

## Giant Juvenile Fibroadenoma in a Young Girl- A Rarity: Case Report

Dr. Kandukuri Mahesh Kumar\*, Dr. Kishori. D, Dr. Ravikanth Soni, Dr. Divyagna. T, Dr. Swarupa Ravuri  
Malla Reddy Institute of Medical Sciences, Suraram Main Road, GHMC Quthbullapur, Jeedimetla, Hyderabad-500055,  
India

### \*Corresponding Author:

Name: Dr. Kandukuri Mahesh Kumar

Email: [doctormaheshgoud@email.com](mailto:doctormaheshgoud@email.com)

**Abstract:** Juvenile fibro adenoma comprises about 4% of the total fibro adenomas. The incidence of giant juvenile fibro adenomas is merely 0.5% of all the fibro adenomas. Bilateral giant juvenile fibro adenomas are extremely rare. Fibro adenomas in breast arise from hyperplasia of terminal duct lobular units, and usually grow up to 2-3 cm in size. Giant fibro adenoma occurs rarely in adolescence and they usually measure larger than 5 cm in diameter. Treatment usually ranges from simple excision to subcutaneous mastectomy with reconstruction of breast. We report a case of giant fibro adenoma presented as 14 x 12 cm mass in the right breast weighing about 850 grams. Patient was successfully treated by excision and reduction mammoplasty with good cosmetic outcome. We are presenting a case of giant juvenile fibro adenomas in a 15-year-old girl which was diagnosed by fine-needle aspiration cytology and confirmed on histopathology. As these tumors are mostly benign, breast-conserving surgery is done so that patient can lead a normal life without psychological trauma.

**Keywords:** Juvenile Fibro adenoma, Giant Fibro adenoma, FNAC, Adolescence

### INTRODUCTION

Fibro adenoma is the most common benign tumor of female breast which implies a new growth comprising of both fibrous and glandular tissue. Fibro adenomas are common in the age group 20- 35 years , but can occur at any age group within reproductive period of life. In rare occasions, fibro adenomas can show rapid and massive growth resulting in giant fibro adenoma. Giant fibro adenomas are defined as fibro adenomas measuring more than 5cm in diameter. Giant fibro adenomas constitute less than 4% of all fibro adenomas [1, 2]. Giant fibro adenoma may be either adult type or juvenile type [3]. Giant juvenile fibro adenoma is an uncommon tumor presenting in adolescent girl. For a variety of reasons, giant breast tumors continue to pose a challenge in diagnosis and management. These tumors are poorly understood because of their rarity and unpredictable behavior. Their rapid growth, associated with skin congestion and ulceration, and tendency to recur, gives rise to a suspicion of malignancy[1,4]. This type of clinical over diagnosis without proper use of basic investigations such as Fine needle aspiration cytology(FNAC) , ultrasonography or frozen section has led to inappropriate, and at times unnecessarily radical, surgical therapy. In the 1950s, breasts were amputated for this relatively non-threatening condition [5]. However, the present trend is towards more conservative management. In order to ensure proper surgical management, an understanding of the natural

history of the disease, appropriate use of the diagnostic tools and its biologic behavior is essential.

### CASE REPORT

A 15 year old girl came to the surgical outpatient department with complaints of swelling in the breast since three and half years. Patient's mother noticed the swelling which was of small size 3 years ago. Swelling gradually increased in size and attained present size. There was no pain in the swelling. On examination right breast is pendulous due to the weight of the swelling and there are engorged veins noted. Nipple and areola were normal. Swelling occupied almost all the quadrants of the right breast. Grossly the right breast is five to six times the size of the left breast. On palpation, the size of the swelling was approximately 15 cm, well defined swelling with appreciable margins, firm in consistency and freely mobile. No other swellings noted in the right breast, right axilla, left breast and left axilla. Patient was advised to undergo routine investigations and specific investigations which included Fine needle aspiration cytology (FNAC), Ultrasonography.

### Radiological findings

Ultrasound of the right breast shows a large isoechoic to hypoechoic homogenous mass with a thin echogenic capsule measuring 12.6 x 9.2 x 7 cm.

**Impression-** Giant Fibro adenoma- Right Breast

### Fine Needle Aspiration Cytology (FNAC)

Cytosmears show sheets, clusters and discretely placed ductal epithelial cells with few elongated myoepithelial cells, bare nuclei in the hemorrhage mixed myxoid background.(Fig 1 & 2)

