

A Case of Squamoid Eccrine Ductal Carcinoma of the Breast

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Squamoid eccrine ductal carcinoma (SEDC) is very rare sweat gland tumor. SEDC should be diagnosed pathologically with a combination of immunohistochemical and microscopical analysis. SEDC has a possibility of local recurrence and subsequent metastasis. It has been reported that most of SEDC occurred at head, neck and trunk, but no report has been reported about SEDC at breast. Furthermore, sonographic findings are not discussed yet. We report a case of squamoid eccrine ductal carcinoma in breast of 44-year-old woman with sonographic result.

Index words: Sweat gland tumor; Squamoid eccrine ductal carcinoma; Ultrasonography

Squamoid eccrine ductal carcinoma (SEDC) is very rare malignant cancer (0.01% of Eccrine carcinoma) and difficult to distinguish from other sweat gland carcinoma (1, 2). It is first described as three cases in 1997 (1). Histopathologically, SEDC has a feature of low-grade malignancy and locally aggressive behavior with potential for recurrence, but there is still no study of disease-related mortality about SEDC. It has been reported that most of SEDC occurred at head, neck and trunk, but no report has been reported about SEDC at breast (2).

In this report, we present a case of squamoid

eccrine ductal carcinoma in breast with sonographic result.

Case presentation

A forty four years old female patient without any medical history presented to us for a management of a eccrine sweat gland carcinoma in left breast. There was no palpable lesion in both breast. Breast sonography revealed 1.19×0.98 cm sized microlobulated hypoechoic mass in left breast and mammotome excision was done.

According to the pathological report, the patient was diagnosed a eccrine sweat gland carcinoma (Fig. 2). The immunohistochemical stain revealed ER (Estrogen receptor) and PR (Progesterone receptor) were positive and HER2 was negative.

After pathologic diagnosis, cancer work up (CT

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scans of the chest, abdomen, whole body bone scan, and PET-CT) was conducted and all results was negative for metastasis.

After localization of the lesion by ultrasonography, left partial mastectomy with sentinel lymph node biopsy, and the intraoperative radiation therapy of breast was done. Intraoperative histological examination revealed one of the two resected sentinel lymph nodes from axilla shows positive result for metastatic carcinoma.

Discussion

Eccrine sweat gland carcinoma (ES) is a extremely rare type (about 0.005~0.01%) of sweat gland tumor. ES could cause a local tissue inflation of tumor and regional/distal metastasis (3). Rate of recurrence, metastasis, and death is known as 17.5%, 40%, and 17.5% each (4).

As a variant of ES, SEDC is known as 1.3 times as likely to occur in male group than female group. (5) The most probable areas are head, neck, and extremities, and age of range is 30 ~ 90 years old. Typical SEDC would accompany a skin lesion

including ulcer, which our patient didn't show.

SEDC should be diagnosed pathologically with a combination of immunohistochemical and microscopical analysis. Histologically, SEDC is poorly circumscribed, with an infiltrative growth pattern, and deep extension into the dermis and

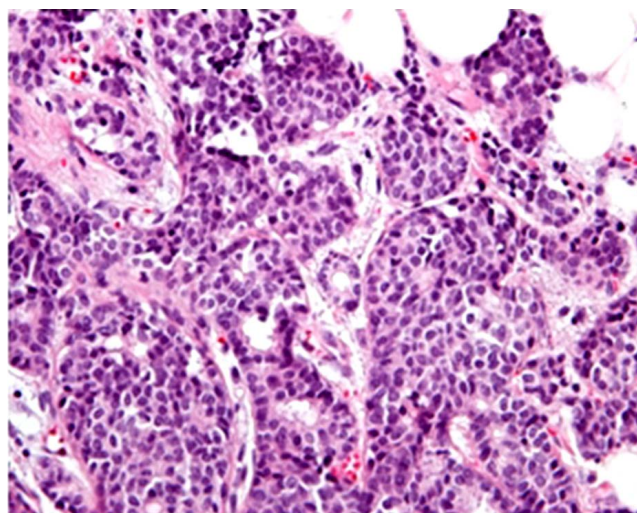


Fig. 2. Squamoid eccrine ductal carcinoma of breast in 44-year-old woman.

Infiltrating solid tumor nests with tubule formation, which imply ductal differentiation. Tumor cells show hyperchromatic nuclei with vesicular nuclear membrane, and some have clear cytoplasm (× 400, H & E staining).

