

Epidermal Inclusion Cyst of the Breast: A Rare Benign Entity

Indira V^{1*}, Srikanth S², Jyothi M³

¹Professor & HOD, ²Professor, ³Assistant Professor, Department of Pathology, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, Telangana, India

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*Corresponding author: Dr. V Indira

Abstract

Case Report

The epidermoid cyst is a type of adnexal tumor of pilosebaceous origin. It is also called as keratinous cyst or epidermoid cyst. Such cysts most commonly occur on the scalp and in the skin of the neck and back, whereas occurrence of these cysts in breast, skin and parenchyma is very rare. Diagnosis is straight forward for epidermal inclusion cysts that occur in the breast sub cutis as a small nodule, but enlarged cysts presenting in the breast parenchyma require them to be differentiated from malignant or benign tumors of the breast. Here we present a case of epidermal inclusion cyst of the breast. Epidermoid cyst of the breast is a rare benign lesion. Breast is an uncommon site. In the breast, clinically and radiologically these lesions are often mistaken as benign or malignant tumors. Infection and malignant transformation are the potential risk. Preoperative Fine Needle Aspiration Cytology (FNAC) is essential for the effective management of the epidermoid cyst in the breast.

Keywords: Fibroadenoma, epidermal inclusion cyst, breast.

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INTRODUCTION

An epidermal inclusion cyst is lined by a cornified epithelium, has a distinct granular layer, and contains lamellated keratin without calcification. Such cysts most commonly occur on the scalp and in the skin of the neck and back, whereas they are only rarely found in other areas, including the skin of the breast. Epidermal cysts in the breast are believed to arise through several different mechanisms. First, they can develop from obstructed hair follicles. Second, they may result from trauma, such as that due to reduction mammoplasty or needle biopsy of the breast, which may cause torn fragments of the epidermis to become implanted deep within the breast tissue [1]. Third, they can be created by squamous metaplasia of normal columnar cells within an ectatic duct in an area of fibrocystic disease or in a fibroadenoma[2].

Epidermoid cyst in breast is an uncommon lesion, its rarity accounting for it being erroneously misdiagnosed as carcinoma or a benign lesion like fibroadenoma. Importance of recognizing this lesion lies in the fact that it can be mistaken for any benign or malignant lesion of the breast both clinically as well as radiologically. Classically, radiologically epidermoid cyst gives an onion ring appearance of alternating concentric hyperechoic and hypoechoic rings at sonography, representing multiple layers of keratin. The

true incidence of malignant change in epidermoid cysts is not known, although it may occur rarely. Fine needle aspirate cytology serves a simple, yet efficient tool in diagnosing this lesion for which simple excision is curative.

CASE REPORT

A 28 years old female came with complaints of swelling in the right breast associated with pain since six months. She consulted General Surgery Outpatient department and both clinically and radiologically it was diagnosed as Fibroadenoma. FNAC was not done for this case. Grossly we recieved fibrofatty soft tissue mass measuring 3x3x2.5cm. Cut section is well circumscribed nodule measuring 2.5x2 cm, grey white and lobulated. Focal areas show tiny cystic spaces of 4mm filled with pearly white material.

On microscopy multiple sections studied shows an encapsulated lesion having features of pericanalicualr fibroadenoma. At places there is increased proliferation of stromal cells with areas of hyalinisation. One dilated duct revealed lining of squamous epithelium and lumen filled with keratin material, periphery of these ducts show lymphocytic infiltration. Cyst wall at places showed giant cells periphery of the lesion showed breast tissue. The acini are showing lactational changes. Within the lesion also

few acini are showing vacuoles in the cytoplasm. With these findings it was diagnosed as Fibroadenoma with epidermal cyst.

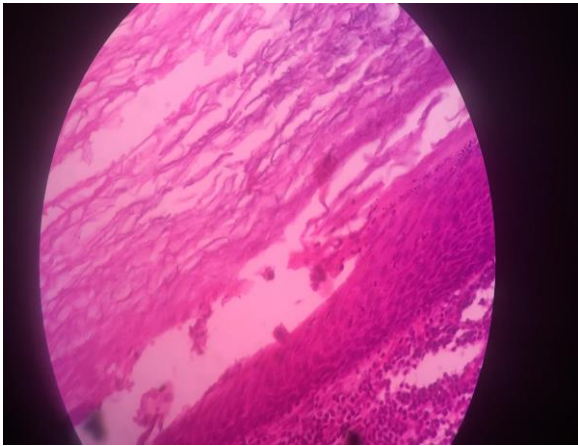


Fig-1: Section showing cystic arae showing lined by stratified squamous epithelium filled with keratinous material. [H&E, x40]

DISCUSSION

Epidermal inclusion cyst (EIC) of the breast is an uncommon benign condition and is usually located in the skin layer. EIC refers to cysts that result from the proliferation and implantation of epidermal elements within a circumscribed space in the dermis. Such cysts can occur anywhere in the body although they are more common on the face, trunk, neck, extremities and scalp. The occurrence of EIC in the skin of the breast is rare. Lesions of such nature are frequently thought to be breast lumps, and are not included as one of the main differential diagnoses of benign breast lesions. EIC typically appears to be well circumscribed with homogeneous increased density on mammography. On sonography, breast EIC may have a solid, well-circumscribed and complex or heterogeneous appearance. Crystal and Shaco-Levy described the specific sonographic features of breast EIC as an onion-ring appearance, with alternating concentric hyperechoic and hypoechoic rings corresponding to the pathologic features of lamellated keratin [3]. In addition, Denison et al in their report on cysts described another specific sonographic feature of breast EIC – its extension into the dermis [4].

The diagnosis is straightforward when EIC occurs as a small nodule in the subcutaneous tissue of the breast. However, EIC occurring in the breast parenchyma can occasionally be misdiagnosed based on

imaging alone, especially if it presents as a breast lump with mammographic and sonographic images mimicking a fibroadenoma or phyllodes tumour, or even a malignant breast lesion with benign features such as mucinous carcinoma. Although epidermal inclusion cysts are known to be benign, they may rarely have malignant potential, with transformation into squamous cell carcinoma. Menville *et al.* found that 19% of the patients with EIC in his case series showed malignant squamous cell lining on histopathological examination [5]. However, Cameron and Hilsinger reported that malignant transformation of the cyst wall epithelium occurs very rarely (0.045%)[6]. As the incidence of EIC occurring in the breast parenchyma is small, with variable reports on the incidence of its malignant change, the actual percentage is uncertain.

Therefore, asymptomatic stable lesions do not require treatment; biopsy is unnecessary, and follow-up imaging suffices if typical sonographic and clinical findings are found. However, in symptomatic cases presenting with an enlarging palpable breast lump, even with typical sonographic appearances, excision is usually recommended for definitive histopathological diagnosis so as to exclude a malignant lesion with benign imaging features, and for the prevention of potential risk of malignant transformation.

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