**Impression** – Features Suggestive Of Fibro Adenoma-Right Breast.

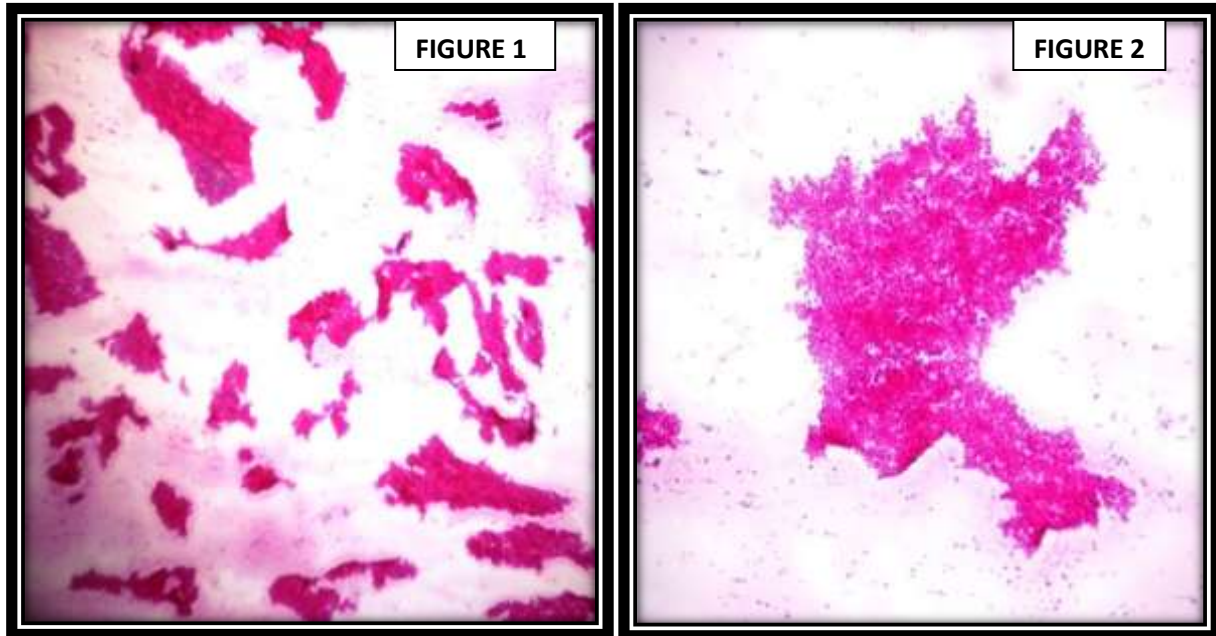


Fig-1 & 2: Photomicrographs showing sheets and clusters of ductal epithelial cells , myoepithelial cells and bare nuclei (low power and high power respectively)

### HISTOPATHOLOGY

**Gross findings** – We received a large irregular, lobulated, well circumscribed, well encapsulated gray white soft tissue mass measuring 13 x 10 x 7.5 cm,

weighing approximately 850 grams (Fig. 3). Cut section shows homogenous gray white appearance with slit like spaces. Few representative areas of the large swelling were processed for microscopic examination (Fig. 4).



Fig- 3: Photomicrograph showing well encapsulated, well circumscribed mass

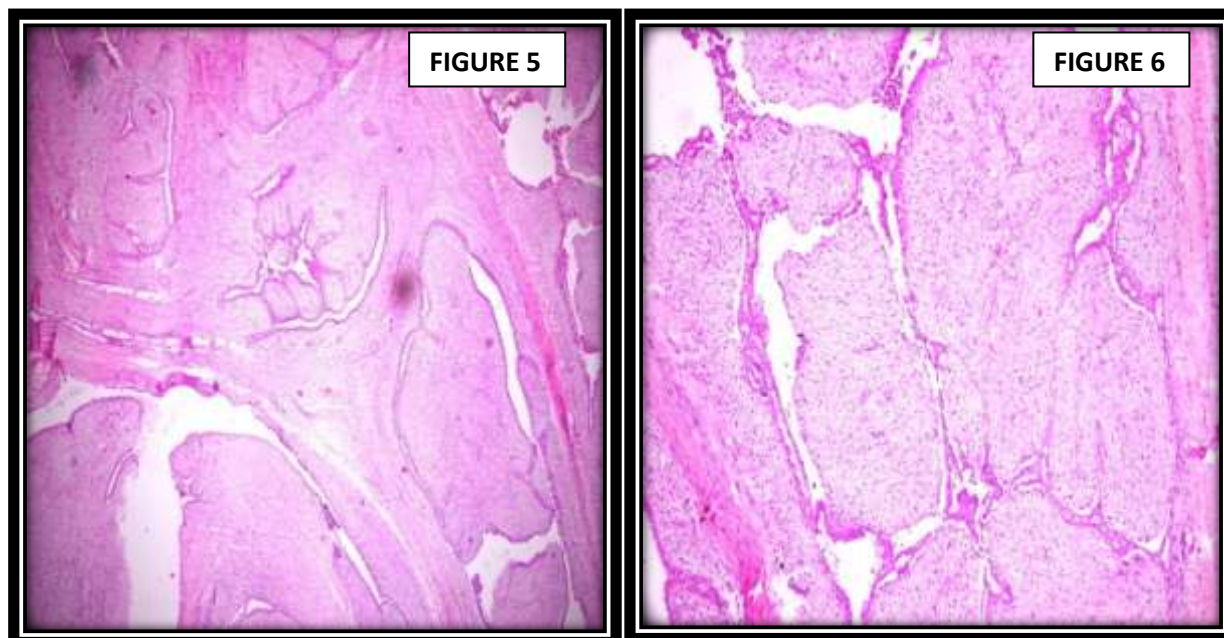
Fig- 4: Cut-section showing homogenous gray white appearance with slit like spaces.

