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Giant Fibroadenoma having Florid Adenomyoepithelial Adenosis with Microglandular Adenosis

Lakshmi Sinha[*1], *Akhilesh Kumar Singh*[2], *Prashant Kumar Singh*[1] *and Surya Kant Nirala*[4]

[1]Department of General Surgery, All India Institute of Medical Sciences, Patna, India
[2]Department of Anesthesiology, All India Institute of Medical Sciences, Patna, India
[3]Department of Pathology, All India Institute of Medical Sciences, Patna, India

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*Corresponding author: Dr. Lakshmi Sinha, Senior resident, Department of General Surgery, AIIMS Patna, India, E-mail: dr.sannu2010@gmail.com

Abstract

Breast masses are uncommon in children and adolescent. Giant fibroadenoma account for 0.5%-2% of all fibroadenoma& (and the) exact etiology is not known. Fibroadenomas tend to grow slowly and often reach a maximum diameter of 2-3 cm in size. Among breast masses pathologic lesion such as giant fibroadenoma, phylloides tumor and virginal breast hypertrophy (juvenile macromastia) rapidly & massively increase in size over a short time. We present a case of giant fibroadenoma having florid adenomyoepithelial adenosis with focal microglandular adenosis.

Keywords: Giant fibroadenoma; Excision biopsy; Microglandular adenosis; Benign histology

Introduction

Fibroadenoma in the breast is felt as a firm, round, rubbery and mobile lesion which is not tethered to underlying structures on palpation. The swelling could also increase in size during the menstrual cycle and in pregnancy because of hormonal changes taking place in the body. The size of fibroadenoma ranges from small (1-5 cm) to giant (about 15 cm). This is not associated with axillary lymphadenopathy. Women whose tumors contained cysts, sclerosing adenosis, epithelial calcifications, or papillary apocrine changes were found to be at increased and roughly comparable, risk of invasive breast cancer. Thus, it makes sense on epidemiologic grounds, to categories these lesions together under the rubric "complex fibroadenoma." However, it is not clear that these lesions are necessarily related by a common underlying cause. The presence of atypia (either ductal or lobular) confined to a fibroadenoma does not lead to a greater risk for long-term breast carcinoma compared with fibroadenomas in general [1].

Presentation of Case

We present the case of a 17 years old female, who came to AIIMS Patna general surgery OPD having felt a lump in her left breast. On examination there was single, mobile, firm, nontender lump in the upper inner quadrant of left breast. The lump was felt to be of 7x6 cm in dimensions.

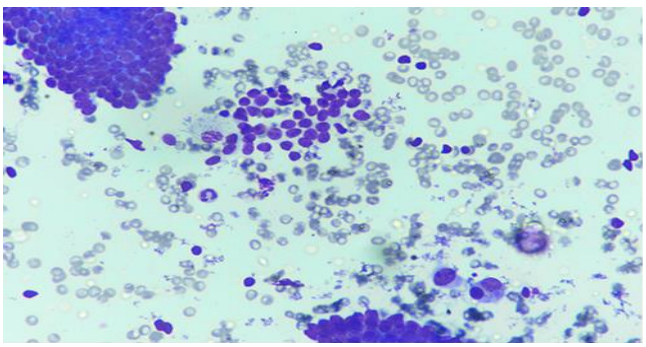

Figure 1: Fnac-Captured in 40X.

The lump was also free from underlying structures. There was no skin fixity of lump.

