Giant Male Fibroadenoma: A Rare Benign Lesion

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Abstract Fibroadenoma, the most common breast tumor in adolescent women, usually arises in the terminal duct lobular unit, but is exceedingly rare in the male breast. The usual presentation is a painless, firm, mobile, and slow-growing lump in the breast of a woman of childbearing age. Its diagnosis is usually made by clinical examination, but ultrasound, mammography, and fine-needle aspiration often help in its confirmation. We are presenting here a rare but interesting case of a large fibroadenoma, which was present in a male breast.

Keywords ANDI · Male fibroadenoma · Phyllodes tumor · Gynecomastia

Introduction

Fibroadenomas, the most common type of benign breast tumors in young women of reproductive age, develop when tissue grows over the lobule leading to a solid lump formation. It is made up of both glandular (lobular) tissue and connective (stromal) tissue, and is thought to occur due to an increased sensitivity to the female hormone estrogen. The size of fibroadenomas is usually 1–3 cm, but if it is more than 5 cm, it is called “giant fibroadenomas.” Fibroadenomas are uncommon in the male breast. Most published reports describe phyllodes tumors, gynecomastia, lipoma, and carcinoma in the male breast. We are reporting an exceptional case of a giant unilateral fibroadenoma in a

man under treatment for prostatic carcinoma Figs. 1, 2, 3, and 4.

Case History

A-72-year-old man presented with complaints of painless swelling in the left breast for past 3 years. Initially it was a small nodule of about 1.5×1.5 cm size, which gradually increased and attained the present dimensions. This patient was a chronic smoker for past 40 years and had been diagnosed as a case of prostate carcinoma for past 4 years. He underwent orchidectomy followed by antiandrogen therapy, which he had discontinued 6 months back.

On local examination, we found a single swelling of about 25×25 cm size in the left breast, with well-defined margin. The consistency of the lump was tense, elastic, and it was not fixed to the underlying structures or the overlying skin. There was a small ulcer, present over the swelling, probably due to pressure necrosis. Neither the axillary nor the supraclavicular lymph nodes were palpable. Mammography showed a large oval smooth-edged soft tissue shadow with clear defined outline and central core calcification suggestive of fibroadenoma, which was reconfirmed by fine-needle aspiration cytology. Excision of the lump was performed and specimen sent for histopathological examination. Macroscopically, the tumor presented as a white-grayish well-demarcated encapsulated nodule. Histologically, the lesion was diagnosed as a fibroadenoma. Post-operative period was uneventful and the patient was discharged. Regular follow-up did not reveal any recurrence till date.

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Fig. 1 A large swelling in the right breast

Discussion

The breast gland may undergo aberration of normal development or involution (ANDI) which gives rise to glandular and connective tissue hyperplasia, mammary dysplasia, fibroadenosis, cyst formation, and lymphocytic infiltration. The pathogenesis of ANDI is fluctuation of the estrogen level during reproductive period or menopause. In glandular hyperplasia, there are an increased number of acini with increased cells inside which form papillary projections inside the acini (adenosis, epitheliosis, and papillomatosis). The acini appear as solid masses of cells. However, in connective tissue hyperplasia, fibrous tissues will replace many epithelial elements (fibrosis). The cyst formation in the breast is usually due to either obstruction by fibrosis

with accumulation of secretions or abnormal involution of the ducts. Sometimes, one or many large cysts are formed at the premenopausal period with atrophy of the lobules of the breast with accumulation of fluid inside it, which are referred as “blue-domed cysts of Bloodgood” [1].

The fibroadenoma of the breast is a benign fibroepithelial lesion, characterized by proliferations of both glandular and stromal elements [2]. These tumors are round or ovoid, elastic, nodular with smooth surface, and mobile. They are so mobile that women sometimes refer them as “breast mice” because they tend to run away from the examining fingers. Usually the fibroadenoma is a nontender tumor, but it may become tender, especially in premenstrual period, when it may swell due to hormonal changes. The cut surface usually appears homogenous and firm, and is gray-white in color. The diagnostic findings on needle biopsy consist of abundant stromal cells, which appear as bare bipolar nuclei, throughout the aspirate—sheets of fairly uniform-sized epithelial cells which are typically arranged in either an antler-like pattern or a honeycomb pattern. Microscopic examination reveals proliferation of ductal epithelium of normal appearance. These are surrounded by fibroblastic stroma. Fibroadenomas may be subclassified into two types, intracanalicular and pericanalicular, depending on the relative amounts of epithelial and stromal tissues present. There is also a third type, known as mixed type, in which both forms coexist simultaneously. Intracanalicular fibroadenomas show predominant stromal proliferation that compresses the ducts, which are irregular and reduced to slits. Pericanalicular fibroadenomas show fibrous stromal proliferation around the ductal spaces that allow the duct spaces to remain round or oval.

Fig. 2 A soft-tissue tumor in the right breast

Fig. 3 A large fibroadenoma

In the male breast, fibroepithelial tumors are very rare, and are mostly phyllodes tumors [3, 4]. The histogeneses of fibroadenoma and phyllodes tumors of the breast appears to be closely related. Some authors have observed that monoclonal fibroadenomas can progress to phyllodes tumors. The method of clonal analysis is based on trinucleotide repeat polymorphism of the X chromosome-linked androgen receptor (AR) genes and on random inactivation of the gene by methylation [5].

There is a report of presence of fibroadenoma in the female ectopic breast [6, 7]. In a study, conducted in Jordan, the most frequent lesions in male breasts were gynecomastia (45.5 %), ductal carcinoma (18.2 %), and followed by

lipoma (12.1 %) [8]. We are reporting this unusual giant fibroadenoma in a male breast, which had attained such an enormous size, so that if a male patient comes with swelling in the breast, fibroadenoma, though a rare entity, he should be considered as a differential diagnosis.

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Fig. 4 Resected specimen