CASE REPORT

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Cytological diagnosis of epidermal inclusion cyst of the breast: A rare benign entity

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Abstract

Epidermal inclusion cysts are benign, most commonly found in the head, neck, and trunk. EIC arising from the breast is an uncommon benign condition. We report one case of enlarging the EIC of the breast. The diagnosis of this condition may not be straightforward with imaging alone if an EIC presents as an enlarging lump in the breast and mimics a benign breast lesion, most commonly a fibroadenoma or malignant lesion with benign imaging features. Excision is usually recommended for a definite histopathological diagnosis and the prevention of potential risks of malignant transformation. Asymptomatic stable lesions do not require treatment; a biopsy is unnecessary.

Keywords: *Breast, cytology, epidermal inclusion cyst (EIC), FNAC*

Introduction

The benign cutaneous or subcutaneous cysts known as epidermoid cysts can develop anywhere on the body. Epidermal inclusion cysts (EIC) in the breast are a rare benign disease. This phrase describes cysts that develop due to the proliferation and implantation of epidermal components within a defined dermis area. Cysts of this type can develop anywhere in the body. It is uncommon for EIC to grow in the breast skin. Such lesions are typically mistaken for breast lumps and are not one of the primary differential diagnoses for benign breast lesions. We herein describe a rare instance of an epidermal cyst of the breast in a 30-year-old woman that was initially misdiagnosed as a fibroadenoma but was ultimately determined to be an EIC after fine needle aspiration.

Case report

A palpable tumor in the right breast of a 35-year-old woman had been present for a year and had progressively become larger. Pain, fever, coughing, or trauma were not previously reported. The patient did not mention having ever had pulmonary tuberculosis, a chronic illness, or taking any medications for an extended period. A solitary, 2.5 2 cm, non-tender, movable enlargement was found during a physical examination in the upper outer quadrant of the right breast. The breast had no secretion, and the areola and nipple weren't very noteworthy. On the opposite side, the axilla was healthy. An analysis of the entire system found nothing unusual. The patient was sent for FNAC after receiving a clinically tentative diagnosis of either fibroadenoma or mastitis. Prior USG had been completed. The next time an ultrasound was performed, a substantial, well-circumscribed, heterogeneously hypoechoic mass measuring 2x1 cm was visible. Within the lesion, there was no colour flow indication seen. Under strict aseptic guidelines, the FNAC of the bulge was carried out using a 23-gauge needle. The smears were stained with H&E stains for early identification, and the aspirate was granular and white. The smears revealed numerous sheets, clusters, and dispersed anucleated squames with only a tiny amount of anucleate keratin. No more cellular components were visible. The findings were consistent with the epidermoid cyst **(Figure 1.)**.

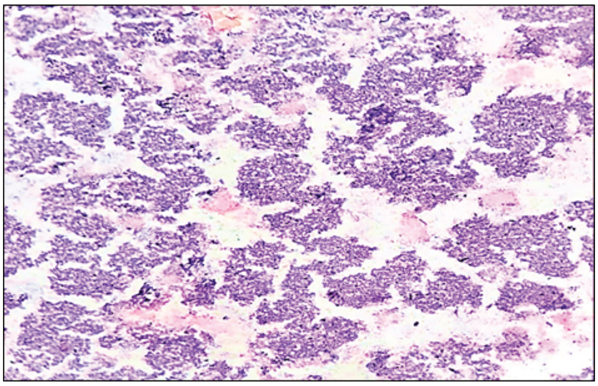

Fig 1. FNAC shows anucleated keratin and a few anucleated squames

Discussion

An epidermoid cyst is a benign cystic lesion that develops when epidermal components proliferate and are implanted in a specific dermis area. Epidermoid cysts are pretty uncommon in the breast. The head, neck, face, back, and trunk are most frequently involved. Clinically and radiologically, it was often misinterpreted as benign in young people or malignant in older people with breast lesions. The differential diagnoses include mastitis/lipoma, low-grade mucinous cancer, phyllodes, and fibro adenoma. On FNAC, all of these were quickly recognised. As a result, FNAC plays a crucial preoperative function because it is an outdoor therapy that is quick, simple, and straightforward to do (1). EIC may arise from several causes that could harm the epidermis placed within the breast tissue (2). In our case, the aetiology of EIC appears to be a hair follicle obstruction because there is no history of prior trauma, surgery, or lumps. EIC in the breast grows deeply into the subcutaneous tissue, making it difficult to clinically and radiologically identify a breast tumour because the breast contains flexible fat and mammary gland tissue under its skin. It may resemble duct carcinoma in elderly individuals, while it is frequently mistaken for a fibroadenoma in younger people. But as in our instance, secondary inflammation in the EIC of the breast can potentially result in a false clinical diagnosis of mastitis. We misdiagnosed it as recurrent mastitis, possibly caused by tuberculosis, because the patient had a history of pain coupled with glistening overlaying skin in the past and present (2). Rupture, inflammation, and abscess are the most frequent consequences of the epidermoid cyst(1). Despite being known to be benign, epidermal inclusion cysts occasionally can turn malignant and develop into squamous cell carcinoma (3). According to Cameron and Hilsinger, the cyst wall epithelium does sometimes (0.045%) develop into cancer (4). The FNAC plays a crucial role in this situation because its output is straightforward, simple to use, rapid, and accurate. Lesions without symptoms don't need to be treated. In these situations, surgical excision and histological analysis are required to diagnose and arrest malignant transformation development properly.

Conclusion

Epidermal inclusion cyst is a rare entity in the breast and is under-reported because of insignificant clinical presentation and unknown etiopathogenesis. We have presented this case because of its rare presentation. This example also showed the significance of FNAC, which can be utilised to definitively diagnose this lesion and allay unfounded fears of underlying cancer.

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