

## Cytological Diagnosis of Epidermoid Cyst of Right Breast: Diagnostic Dilemma Due to Uncommon Site

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### Abstract

Epidermoid cyst of the breast is a rare, benign cystic lesion, diagnostically challenging, interesting entity that may potentially be malignant as well as associated with complications like rupture. We diagnosed an epidermoid cyst of right breast in a 52-year-old female on fine needle aspiration cytology (FNAC). We highlight the role of FNAC in diagnosing such rare but benign entities like epidermoid cyst for effective (simple excision) management of the patients. To the best of our knowledge; only 90 cases of epidermoid cyst of breast were reported in the literature till 2016.

**Keywords:** Breast, Cytology, Epidermoid cyst, FNAC.

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### Introduction

An epidermoid cyst is a benign lesion of pilosebaceous origin and occurs anywhere in the body.<sup>(1)</sup> These are most commonly seen over scalp, neck, back and trunk. Epidermoid cyst in breast is an uncommon entity.<sup>(1)</sup> Previously the names of epidermoid cyst are epidermal inclusion cyst (EIC), sebaceous cyst or cyst of follicular infundibulum.<sup>(1)</sup>

To the best of our knowledge in international literature through Scopus, Embase, Medline databases only 90 cases of EIC of breast were reported till date that is up to 2016.<sup>(2)</sup>

We highlight the role of FNAC in arriving at a correct pre-operative diagnosis with a simple rapid, non-invasive, cost-effective method in such rare benign and diagnostically challenging lesions.

### Case History

A 52-year-old woman was referred to our hospital for evaluation of palpable lump of right breast. On local examination the mass was solitary, firm, mobile lump measuring 2.5 x 2cm in lower inner quadrant of right breast (Fig. 1). The lump was free from overlying skin as well as from underlying structures. Clinically provisional diagnosis of mastitis or fat necrosis was made and patient was sent for FNAC. Prior USG or mammography was not done. FNAC of the lump was performed using 23-gauge needle under all aseptic precautions. The aspirate was granular, whitish and the smears were stained with Giemsa stain and Toluidine blue stains for early diagnosis. The smears stained showed many sheets, clusters and scattered anucleated and few nucleated squames rendering the diagnosis of epidermoid cyst (Fig. 2 & 3). Many entrapped adipose tissue fragments are also seen. Later on histologically confirmed the same as cyst lined by squamous epithelium and lumen filled with lamellated keratin. The post-operative was uneventful.

### Discussion

Epidermoid cyst is benign cystic lesion formed due to proliferation and implantation of epidermal elements within a circumscribed space in the dermis.<sup>(3)</sup> Breast is a very uncommon site for epidermoid cyst. Head, neck, face, back and trunk are the common sites.<sup>(4)</sup> Its rarity accounting for being erroneously misdiagnosed as benign lesions like mastitis, fibro adenoma, phyllodes, lipoma or carcinoma. As per Morris PC et al.<sup>(5)</sup>, only 2 cases of epidermoid cyst were noted over a period of 3 years from mammography screening programme with 57,954 examinations in Australia. To the best of our knowledge, our case is be the second case report where epidermoid cyst was first and solely diagnosed on FNAC after Sharma S and Pujani M.<sup>(6)</sup>

Till date, international literature has reported 90 cases of epidermoid cyst of breast with combined modalities of FNAC, USG and mammography as per Paliottha A et al.<sup>(2)</sup> in 2016.

The exact etiopathogenesis of epidermoid cyst is poorly understood. Various theories are believed regarding the etiology: as congenital anomaly arising from all rests remaining from the embryonic mammary ridge; result of traumatic/surgical changes as are needle biopsy/mammoplasty which may cause implantation of epithelium or the stimulation of epithelial proliferation; as squamous metaplasia within an area of fibrocystic change or fibro adenoma.<sup>(5,7)</sup>

Most of the times, it was misdiagnosed as benign in young or malignant lesion of breast in old age both clinically as well as radiologically. The differentials are fibro adenoma, phyllodes, low grade mucinous carcinoma or mastitis/lipoma. All these were easily captured on FNAC.<sup>(4)</sup> Hence the role of FNAC comes as it is simple, easy to perform, OPD procedure, quick and gives the results with a reliable accuracy preoperatively.<sup>(4)</sup>

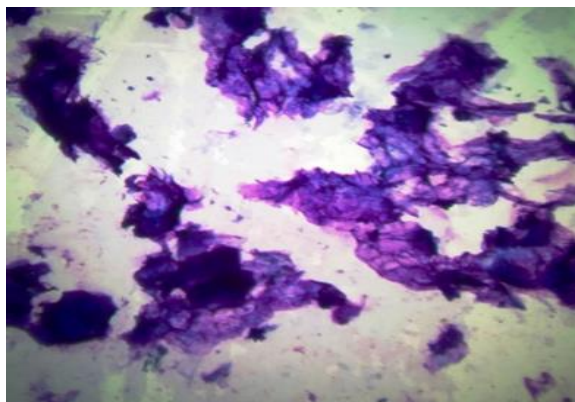
Cytodiagnosis of dermoid cyst, branchial cyst, thyroglossal cyst, pilomatrixoma etc. are the close

differential diagnoses for epidermoid cyst. Most of the cysts have the same cytology as epidermoid cyst but presence of hair follicles, central lesion sites favors dermoid whereas lateral side of neck, young patient favors diagnosis of branchial cyst. Mucinous cells or a columnar cell with colloid and clinically the diagnosis of thyroglossal cyst is rendered. Presence of foreign body giant cells and basaloid; shadow cells favors diagnosis of pilomatrixoma on cytology.

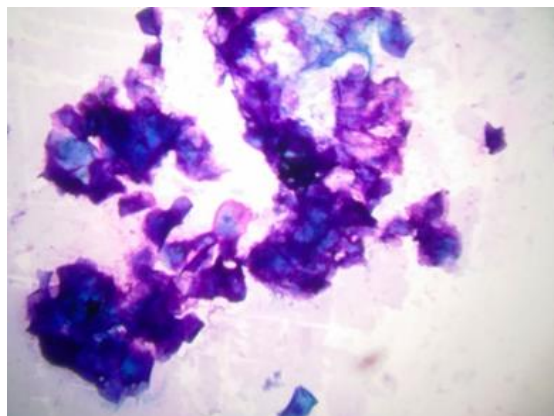
The complications of epidermoid cyst are inflammation, abscess and rupture most commonly.<sup>(6)</sup> Other rare but important is malignant transformation to squamous cell carcinoma. The incidence of malignant potential is highly variable (0.045-19.0%) and true incidence remains uncertain.<sup>(2,3)</sup>



**Fig. 1: Gross appearance of firm, mobile lump in lower inner quadrant of right breast**



**Fig. 2: Cytology showed numerous anucleated and few nucleated squames entrapped in adipose tissue (Toluidine blue, x100)**



**Fig. 3: Cytology showed numerous anucleated and few nucleated squames entrapped in adipose tissue (Toluidine blue, x100)**

### Conclusion

Epidermoid cyst is a rare entity in breast and under-reported because of insignificant clinical presentation and unknown etiopathogenesis. The fine needle aspiration cytology serves as a simple, quick, routine but definitive and efficient tool in diagnosing this lesion and allay the unwanted fears of underlying malignancy.

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