



## Excision of Giant Fibroadenoma via Circumareolar Incision: A Case Report

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### Abstract

**Introduction:** Giant fibroadenomas are a variant of breast lesions that differ from ordinary fibroadenomas in their tendency to grow much larger, over 5 cm in diameter, or weighing more than 500 g. They are commonly found in teenage and young adult females and can pose challenges in terms of diagnosis and treatment due to their substantial size and rapid growth rate. Here, we report our first case of giant fibroadenoma and its management by circumareolar incision, in our center.

**Case Presentation:** A 20-year-old girl presented with a painless lump in the left breast, progressively increasing in size over six months. One paternal aunt had breast cancer at the age of 50. On examination, there was a large 10\*10cm lump in the left breast, occupying almost the whole of the left breast, which was mobile and well-defined. Ultrasound imaging was suggestive of a large soft tissue mass of mixed echogenicity. Core needle biopsy confirmed giant fibroadenoma. An excision biopsy through a circumareolar incision was performed. Histopathology confirmed Giant fibroadenoma. The patient had a smooth post-operative recovery; no hematoma or seroma was noted after 2 months of follow-up and excellent cosmesis was attained with almost no visible scar.

**Discussion:** Giant fibroadenoma is an uncommon benign tumor of the breast mostly affecting adolescents and young females. This kind of tumor is usually characterized by rapid growth, sometimes sizeable, which may cause asymmetry, pain, and pressure on the surrounding tissues. While fibroadenomas are relatively common in younger women, cases classified under the category "giant", especially those occurring in juveniles are rare and pose diagnostic and management challenges.

**Conclusion:** Giant fibroadenomas must be differentiated from phylloides tumors & malignancy through the appropriate triple assessment, which encompasses obtaining a proper history, physical examination, imaging assessment, and tissue biopsy. Surgical excision is an effective intervention and circumareolar incision is an excellent approach to assure cosmesis

**Keywords:** Giant fibroadenoma, Breast, Circumareolar incision, Excision

### Introduction

Giant fibroadenoma is quite uncommon with an incidence rate of 0.5%–2% and seen in adolescent and younger populations [1-3]. Different names refer to breast fibroadenoma lesions, including the age-related term "juvenile fibroadenoma" and the size-related term "giant fibroadenoma". Generally, Giant referred to breast fibroadenoma lesions greater than 5 cm in diameter, weighing over 500 grams, or occupying 80% of total breast volume [2-4]. Here, we present our first case of a young female with giant fibroadenoma, and the outcome of surgical management.

### Case Presentation

A 20-year-old Saudi female with no significant co-morbid conditions, presented to the general surgery outpatient clinic in our hospital complaining of a left breast painless palpable lump noticed by the patient. The lump was rapidly progressing over six months. The lump was not associated with nipple discharge or skin changes, nipple inversion, dimpling, or inflammation, and no significant gynecological complaints. On physical examination, she had breast size A and nipple ptosis grade 1 with a large left breast mass of 10 × 8 cm occupying almost the whole breast with the main bulk in the lower part of the breast. The lump was well-defined, rubbery, smooth, freely mobile, and painless with no adherence to the skin or chest wall, and no nipple retraction. There were no significant skin

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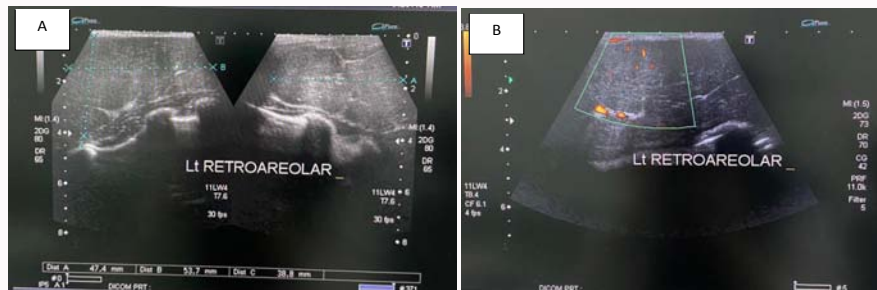
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**Figure 1:** Revealed a defined large heterogeneous isoechoic soft tissue mass lesion at the retro areolar region extending to involve all lower quadrants and partial part of UOQ. It shows mixed echogenicity within (hyperechoic linear regions, and hypoechoic) roughly about 10 × 5.3 cm (A), with significant internal vascularity (B).

changes except prominent blood vessels over the lump. There was no axillary lymphadenopathy.

