

Epidermoid cyst in the breast: A common benign lesion at a rare site

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ABSTRACT

Epidermoid cyst of the breast is very rare and benign lesion. We report three cases in females who presented with breast lump. It often mimics benign/malignant breast tumors on clinical and radiological examination. Infection and malignant transformation are the potential complications. Fine-needle aspiration cytology is essential for accurate preoperative diagnosis. Excision of epidermoid cyst in the breast is recommended to avoid potential complications.

Key words: Breast, cyst, epidermoid, squamous

INTRODUCTION

Epidermoid cysts are benign lesions and can occur anywhere in the body. They are more common in the head, neck, trunk and extremities. There are three types of epidermoid cyst: (1) Epidermal/infundibular cyst. (2) Trichilemmal cyst. (3) Sebaceous cyst. Occurrence in the breast is very rare. To the best of our knowledge, <50 cases have been reported in the English literature.^[1-7] Infection and malignant transformation are the potential risk. Due to rarity of the lesion, we herein report three cases of breast epidermoid cyst with a brief review of literature.

CASE REPORT

Table 1 shows clinicopathological profile of three cases.

Case 1

A 32-year-old female presented with a painless, mobile lump (1 cm × 1 cm) in the right breast since 1-year. Fine-needle aspiration cytology (FNAC) smears showed

numerous anucleate, few nucleate squamous cells and keratinous debris [Figure 1a and b].

Case 2

A 35-year-old female presented with well-defined two lumps (3 cm × 2.5 cm and 2.5 cm × 2 cm) in the left breast since 8 months. She gave a history of intermittent pain. Ultrasonography (USG) revealed well defined homogenous echogenic masses. Multiple fibroadenoma/adenosis was suggested. FNAC smears from the larger lump showed numerous anucleate squamous cells with few having nuclei. FNAC smears from the smaller lump showed cohesive sheets of ductal epithelial cells having regular round nuclei and many bare bipolar nuclei on the background. Scanty fibromyxoid stroma was seen at places. A diagnosis of fibroadenoma and epidermoid cyst was made.

Case 3

A 28-year-old female presented with breast lump (1.8 cm × 1.5 cm) in the left breast. There was history of intermittent pain. FNAC smears showed numerous anucleate squamous cells, foreign body giant cells and chronic inflammatory cells [Figure 2a].

There was no enlargement of axillary lymph nodes in all three cases. Mammography was not done in any case. Histopathology examination showed cyst wall lined by stratified squamous epithelium and lamellated keratin [Figure 2b].

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Table 1: Clinicopathologic profile of epidermoid cyst in the breast

Case number	Age/sex	Clinical presentation	USG diagnosis	FNAC diagnosis
1	32/female	Rt breast lump (1 cm×1 cm)	Benign breast lesion	Epidermoid cyst
2	35/female	Lt breast lump (3 cm×2.5 cm and 2.5 cm×2 cm)	Multiple fibroadenoma/ adenosis	Epidermoid cyst and fibroadenoma
3	28/female	Lt breast lump (2 cm×1.5 cm)	Fibroadenoma	Epidermoid cyst

*Rt: Right, Lt: Left, FNAC: Fine-needle aspiration cytology, USG: Ultrasonography

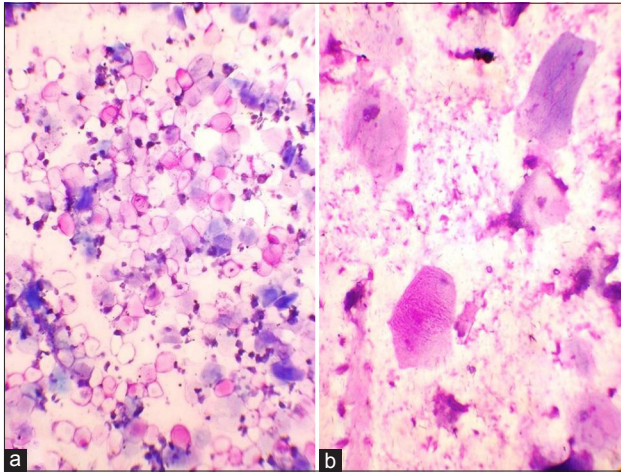


Figure 1: (a) Fine-needle aspiration cytology smears show anucleate and nucleated squamous cells (Leishman's stain, 100). (b) Squamous cells and keratinous debris (Leishman's stain, ×400)

