Case Report

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Surgery Section

Giant Fibroadenomas of the Left Breast in an Adolescent Female: A Case Report

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ABSTRACT

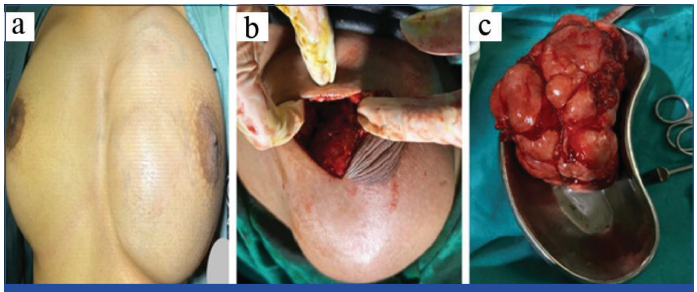
Giant fibroadenomas are rare benign lesions usually seen in juvenile to adolescent females. Present case describes an 18-year-old adolescent female presenting with multiple bilateral fibroadenomas, including giant fibroadenomas in the left breast. Diagnosis was confirmed through clinical examination, ultrasonography, and histopathological evaluation. Due to the large size of the lesions in the left breast causing breast disfigurement, surgical excision was performed in a staged manner using a periareolar incision to ensure optimal cosmetic outcomes. Postoperative recovery was uneventful, with no recurrence or complications. This case highlights the importance of a comprehensive diagnostic approach and individualised surgical management in patients with multiple and giant fibroadenomas to achieve both therapeutic and aesthetic goals.

Keywords: Complications, Breast imaging, Breast lump, Histopathology, Surgical excision

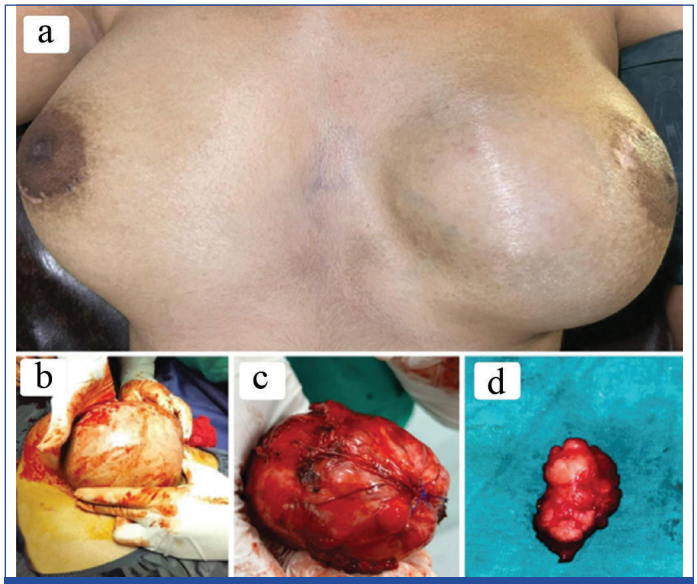
CASE REPORT

An 18-year-old adolescent, an unmarried premenopausal female, presented with complaints of bilateral breast lumps for five years, with an increase in the size of her left breast in the last few months. She had no history of trauma, pain, or any other prior breast-related issues. Clinical examination showed multiple palpable lumps in the left breast, of which two were giant in size. An ultrasound of both breasts revealed multiple well-defined, heterogeneously hypoechoic lesions with minimal internal vascularity. The largest lesion, in the upper-inner quadrant measured 11.0×3.5×9.2 cm, and another giant lesion of 10.0×6.1×9.7 cm in the lower-inner quadrant of the left breast. One smaller fibroadenoma was noted in the lower-outer quadrant of the left breast and multiple locations in the right breast. Histopathological examination by core needle biopsy from these lumps confirmed fibroadenomas in both breasts. Her endocrine profile was within normal range and had no significant family history of carcinoma of breast/ovary. Based on clinical, radiological, and histopathological findings, a definitive preoperative diagnosis of multiple bilateral fibroadenomas, including giant fibroadenomas in the left breast, was made.

