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RESEARCH ARTICLE

EPIDERMAL INCLUSION CYST OF THE BREAST MIMICKING FIBROADENOMA: A CYTOLOGICAL DIAGNOSIS

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ABSTRACT

Background: An epidermal inclusion cyst refers to a cyst that results 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 in head and neck region, trunk and extremities. The occurrence of EIC in breast is very rare.
Case: We report a case of large sized epidermal inclusion cyst of breast mimicking fibroadenoma in a 30 years old female.
Result: This was diagnosed as EIC on FNAC and confirmed on histopathology.
Conclusion: EIC should be considered a differential diagnosis in breast lump.

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INTRODUCTION

An epidermal inclusion cyst refers to a cyst that results from the proliferation and implantation of epidermal elements within a circumscribed space in the dermis (Handa, 2008). Such cysts can occur anywhere in the body, although they are more common in head and neck region, trunk and extremities (Gerlock, 1974 and Davis, 1997). 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 diagnosis of benign breast lesion (Lam, 2010). The occurrence of EIC in breast is very rare; to date, less than 40 cases have been reported to the best of English literature search (Fajardo, 1993). We report a case of large sized epidermal inclusion cyst of breast mimicking fibroadenoma.

Case Report

A 30 years old woman was referred to our department for FNAC of a palpable mass in her right breast with a clinical diagnosis of fibroadenoma which had increased in size over the past 3 months. Local examination revealed a 5x4.5cms lump in the lower outer quadrant of right breast. The lump appeared to be firm, well – described and without adherent to the overlying skin.

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There were no associated complaints of nipple discharge or skin changes and the patient had no history of previous surgery or infection to breast. Sonography showed a solid, hypoechoic with heterogenous internal echoes and well demarcated border. Physical and imaging examination indicated a benign nature. Therefore, we presumed a large fibroadenoma. On Fine needle aspiration, whitish needle clogging material was aspirated. Cytological examination revealed sheets of anucleate squames. The finding was consistent with an epidermal inclusion cyst. Histopathological examination revealed the cyst consisted of mature squamous epithelium and with the multiple layers of keratin, consistent with an epidermal inclusion cyst.

DISCUSSION

Epidermal inclusion cysts are common cutaneous benign inflammatory lesions, and have been found in various parts of the body that are usually located in the face, scalp, neck, and trunk. Only a few cases of epidermal cysts of the breast have been reported in the literature and most of these cases are small in size except 1 case where the reported size was 9 × 8 cm. (Taira *et al*., 2007) There is no definitive understanding of how epidermal inclusion cysts actually develop, however a few theories of their etiology have been postulated. Firstly, epidermal inclusion cysts can be congenital, arising from cell nests remaining from cells such as the embryonal mammary ridge. Secondly, they can develop from obstructed hair

follicles. (Handa *et al*., 2008) Thirdly, epidermal inclusion cysts may result from trauma, such as reduction mammoplasty or needle biopsy of the breast. These procedures may cause epidermal fragments to be implanted more deeply within the breast tissue and a concurrent stimulation of epithelial proliferation (Davies, 1997). Fourthly, pilosebaceous structures may become inflamed, leading to a cystic reaction in the dermis. This theory is typically used to explain the presence of cysts on the face, neck, and trunk. Finally, epidermal inclusion cysts may be created by squamous metaplasia of normal columnar cells within a dilated duct in the case of fibrocystic disease or in a fibroadenoma or phyllodes tumors (Chantra, 1994). Generally, the epidermal inclusion cysts that develop in the skin of the head and dorsal regions are macroscopically noted as the skin protrusions, which may be due to the firm composition of subcutaneous tissue such as bone and muscle in those regions. On the other hand, histologically flexible fat and mammary gland tissues are present under the breast skin, and this may explain why epidermal inclusion cysts that develop in the breast skin grow toward the deep subcutaneous tissue and are difficult to distinguish clinically from a mammary gland tumor (Morris, 1991). On mammography, they appear as circumscribed lesions and may have calcifications. On ultrasound, they are solid, circumscribed and complex with extension into the dermis. An onion –ring appearance with alternating concentric hyperechoic rings corresponding to multiple layers of keratin has also been described (Crystal, 2005). Although epidermal inclusion cysts are known to be benign, they may rarely have malignant potential to transform into squamous cell carcinoma (Menville, 1936). Asymptomatic stable lesions do not require treatment. However, EICs, especially palpable breast masses in women and large sized lesions that may cause discomfort physically and psychologically require surgical excision (Pandya, 2009).

Conclusion

Epidermal inclusion cyst of breast (EICB) is a rare entity and can remain under-reported because of its insignificant clinical presentation. Radiologically, it appears as solid mass lesion with well-defined borders and therefore possibility of well – defined benign or malignant lesion is difficult to exclude.

Thus, FNAC plays a significant role in the diagnosis of EICB based on the presence of a typical pultaceous aspirate and cytomorphological features.

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