Editor-in-Chief:
Dr. Nguyen Phuong Sinh

Received:
07/11/2024

Accepted:
25/12/2024

Published:
31/12/2024

Competing interests:
The authors have no competing interests to declare

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SCLEROSING ADENOSIS OF BREAST: A CASE REPORT

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ABSTRACT

Background: Sclerosing adenosis is increasing in glandular elements of terminal duct lobular unit with stromal fibrosis that distorts and compresses glands. It is commonly diagnosed in women aged 30 - 50 years with clinically manifestations that are not location – specific and sometimes without symptoms. Histopathology on Hematoxylin and Eosin (HE) stained samples can sometimes lead to misdiagnosis with invasive carcinoma. **Objective:** Describe the histopathological features and the necessity of myoepithelial markers in the diagnosis of the case. **Methods:** a case report method and searched for relevant articles. **Results:** The patient underwent excision of the mass for histopathological examination with HE staining and immunohistochemical staining. The positivity of the P63 and CK5/6 markers confirmed the diagnosis of sclerosing adenosis. **Conclusion:** The combination of myoepithelial markers is essential for the diagnosis of sclerosing adenosis. This disease increases the risk of bilateral breast cancer, so following-up after treatment is essential.

Keywords: Sclerosing adenosis; Breast; Breast cancer

INTRODUCTION

Sclerosing adenosis is a benign lesion of the breast. It can coexist with other proliferative diseases or breast tumors. Although not considered a premalignant lesion, sclerosing adenosis is associated with a two-fold increase in the risk of breast cancer[1]. Pathologically, it is characterized by proliferation of glandular cysts and fibrous connective tissue, altering the normal structure of breast lobules. This makes it challenging to differentiate sclerosing adenosis from carcinoma in clinical and imaging studies, so histopathological examination remains the gold standard for diagnosis.

In this case, I present a 31-year-old female patient with sclerosing adenosis. The HE-stained histological specimen showed microscopic features difficult to distinguish from invasive ductal carcinoma, necessitating immunohistochemical staining for diagnostic confirmation.

CASE REPORT

A 31-year-old female patient with no prior medical history had a mass in her right breast after five-months postpartum. Upon ultrasound examination, there was a hypoechoic mass measuring 1.5 x 1.2 cm at the 11 o'clock position and located 4 cm from the nipple in the right breast. The ductal structures were not dilated, and there was no skin retraction, with a BI-RADS 4b. Fine-needle aspiration biopsy (FNAB) under ultrasound guidance was performed and the results of cytology showed a benign breast lesion. The patient was subsequently scheduled for surgical excision of the mass for histopathological examination.

Histopathological Results of the Tumor:

Gross description: Two tissue samples with measuring 1 x 0.5 cm and 0.5 x 0.3 cm were observed. The tissue was pinkish-white in color with reddish-brown areas. The samples were sectioned and processed in their entirety for analysis.

Image 1. Macroscopic image of the right breast tumor

Microscopic description: The breast tissue shows proliferation of terminal ducts, with increased fibrous and collagenous tissue compressing the ductal structures, causing distortion. In some areas, the ducts are arranged in clusters or bands. The epithelial cells are cuboidal, with uniform nuclei and fine chromatin. Some ductal lumens contain eosinophilic secretions. Myoepithelial cells are difficult to assess.

Immunohistochemical Staining:

- CK5/6: Positive
- P63: Positive

Conclusion: Sclerosing adenosis.