### Microscopy

Multiple sections studied show glands and stroma. There was hyperplasia of both glands and stroma. Glands are lined by low columnar to cuboidal epithelium with outer layer showing elongated cell layer representing myo-epithelial cells. At few areas

glands are showing mild dilatations with luminal secretions. Stroma is hyper plastic and fibromyxoid (Fig 5 & 6)

**Impression** – Features are consistent with Giant Fibro adenoma –Right Breast.



**Fig-5 & 6: Photomicrographs showing benign glands and fibromyxoid stroma (Low power and High power respectively)**

### DISCUSSION

Breast fibro adenomas are the most common solid lesions found in young women. They typically present as firm, mobile, painless, easily palpable breast nodules. They occur in any part of reproductive life of female but more common before the age of 30 years. The nomenclature of fibro adenoma in younger women is confusing and a plethora of names exist to designate the lesion such as age related term juvenile fibro adenoma and size related term giant or massive fibro adenoma[6]. Giant breast tumors are rapidly growing breast masses with diameters exceeding 5 cm and/or weights of more than 500 grams [1, 7]. They can grow to immense proportions, resulting in congestion and ulceration of skin by centrifugal pressure. A wide variety of breast conditions such as phyllodes tumor, virginal hypertrophy, lipoma, hamartoma, cyst, abscess and carcinoma can result in solitary or multiple giant masses. It is important to distinguish these pathological entities preoperatively as the treatment modalities and the prognosis differ quite significantly in these various conditions. Some of the lesions were treated by mastectomy, but some other lesions may require only local excision, aspiration, or conservative management [8, 9]. These tumors are believed to be closely related variants of a similar pathologic process. They are characterized by proliferation of epithelial and

connective tissue elements in varying proportions. The exact etiology is not known. Hormonal influences are thought to be contributory factors. Excessive estrogen stimulation and/or receptor sensitivity, or lack of estrogen antagonists have been implicated in the pathogenesis. Nevertheless, the fact that these tumors are unilateral and have an apparent geographical distribution suggests that other factors, possibly genetic and environmental, could be involved. Giant fibro adenoma occurs pre-dominantly in adolescent blacks. The disease is often confined to one breast as a solitary mass occupying part or the whole breast. In rare cases, it may be multifocal and involve both breasts. The tumor is well-encapsulated and has histological features of a fibro adenoma, with a variable growth pattern of epithelial and connective tissue elements. The condition is normally benign, and the potential to grow decreases with age. Simple enucleation of the tumor is all that is required to control the disease [1, 4, 10]. Cystosarcoma phyllodes occur in the older age group, with a mean age of 40 years. They are rare in adolescents and appear to have no racial predisposition. Generally, they present as a solitary mass confined to one breast. It is rare to find bilateral breast involvement. In older patients, 5%-10% of these tumors may be malignant, but those that occur in adolescence are rarely malignant [1, 4, 11]. Benign virginal hypertrophy is usually bilateral, but on rare



occasions may occur unilaterally. Typically, there is a diffuse enlargement of breast without any associated dilated cutaneous veins. Histological differentiation between virginal hypertrophy and giant fibro adenoma is often difficult. Reduction mammoplasty is the treatment of choice, although in rare cases the disease may recur from the residual breast tissue. Cosmesis is an important consideration when making breast incisions especially in young girls and generally performed through submammary incision with the hope that scar will be hidden by pendulous breast. It is essential to know that giant juvenile fibro adenoma may recur after complete excision, and the chance of recurrence become less after third decade. Isolated case reports of unilateral juvenile fibro adenoma and multiple giant fibro adenomas in single breast were available. In the literature, only few case reports of bilateral giant fibro adenomas were reported [3, 12,13].

#### CONCLUSION

Fibro adenoma 5 cm or more in diameter is considered as giant fibro adenoma. Giant fibro adenoma is the most common cause of breast enlargement and cause asymmetry of breast in adolescent and young female. It can grow to huge proportion and compress the surrounding normal breast tissue. Basic pre-operative investigations such as fine needle aspiration cytology and ultrasonography proves truly valuable as in our case. If giant fibro adenoma is diagnosed, surgical excision is necessary with specific mammary architectural restoration and reconstruction so that patient can lead a normal life without psychological trauma.

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