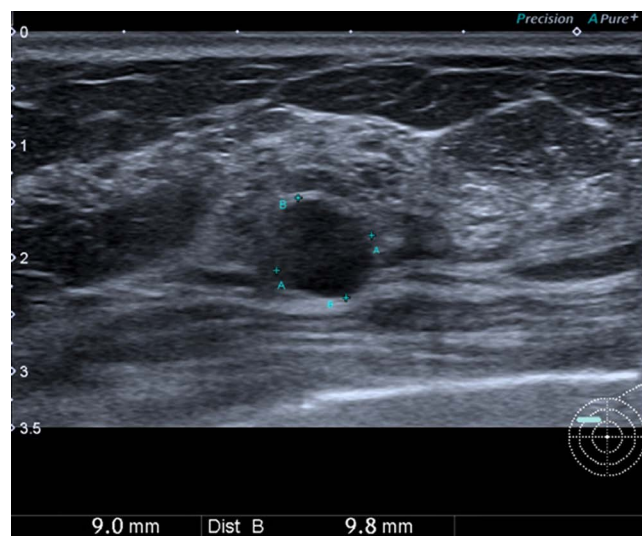
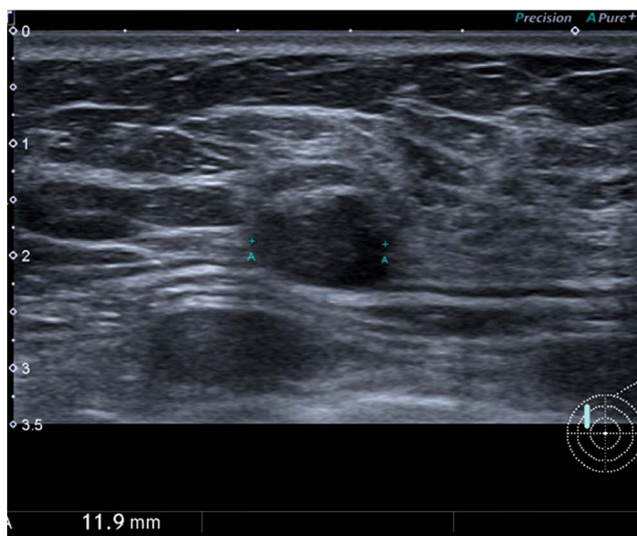


Fig. 1. Squamoid eccrine ductal carcinoma of breast in 44-year-old woman.
(a) Transverse and (b) Logitudinal image. Oval shape, microlobulated margin, hypoechoic mass is shown on sonography. (BI-RADS category 4a). Posterior enhancement is also noted. BI-RADS = Breast Imaging Reporting and Data System



subcutaneous adipose tissue. There is prominent squamoid differentiation, most apparent superficially, where neoplastic aggregates are larger and composed of epithelial cells with abundant amphophilic cytoplasm (5). However, there are currently no specific methods to specifically differentiate SEDC from other ES and this highlights an incomplete understanding of the origin of ES, the lack of a standard nomenclature, and the lack of specific stains to delineate cells of epithelial, eccrine and apocrine origin.

Immunohistochemistry, The tumor aggregates in SEDC stain positively for keratin markers including CK5/6, CK903, Cam 5.2, and CK116. EMA and CEA show reliably positive staining in all cases of SEDC (1, 6). However, as our specimens were extracted only from the patient's breasts, we already had to use ER/PR/HER2, P53, and Ki67 markers not like general immunohistochemical methodology of sweat gland carcinoma. The results turned out to be ER(+)/PR(+)/HER(-), which correspond with the features of hormone receptor positive breast cancer.

The majority of the SEDC cases were confirmed only by excisional biopsies, without any medical imaging evaluation. There was a case which found some evidences of SEDC on hands with PET-CT scan, but sonographic assumption is not fully discussed yet (7). Furthermore, there has not been any single report about breast SEDC so far. Some reported about malignant sweat gland tumor occurred on breast, but those were all limited to apocrine carcinoma. In those cases, invasive ductal carcinoma (IDC) and invasive apocrine carcinoma (IAC) are addressed as hard to be distinguished with sonographic assist only (8).

As SEDC is quite rare, standard treatment for SEDC is not well clarified yet. Some reports said they could just follow treatments for similar diseases, such as eccrine carcinoma and squamous cell carcinoma. Local excision was reported as effective in SEDC and another study showed an adjuvant therapy would be helpful (9).

Also, It is still controversial about the prognosis of SEDC. Terushkin et al (5), There is only one case recurred after 3 excisions. The rest of the patients either had no recurrence after a short follow-up (3-14 months) or were lost to follow-up. According to Wildemore et al (10), there is a high rate of local recurrence and subsequent metastasis after conventional surgical excision of eccrine carcinoma.

In conclusion, we presented case of SEDC in breast with sonographic feature. Although it is difficult to distinguish SEDC from other breast cancer by this one sonographic feature, it is important that our study is first report of SEDC in breast. It also demonstrated a immunohistochemistry of ER(+)/PR(+)/HER2(-).

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유방의 에크린땀샘에 발생한 편평세포도관암에 대한 증례보고

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에크린땀샘의 편평세포도관암은 매우 드문 땀샘종양이다. 이는 현미경적, 그리고 면역조직화학적 방법을 통해 병리학적으로 진단하게 된다. 이 질환은 국소재발과 원격전이의 가능성이 있다. 이는 주로 두경부와 체부에서 발생하는것으로 알려져 있고, 유방에서 발생한 경우는 보고되어 있지 않다. 또한 이 질환에 대한 초음파소견도 논의된 바가 없다. 저자들은 44세 여성의 유방에서 발생한 에크린땀샘의 편평세포도관암의 증례를 초음파 소견과 함께 보고하고자 한다.

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