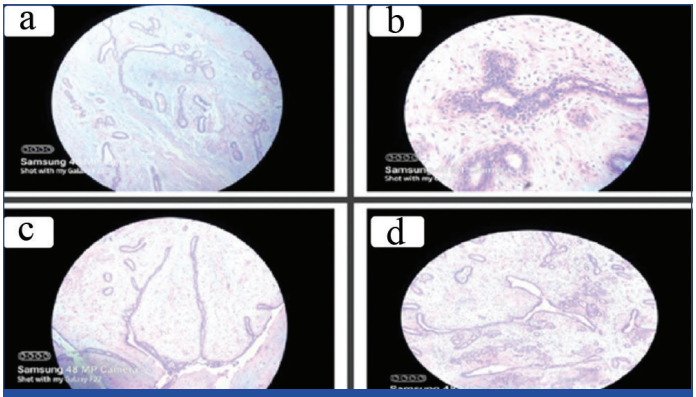
Given the size and number of the fibroadenomas, surgical excision was planned in the left breast in two stages. The first procedure involved excision of a giant fibroadenoma from the upper-inner quadrant through a periareolar incision [Table/Fig-1a-c]. Three months later, the remaining two giant fibroadenomas from the left breast lower quadrant were excised using the same surgical approach [Table/Fig-2a-d]. Histopathological examination of all excised specimens from the left breast confirmed the diagnosis of fibroadenoma. Based on specimen size measured and documented in the histopathology report, two lesions meet the clinical criteria for classification as giant fibroadenomas in the left breast [Table/Fig-3a-d]. The patient had an uneventful recovery with satisfactory wound healing and progressive regeneration in the residual cavity of the left breast [Table/Fig-4]. Continued follow-up is warranted to monitor further tissue remodelling and volume restoration. The patient was also informed about her cosmetic outcomes. In case she failed to gain sufficient size of the left breast as compared to the right and is willing for better cosmetic outcomes, she can opt for lipofilling procedure of the left breast after six months to one year. Or she can go for autologous breast reconstruction or implant-based breast reconstruction after completion of her family (gestation), regarding hormonal changes during pregnancy and lactation, which can further give changes in size and shape of her breast.



[Table/Fig-1]: a) Clinical image showing asymmetry in breast size and shape in supine position, with the left breast appearing larger than right at the time of the first surgical intervention; b) Intraoperative view of a periareolar incision extending from 9 o'clock to 1 o'clock position; c) Excised fibroadenoma from upper inner quadrant of the left breast, consistent with giant fibroadenoma morphology; estimated approximate weight 750 grams.



[Table/Fig-2]: a) Clinical image showing the left breast's size and shape in supine position during the second operative intervention, with persistent asymmetry compared to the right breast; b) Intraoperative view of second giant fibroadenoma being excised from the lower inner quadrant via a periareolar incision; c) Excised specimen of the second giant fibroadenoma of left breast, estimated to weigh approximately 500 grams; d) Additional smaller fibroadenoma excised from the lower outer quadrant of the left breast through the same incision.



[Table/Fig-3]: Histopathological sections showing features of a giant fibroadenoma with proliferative fibrous stroma lacking atypia and leaf-like projections. A mixed architectural pattern is observed across all four histology slides; a,c and d) H&E, 10x; b) H&E, 40x.

[Table/Fig-4]: a) Postoperative Day 10 (POD-10) image after the second surgery, showing a residual cavity in the left breast; b) POD-45 image in supine position, demonstrating partial restoration of breast contour; c) POD-45 image in sitting posture, clinical view shows progressive breast tissue regeneration and improved contour and volume, although the left breast remains smaller than the right.