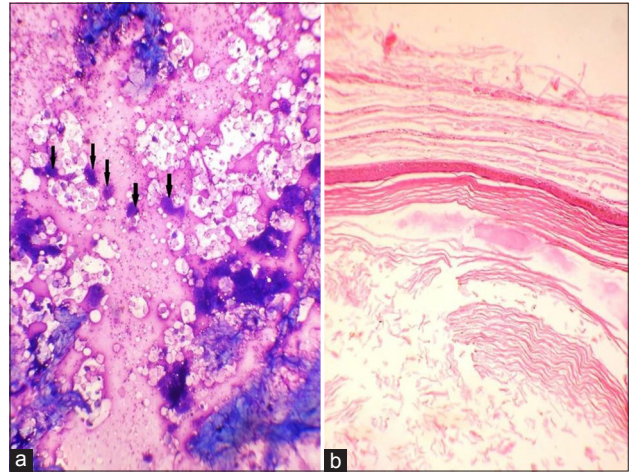


Figure 2: (a) Fine-needle aspiration cytology smears show squamous cells and foreign body giant cells (Leishman's stain, ×100, arrows). (b) Epidermoid cyst (H and E, ×400)

DISCUSSION

To the date very few reports of epidermoid cyst are published in the literature.^[4,5,8,9]

The exact pathogenic mechanism of the cyst arising in the breast is poorly understood. Few theories regarding their etiology have been postulated: (I) Damage to epidermis which gets implanted deep within the breast tissue and it can occur after trauma, reduction mammoplasty and needle biopsy. (II) Progressive cystic ectasia of the infundibulum of hair follicles. (III) Squamous metaplasia of normal columnar cells within an ecstatic duct in fibroadenoma, fibrocystic change or phyllodes tumor. (IV) Congenital inclusions along the lines of embryonic closure. Possible mechanism in our study could be cystic ectasia of the infundibulum of hair follicles or minor trauma which was unnoticed. In case 2 fibroadenoma and epidermoid cyst were separate lesions in the same breast possibly suggestive of neoplasia within the fibroadenoma. In case 3, foreign body reaction associated with epidermoid cyst suggests implantation of damaged epidermis due to unnoticed foregone trauma.

Clinically epidermoid cyst at other sites present as firm nodular protrusion from the skin. In such cases diagnosis is straight forward. But these lesions often grow deep inside the subcutaneous tissue of the breast because it has flexible fat and mammary gland tissue under the skin. Epidermoid

cyst appears as noncalcified and well-circumscribed lesions on mammography. USG show solid well circumscribed and complex mass. An onion ring appearance with alternating concentric hyper and hypo echoic rings which correspond to the multiple layers of lamellated keratin has been described in epidermoid cyst.^[3] They are often confused clinically and radiologically with benign and malignant lesions of the breast and accurate preoperative diagnosis may be difficult.^[3,4] Similar observations were made in our study.

Infection/abscesses and malignant transformation are the potential risk in epidermoid cyst. Spontaneous rupture may lead to inflammation/abscess. Malignant transformation is known to occur in epidermoid cyst and incidence range from 0.011% to 0.045% of cases.^[6,10,11]

Excision of all epidermoid cyst in the breast has been emphasized by Lam *et al.*^[4] because of the potential complications such as infection and malignant transformation.

CONCLUSION

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 FNAC is essential for

the effective management of the epidermoid cyst in the breast.

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