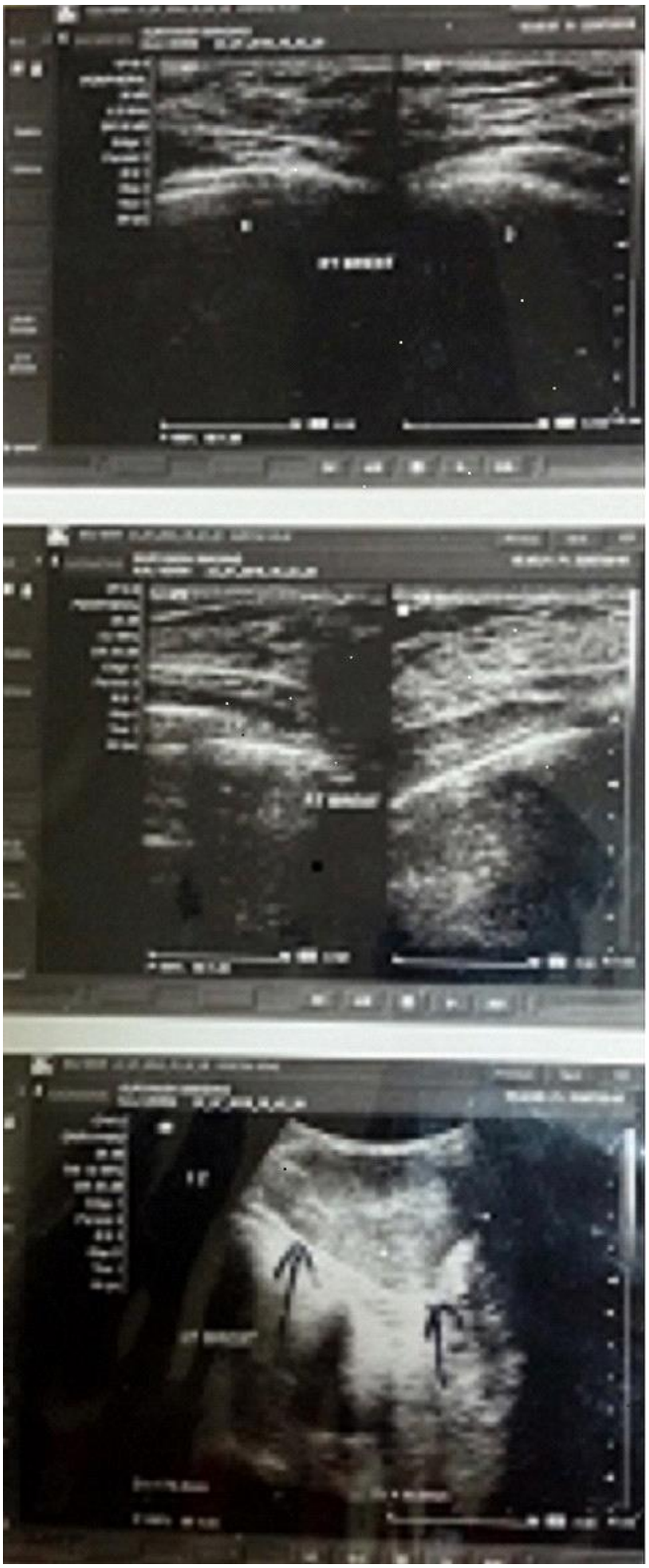

Figure 2: USG of both breasts.

Her vitals were normal at the time of admission. Her Complete blood count, bleeding time, clotting time, viral markers were within normal limits. FNAC-cytological features consistent with fibrocystic disease of left breast lump (Figure 1).

Ultra-sonography-Giant fibroadenoma in left breast causing architectural distortion (Figure 2). Her excision biopsy of left breast lump was done, and sample was sent for HPE (Figure 3). HPE shows microscopic features of florid adenomyoepithelial adenosis with focal microglandular denosis (Figure 4) Immuno-histochemistry markers-negative.

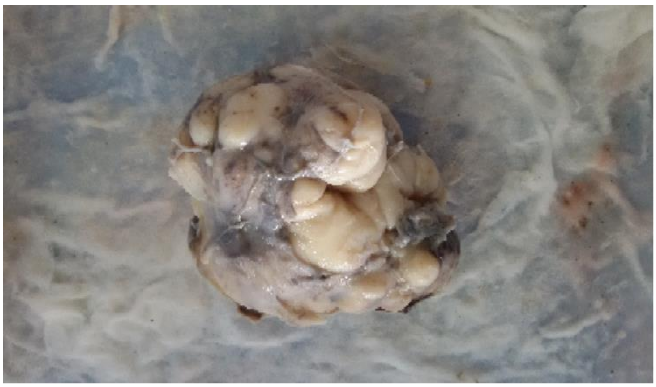

Figure 3: Gross specimen.

Figure 4: Cut section of specimen.