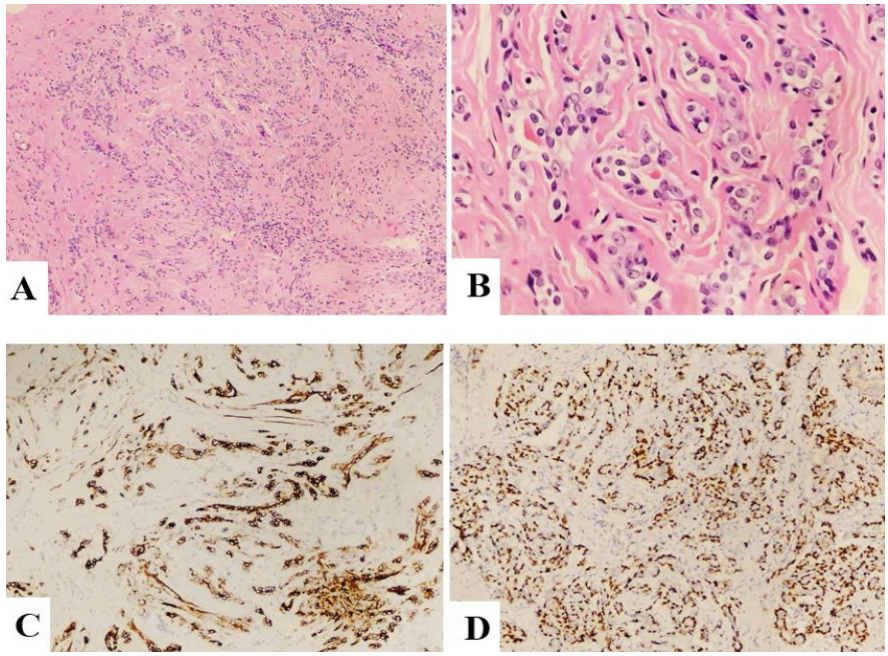

Image 2. A, B: Proliferation of glandular and stromal tissue compressing the ducts, causing distortion and flattening into clusters and bands. HE 100x and 400x; C: Positive for CK5/6, 100x; D: Positive for P63, 100x

DISCUSSION

Sclerosing adenosis is a benign proliferative lesion of the breast, found in 27.8% of benign breast biopsies and in 3.1% of breast lesions in autopsy studies[2-3]. It is more common in premenopausal women, those using postmenopausal hormone therapy, and women with multiple pregnancies[1]. The exact cause of this disease is not well understood, though some authors suggest that estrogen may stimulate epithelial proliferation, leading to disease development and other epithelial tumors[3].

Sclerosing adenosis is often asymptomatic and discovered incidentally during mammographic screening or histopathological examination for other

reasons. It can present as a palpable mass, referred to as a nodular fibroadenoma, which is commonly found in younger women, typically between 30 and 45 years old[4-5]. This characteristic aligns with our patient's age and the palpable nature of the lesion.

Histopathologically, this lesion is complex and involves the central areas of breast lobules. It is characterized by enlarged, distorted lobules containing crowded ducts compressed by collagenous stromal tissue, which can be mistaken for invasive carcinoma. The distortion is more prominent near the center of the lesion, with some ductal spaces potentially completely obliterated, resulting in a dense mass appearance. The proliferating ducts may extend into surrounding fatty tissue or mimic perineural invasion. The epithelial cells are typically small, cuboidal or columnar, with centrally located nuclei. Myoepithelial cells are found at the periphery of the ducts, and the ratio of myoepithelial to epithelial cells varies. In my case, the widespread fibrosis hindered the identification of myoepithelial cells, and the basement membrane was difficult to evaluate. To differentiate from invasive carcinoma, immunohistochemical staining for myoepithelial markers P63 and CK5/6 was performed, with positive results confirming the benign feature of the tumor.

Although sclerosing adenosis is benign, it is a risk factor for breast cancer. Some studies have shown that the risk of developing breast cancer is increased by 1.7 - 2.5 times, and in the presence of atypical hyperplasia, the risk may increase by 6 - 7 times[6]. In a study by Moritani et al, 5 out of 23 patients progressed

to contralateral breast cancer, either synchronously or metachronously[7]. Therefore, careful examination of the contralateral breast is recommended for patients with large fibroadenomas or in situ carcinoma associated with sclerosing adenosis[7].

Sclerosing adenosis is more likely to progress to lobular carcinoma in situ than to ductal carcinoma in situ, as it originates from the lobules of the breast. Authors Slane and Mayers suggest that the size of the lesion and the age of the patient are related to cancer risk. Patients with widespread fibrosis are at a higher risk of cancer. Lesions greater than 3 cm in size should be closely monitored. For lesions showing size increases, morphological changes, or suspicious features on imaging, biopsy or excision is recommended, as these may progress to ductal carcinoma in situ or invasive carcinoma[8]. Wong H and colleagues followed two patients initially diagnosed with sclerosing adenosis who developed in situ carcinoma and invasive cancer after 7 years[6].

CONCLUSION

A case of a 31-year-old female patient with a tumor in her right breast diagnosed as sclerosing adenosis by histopathological examination. The Hematoxylin Eosin staining could be mistaken for invasive carcinoma. Immunohistochemical staining for P63 and CK5/6 confirmed the benign nature of the lesion. Sclerosing adenosis carries a risk of progression to cancer in both breasts, so regular monitoring with ultrasound or mammography is recommended. If any changes are detected during follow-up imaging,

biopsy or excision should be performed, even in the absence of clinical symptoms.

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