The breast ultrasound (US) revealed a well-defined large, 10 × 5.3 cm, heterogeneous isoechoic soft tissue mass lesion at the retro areolar region extending to involve all lower quadrants and some part of the upper outer quadrant. It shows mixed echogenicity with significant internal vascularity. No micro- or macro-calcifications were seen. The lump was classified as BIRADS III based on Breast Imaging Reporting, Database System Score (BIRADS), with a differential diagnosis of Giant fibroadenoma, or a hamartoma (fibrolipoma).

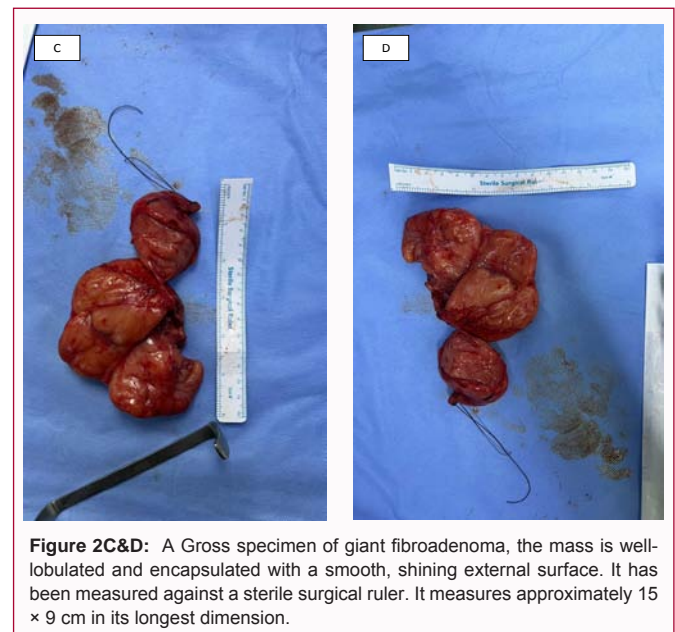
A core biopsy of the lump showed a giant fibroadenoma. The patient underwent complete excision of the lump in the left breast under general anesthesia through the circumareolar incision placed along the lower areolar margin and deepened till the mass. Mass was dissected from surrounding breast parenchyma by both blunt and sharp dissection while conserving the normal breast tissue and excised as a single piece of tissue. The excised mass measured 15 × 8 cm. The risk of hematoma was minimized by placing a 19F suction drain that produced minimal output. Layered closure of the incision was done using absorbable sutures for deep tissue and fine nonabsorbable subcuticular sutures used to approximate skin. Care was taken to maintain the position and integrity of the nipple-areolar complex.

The patient was discharged the next day and followed after ten days to remove stitches and then after 1-month and 2-month intervals as an outpatient: no wound infection, hematoma, or seroma was noticed with excellent cosmesis as the scar was almost invisible.

The histopathology revealed a lesion composed of proliferating ductulus lined by a bi-layered epithelium, with a pericanalicular growth pattern type, surrounded by spindle-shaped stromal cells with stromal myxoid change and foci of adipose tissue in the periphery. Few ductules show features of mild usual duct hyperplasia. No stromal hypercellularity or atypia nor malignancy is noted. All findings are consistent with Giant fibroadenoma.