DISCUSSION

Breast fibroadenomas are the most common benign breast tumours, primarily affecting women of reproductive age. These benign breast lesions can measure less than 3 cm while giant fibroadenoma may exceed 5 cm in diameter or weigh more than 500 g [1,2]. They might cause distress due to their size and rapid growth at times. These larger lesions are more frequently observed in adolescent females and in women during pregnancy or lactation [3]. The prevalence is highest in women aged 18-40 years (27.6%) and declines with age, with an incidence of approximately 2.2% in adolescents [4]. Due to their rapid growth, these giant fibroadenomas may cause overlying skin changes, dilated veins, ulceration, mimicking malignant breast tumours [5].

The exact aetiology of these giant fibroadenomas is not clear. Probable factors could be hypersensitivity of breast tissue to oestrogen or dietary factors. Oestrogen and progesterone drive their growth, particularly during puberty, pregnancy, and menstruation, while genetic predisposition, early menarche, and nulliparity may increase susceptibility. Heightened oestrogen sensitivity causes hyperplasia of the mammary glands and may favour the formation of carcinomas [3]. This has been verified in a study, showing 0.81% prevalence of mammary hyperplasia in females with atypical epithelial hyperplasia in fibroadenomas and 7% developed invasive carcinomas later [6]. Multiple fibroadenomas occur in 15-20% of affected individuals, typically presenting with three to four lesions per breast. However, having more than five fibroadenomas in a single patient is rare [7]. Data on cyclosporine A therapy in patients with renal transplant have shown an association with giant fibroadenoma formation [8]. Diagnosis relies on clinical examination, imaging, and histopathology. Fine-needle aspiration cytology aids in the initial assessment, but core needle biopsy or excisional biopsy remains the gold standard for confirmation, as was in the above case.

The primary differential diagnosis for giant fibroadenomas is phyllodes tumours, but they tend to grow rapidly and can be malignant. Phyllodes tumours show invasive margins with overgrowth of parenchyma, while giant fibroadenomas have well-defined margins with rare chances of mitosis [9]. Histopathology is essential for distinguishing these entities. Management of fibroadenomas varies based on size, symptoms, and patient concerns. Non palpable fibroadenomas are typically managed conservatively with reassurance, while for palpable lesions, observation with or without follow-up, Vacuum-Assisted Mammotomy (VAM), and surgical excision are available [10]. With increasing age, the risk of carcinomatous degeneration in fibroadenomas rises to 17%. In multiple fibroadenomas, only one of them may show carcinomatous changes, whereas the others may appear unremarkable. This makes complete excision of the tumour essential [11]. Complete enucleation is advised, with the preferred incisions being circumareolar or inframammary to minimise visible scarring. However, the location and size of the mass may necessitate curvilinear or semilunar incisions. High-intensity focused ultrasound and cryoablation are other treatment options but surgical excision is the standard for such giant fibroadenomas. Surgical excision is recommended for symptomatic, enlarging, or non mobile fibroadenomas, as well as juvenile and giant variants fixed to the skin or nipple, with lymphadenopathy [12].

Data from a study on 87 cases of giant juvenile fibroadenomas have been reported in the literature. Patients with giant juvenile fibroadenoma presented at a mean age of 13.92 years and usually after menarche. Juvenile fibroadenomas are usually unilateral, occurring either in the right or the left breast; the majority of them are diagnosed when they are already more than 10 cm in size, and they are most frequently treated with total lump excision [1]. Another case reported was of a 17-year-old girl, where all the 12 tumours were surgically removed through a periareolar incision. The largest excised mass measured 155×150×25 mm, while the smallest one measured 12×10×10 mm [13]. In the above-presented case, a staged excision approach was used due to the size and number of fibroadenomas. Psychological concerns regarding breast asymmetry, future lactation, and self-esteem are particularly relevant in young patients, highlighting the importance of preoperative counselling to manage expectations and ensure patient satisfaction.

CONCLUSION(S)

This case highlights the challenges of diagnosing and managing multiple and giant fibroadenomas. While conservative management is appropriate for small, asymptomatic lesions, surgical excision is preferred for large or symptomatic cases to prevent complications and ensure aesthetic outcomes. Preoperative counselling is crucial, especially for young patients, to address psychological concerns. Long-term follow-up is essential to monitor recurrence and patient satisfaction.

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