Discussion

Fibroadenoma of the breast is a benign tumour composed of a biphasic proliferation of both stromal and epithelial components that can be arranged in two growth patterns: pericanalicular (stromal proliferation around epithelial structures) and intracanalicular (stromal proliferation compressing the epithelial structures into clefts). Florid aenomyoepithelial

adenosis is transition to invasive carcinoma, having Immunohistochemistry profile similar to microglandular adenosis Microscopically, fibroadenoma consists of a proliferation of epithelial and mesenchymal elements. The stroma proliferates around the tubular glands (pericanalicular growth) or compressed cleft-like ducts (intracanalicular growth). Often both types of growth are seen in the same lesion [2]. Cytogenetic studies have reported chromosomal aberrations in both epithelial and stromal cells, suggesting that the two components may involve neoplastic changes [3,4]. These tumours characteristically display hypovascular stroma compared to malignant neoplasms. Furthermore, the epithelial proliferation appears in a single terminal ductal unit and describes duct-like spaces surrounded by a fibroblastic stroma. The basement membrane is intact.

Adenosis of the breast is a proliferative lesion that is characterizedby an increased number or size of glandular components, mostly involving the lobular units. Various types of adenosis have been described, of which sclerosing adenosis and microglandular adenosis merit detailed description [5]. Microglandular adenosis of the breast is characterized by a proliferation of round, small glands which are distributed irregularly within the dense fibrous/ adipose tissue of breast. Mostly glandular structures have open lumina in which eosinophilic material is usually seen. The most important histological feature of microglandular adenosis is that it lacks the outer myoepithelial layer which are seen in other types of adenosis. The lack of myoepithelial layer makes it harder to differentiate microglandular adenosis from tubular carcinoma [6,7].

Apocrine (adenomyoepithelial) adenosis, which seems to be a variant of microglandular adenosis, was first described in association with adenomyoepithelioma. This apocrine change is seen in deformed lobular units, sclerosing adenosis, radial scars, and complex sclerosing lesions. The term apocrine adenosis is used to describe a wide spectrum of apocrine lesions, and this term has been proposed only to describe apocrine changes in the specific underlying lesions [8]. It is a variant of adenosis with a prominent (at least 50%) apocrine metaplasia within the involved glands. The apocrine cells have round nuclei, prominent nucleoli, and abundant eosinophilic granular or clear cytoplasm. Mild enlargement of nuclei and slight variation in nuclear size and shape are common in apocrine metaplasia and should not lead to overdiagnosis. In contrast, significant nuclear atypia (irregular chromatin distribution, irregular nuclear membrane, threefold variation in nuclear size, etc.) should lead to the diagnosis of atypical apocrine adenosis or apocrine adenosis with atypia. Structures, which are shown by laminin or type IV collagen immunohistochemical stains, the absence of epithelial membrane antigen staining in the luminal epithelial cells distinguish microglandular adenosis from tubular carcinoma [7].

Although microglandular adenosis is considered benign, there is some evidence of the potential of this lesion to become invasive carcinoma. Microglandular adenosis also has a tendency to recur if not completely excised [9]. Carcinomas arising in micro glandular adenosis are triple negative, but not of basal phenotype. Triple negative carcinomas have a poorer prognosis [10] and the pattern of metastasis is different than the usual type of infiltrating ductal carcinoma.

Conclusion

A complete physical examination and diagnostic evaluation are needed to reassure the patient and the parents as well as to avoid missing any rare malignant lesion. Diagnosis and treatment of giant fibroadenoma is heterogeneous. The mainstay of treatment is complete excision with an emphasis on preserving the developing breast parenchyma and nipple areolar complex. The typical benign cytoarchitecture of a fibroadenomas, in a background of naked multiple nuclei indicates the benign nature of the lesion and has no known malignant potential. Correct recognition and the ability to differentiate these cells from malignant cells are dependent on a combination of conventional diagnostic pathological techniques: H&E and IHC staining using a small panel of antibodies. Awareness of this phenomenon is critical in facilitating accurate diagnosis and appropriate management of the patient. Excision biopsy is the main stay treatment in giant fibroadenoma & close follow up has to be done, as it has the potential for recurrence and malignancy.

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Conflict of Interest

The authors declare no conflict of interest.

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