable masses that had a mean tumour size of 2.8 (range 0.6–8.6) cm. Although most of those tumours had favourable features (i.e. hormone receptor-positive without axillary or distant metastases), a high frequency of local recurrence was detected (at follow-up two years after treatment, 5 out of 25 patients were found to have local recurrences). To date, mastectomy or lumpectomy with normal margin remains the treatment of low-grade adenosquamous carcinoma.[3]

High-grade adenosquamous carcinoma is an aggressive form of metaplastic carcinoma that frequently presents with axillary involvement.[1] To the best of our knowledge, there is scant information regarding this condition in the literature.[3] Lee et al[1] reported the case of a 57-year-old woman who presented with a 7-cm ill-defined, fixed solid mass, which was diagnosed as a high-grade adenosquamous carcinoma using the results of a fine needle aspiration. The patient was treated using a modified radical mastectomy, and histologic examination confirmed the diagnosis. Axillary lymph node and skin involvement, and Paget's disease of the nipple were also detected. Oestrogen and progesterone receptors were negative in the immunohistologic examination.[1]

Based on our literature search, there has been no report of an adenosquamous carcinoma presenting as a breast abscess. However, there are several reports of primary squamous cell carcinoma of the breast presenting as breast abscesses – Gupta et al,[5] Damin et al,[6] Tan et al[7] and Salemis et al[8] reported non-lactating breast abscesses in women aged 39–70 years, whose primary squamous cell carcinomas of the breast were diagnosed using histologic examination of abscess walls. Primary squamous cell carcinoma of the breast is rare, accounting for less than 0.4% of all cases of breast cancer.[5] There are also reports of primary breast B-cell lymphoma that present with the initial clinical image of breast sepsis – Sun et al[9] and Antoniou et al[10] reported a unilateral and a bilateral case, respectively. The patients in those two reports did not harbour a typical abscess despite the highly inflammatory clinical features of the breast. Likewise, Kelten et al[11] reported the case of a 38-year-old patient with invasive ductal carcinoma whose medullary features presented clinically as a breast abscess, but was later revealed to be a large cystic mass with solid papillary components on ultrasonography.

The classification of inflammatory breast disorders according to aetiology was discussed in a report by Kamal et al.[12] In their study,[12] the cases of mastitis were categorised into three types – infectious, noninfectious and malignant, with the latter comprising 5.6% of mastitis cases and accompanying inflammatory breast carcinoma, or very rarely, malignant breast abscess. In that study, none of the patients with malignant breast abscess were lactating, and all patients were aged over 40 years. Kamal et al recognised that ultrasonographic features could scarcely differentiate between infectious and malignant cases. Ill-defined collections and abscess cavities were in favour of the infectious type, while malignant axillary nodes were in favour of the malignant type. The authors recommended that non-lactating women with antibiotic-resistant cases of mastitis undergo immediate mammography, ultrasonography, skin biopsy and aspiration of the subdermal lymphatics to exclude cancer.[12]

In conclusion, the present case highlights that although malignancy in breast abscesses in lactating mothers is rare, it can occasionally happen. Thus, clinicians should be aware of this possibility and include it in the differential diagnosis when appropriate. This is likely to be more important in developing countries, where breast cancer occurs at a younger age.

REFERENCES

1. Lee WY, Cheng L, Chang TW. High grade adenosquamous carcinoma of the breast diagnosed by fine needle aspiration cytology. Acta Cytol 1999; 43:323-5.
2. Agrawal A, Saha S, Ellis IO, Bello AM. Adenosquamous carcinoma of breast in a 19 years old woman: a case report. World J Surg Oncol 2010; 8:44.
3. Van Hoeven KH, Drudis T, Cranor ML, Erlandson RA, Rosen PP. Low-grade adenosquamous carcinoma of the breast. A clinocopathologic study of 32 cases with ultrastructural analysis. Am J Surg Pathol 1993; 17:248-58.
4. Ho BC, Tan HW, Lee VK, Tan PH. Preoperative and intraoperative diagnosis of low-grade adenosquamous carcinoma of the breast: potential diagnostic pitfalls. Histopathology 2006; 49:603-11.
5. Gupta C, Malani AK. Abscess as initial presentation of pure primary squamous cell carcinoma of the breast. Clin Breast Cancer 2006; 7:180.
6. Damin AP, Nascimento FC, Andreola JB, et al. Primary epidermoid carcinoma of the breast presenting as a breast abscess and sepsis. Sao Paulo Med J 2011; 129:424-7.
7. Tan YM, Yeo A, Chia KH, Wong CY. Breast abscess as the initial presentation of squamous cell carcinoma of the breast. Eur J Surg Oncol 2002; 28:91-3.

8. Salemis NS. Breast abscess as the initial manifestation of primary pure squamous cell carcinoma: a rare presentation and literature review. Breast Dis 2011; 33:125-31.
9. Sun LM, Huang EY, Meng FY, et al. Primary breast lymphoma clinically mimicking acute mastitis: a case report. Tumori 2011; 97:233-5.
10. Antoniou SA, Antoniou GA, Makridis C, Spyrou A, Malkotsi T. Bilateral primary breast lymphoma masquerading as lactating mastitis. Eur J Obstet Gynecol Reprod Biol 2010; 152:111-2.
11. Kelten C, Sen Turk N, Kesen Z, Akbulut M, Duzcan E. Fine-needle aspiration biopsy of an invasive ductal carcinoma with medullary features presented with abscess formation. Diagn Cytopathol 2010; 38:624-5.
12. Kamal RM, Hamed ST, Salem DS. Classification of inflammatory breast disorders and step by step diagnosis. Breast J 2009; 15:367-80.