



Case Report

# Giant fibroadenoma or juvenile fibroadenoma of breast: Conservative surgery

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## Abstract

A 10 years prepubertal age girl presented with huge 17 X 14 cm painless breast lump of four months duration. Based on the cytological, imaging and clinical findings a preliminary diagnosis of benign proliferative breast lesion closest to giant fibroadenoma was offered. Giant fibroadenomas are rare in young girls and are difficult to differentiate from low grade phylloides tumor by cytology/ imaging. Giant fibroadenomas have to be differentiated from phylloides tumor by the lack of leaf-like structures and stromal cell atypia and from the breast hamartoma and asymmetric breast hypertrophy in girls by the lack of mammary lobules. Giant fibroadenoma should take its due place in the diagnostic algorithm of the breast tumors. Marginal excision with nipple areola sparing and close follow up should be the standard of treatment in young girls.

## Key words

Giant fibroadenoma, Phylloides tumor, Juvenile hypertrophy of the breast (JHB).

## Introduction

Breast fibroadenomas are the most common solid lesions found in young women. In rare occasions, fibroadenomas can show rapid and massive growth resulting in what is called giant fibroadenomas. Giant fibroadenomas are rare representing less than 4% of all fibroadenomas. They present as a rapidly growing unilateral mass which is well circumscribed. Histologically,

the tumor is composed of ducts and fibrous connective tissue and can be treated with simple enucleation [1]. Fibroadenomas are common before 30 years of age, but can occur at any age group within reproductive period of life. They are associated with mild increase in risk of subsequent breast cancer especially when they are associated with secondary changes. Juvenile or Giant fibroadenoma is a rare form which

must be recognized in terms of differential diagnosis from virginal hypertrophy in its asymmetrical early form and phylloides tumor, the prognosis of which is entirely different [2, 3, 4].

Phylloides tumors of the breast are an uncommon fibroepithelial tumor with an epithelial and a more cellular stromal component, and comprise only 1% of all breast tumors. They are sharply demarcated and typically are freely mobile. They occur in all age groups, but are uncommon in adolescents, and are more likely to occur in women over 35 years [5]. Phylloides tumor can be benign, borderline or malignant depending on histological features. About 90% of the tumors are low grade or benign, and although they rarely metastasize [6], they do tend to grow aggressively and recur locally. Recurrence is lower in the older patient. The preoperative diagnosis of this tumor becomes very important to allow correct surgical planning and avoid reoperation (wide local excision with at least 1 cm margin is currently the treatment of choice for phylloides tumor). Borderline and malignant tumors show better results with total mastectomy than breast conserving surgery [6].

This tumor is said to be under diagnosed by the pathologists and undertreated by the surgeons [7]. Fibroadenomas and phylloides tumor may have identical clinical and radiological appearance. Though age at presentation may give some diagnostic clue, it should not be overemphasized. Although the diagnosis of malignant phylloides tumor is not difficult, the diagnosis of low grade phylloides tumor and its distinction from fibroadenoma on fine needle aspiration cytology (FNAC) becomes difficult due to overlapping features between the two lesions [8].

Cytological features of phylloides tumors have been well characterized. Criteria for the diagnosis of benign phylloides tumor include at least two large stromal fragments, hyper cellular fragments and moderate to large number of dissociated stromal cells [9]. Fibroadenomas and phylloides tumors share a dimorphic pattern with both epithelial and stromal components. The distinguishing features relate to the stroma, including the presence of hyper cellular stromal fragments [10, 11], cellularity of background nuclei [12] and cellular composition and morphology of background nuclei [11, 13].

Juvenile hypertrophy of the breast (JHB) is an uncommon, benign disorder and typically occurs in peri-pubertal females. The etiology of JHB is uncertain. It may represent an end-organ hypersensitivity of the breast to normal levels of sex steroids. Clinically, it is characterized by rapid enlargement of breasts, either unilateral or bilateral. The definitive diagnosis is made by histopathological examination. Treatment recommendations include surgery and hormonal therapy, although hormonal manipulation is still controversial in pediatric patients.

### Case report

A 10 years female child presented with history of enlarged right breast since 4 months which was painless and gradually increasing to attain the size of 17 X 14 cm. On clinical examination, huge enlargement of right breast was found while the other breast was normal.

It was firm to hard, irregular mass, not fixed to the underlying structures. There was no other significant systemic illness. All hematological and biochemical investigations were within normal limits. Ultrasonography (USG) breast showed a well circumscribed, homogenous mass with non infiltrating margins in right breast. Patient was subjected to fine needle aspiration cytology (FNAC) which revealed cellular smear comprising

of clusters and sheets of epithelial cells revealing mild to moderate anisonucleosis .

Based on the cytological and clinical findings a preliminary diagnosis of benign proliferative breast lesion closest to giant fibroadenoma was offered. However, a cytological possibility of benign phylloides tumor was not ruled out. Total excision of the mass preserving the nipple and areola was done. **(Photo – 1, Photo - 2)** Post surgical histopathological examination of excised mass revealed to be giant fibroadenoma. Patient was asymptomatic for last four months and still on follow-up.

**Photo – 1:** Giant fibroadenoma.



### Discussion

Breast fibroadenomas are the most common solid lesions found in young women. They typically present as firm, mobile, painless, easily palpable breast nodules. Juvenile or Giant fibroadenoma is an uncommon pathology usually presenting in adolescents, characterized by massive and rapid enlargement of an encapsulated mass. Juvenile/ Giant Fibroadenomas can be at times difficult to distinguish from phylloides tumor (PT) and virginal hypertrophy. It is important to distinguish these two pathological entities

preoperatively as they have different therapeutic approach. The rarity of the malignant tumors of breast in adolescents does not exclude such possibility as about 2% of all primary malignant breast lesions occur under the age of 25 years in the females [14]. However, it needs a careful diagnostic and clinical approach to rule out the possibility of malignancy. The presence of large tumor size, low epithelial stromal ratio, epithelial atypical, columnar stromal cells with visible cytoplasm and stromal giant cells favors a diagnosis of PT over fibroadenomas [10].

**Photo – 2:** Nipple sparing mastectomy.



A wide variety of breast conditions such as lipoma, hamartoma, cyst, fibroadenoma, phylloides tumor, hematoma, abscess and carcinoma can result in solitary or multiple giant masses [8]. These conditions may appear similar on physical examination but their treatment varies accordingly. Giant fibroadenomas have to be differentiated from phylloides tumor by the lack of leaf-like structures and stromal cell atypia and from the breast hamartoma and asymmetric breast hypertrophy in girls by the lack of mammary lobules. Giant fibroadenoma should take its due place in the diagnostic algorithm of the breast tumors [15].



Marginal excision of the encapsulated tumor which was performed in this case is known to be the standard treatment in fibroadenomas. Clinical significance of different entities is essential as some of the lesions necessitate mastectomy but some lesions may require only local excision, aspiration or even conservative management.

## Conclusion

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Giant fibroadenoma of the breast in a young female child is the uncommon condition and a difficult diagnosis on aspiration cytology/imaging. Marginal excision of the mass preserving the nipple and areola seems to be the appropriate management in young girls, where benign nature of lump was established by FNAC. Further confirmation of the same should be advised on histopathology and follow up.

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