## Discussion

Giant fibroadenoma is one of the rapidly growing masses of the breast other causes include benign lesions like lipomas, and hamartomas, as well as aggressive lesions like phyllode tumors and malignancies like spindle cell carcinoma [2,5]. These lesions can cause significant psychological and cosmetic distress due to their size and rapid growth, emphasizing the significance of prompt diagnosis and



**Figure 2C&D:** A Gross specimen of giant fibroadenoma, the mass is well-lobulated and encapsulated with a smooth, shining external surface. It has been measured against a sterile surgical ruler. It measures approximately 15 × 9 cm in its longest dimension.

intervention [6,7].

Breast US is the initial imaging modality, especially in young patients, given the dense nature of the breast tissue in this age group [7]. Also, the rapid growth in a short time demands differentiation from phyllodes tumor since the latter is quite similar to giant fibroadenoma both clinically and radiologically and yet requires a different mode of treatment due to the high recurrence rate & potential malignancy. Therefore, a core biopsy should be performed, although early benign phyllodes and giant fibroadenoma are still difficult to differentiate on core needle biopsy [2,8,9]. In our patient mass grew over 6 months. The imaging finding favored fibroadenoma with hamartoma as a differential diagnosis. A core needle biopsy confirmed a diagnosis of fibroadenoma and excluded malignant changes within the tumor.

Surgical excision is the treatment of choice for giant fibroadenoma and is aimed at the complete removal of the mass with the preservation of the aesthetic and functional integrity of the breast [10]. Various surgical incisions can be employed based on tumor size, location, and associated deformity of the breast. We approached our patient through a circumareolar incision ranging around 4-5 cm, carefully following the natural border of the areola to minimize visible scarring. As the mass was well encapsulated, careful dissection allowed specimen extraction through a smaller

incision. Circumareolar incision is considered cosmetic as its scar is well hidden in the areolar margin and it allows access to the whole breast [2]. Saw tooth technique can also be employed if extraction is difficult [2,10]. Infra mammary incision is another option for such large lump and is beneficial if breast reconstruction is needed later. However, it is not very cosmetic in young females with small, less pendulous breasts and with a high propensity to keloid formation in some ethnic groups [10]. Our patient had a very good cosmetic result with an almost invisible scar after 2 months.

The removal of a large mass, that grew in a short period, may lead to significant breast asymmetry due to volume loss, skin redundancy due to overstretching of skin, distortion of position of the nipple-areolar complex, and potential deformity due to scarring which may need reconstruction [11-15]. Breast reconstruction in such cases is crucial to restore the breast's natural contour and preserve the patient's psychological well-being [13]. The reconstruction methods range from primary closure for small defects, local tissue rearrangement by glandular flap, fat grafting, reduction mammoplasty, and mastopexy [14,15]. Collaboration with plastic surgeons is invaluable in achieving optimal outcomes. Preoperative planning with imaging can help simulate postoperative results, allowing for a tailored approach that aligns with the patient's expectations [15]. However, immediate reconstruction in young patients is also debated and is not recommended as the developing breast can compensate for minor asymmetries and aggressive reconstructive techniques can cause excessive scarring as well as jeopardize function of the breast [2].

We closed the defect primarily over a drain. The placement of a drain in such excisions is debatable as it is associated with breast scarring and deformity [2]. However, drains are used when extensive dissection or a significant dead space is anticipated. We used a drain due to the possibility of post-op hematoma as well as the presence of a large dead space after the excision of a large mass. No reconstruction was attempted. Our patient didn't develop any asymmetry as observed after 2 months of follow-up.

In general, the prognosis of giant fibroadenomas is excellent due to their benign nature. Recurrence is rare but possible, particularly in cases with persistent hormonal influences. Regular follow-up is crucial to monitor for recurrence and address potential scarring [16].

## Conclusion

Giant fibroadenomas of the breast can be distressing and pose diagnostic and management challenges. Early surgical excision is recommended. Circumareolar incisions are cosmetic and effective as the mass is usually well encapsulated and easily dissectible from surrounding breast parenchyma. The use of drains can reduce post-op hematoma. Though most cases can be managed by local tissue mobilizing and primary closure, large defects may necessitate other methods, and reconstruction can be done to achieve symmetry, natural contour, and acceptable cosmesis.

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