

## Case Report

# Excision of giant fibroadenoma of the right breast managed with skin-sparing mastectomy and immediate expander reconstruction: a case report

Akshay S. R. Babu<sup>1\*</sup>, Priyanka Suresh<sup>2</sup>, Ramesh Babu Chandrabhan Singh<sup>3</sup>

<sup>1</sup>Department of Trauma and Orthopaedics, King's College Hospital, King's College Hospital NHS Foundation Trust, London, United Kingdom

<sup>2</sup>Department of Medicine, Good Hope Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom

**Received:** 24 February 2026

**Accepted:** 07 April 2026

### \*Correspondence:

Ramesh Babu Chandrabhan Singh,  
E-mail: [crbsingh@yahoo.com](mailto:crbsingh@yahoo.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

Giant fibroadenomas are uncommon benign breast tumours, typically defined as lesions larger than 5 cm or 500 g or occupying most of the breast volume. They may cause marked breast asymmetry, skin distortion, and psychosocial distress, and often mimic phyllodes tumours on clinical and radiological assessment. We report the case of a 33-year-old woman presenting with a progressively enlarging right breast mass. Imaging revealed a well-circumscribed, heterogeneous lesion measuring 21×17×17 cm (estimated maximal diameter 30 cm) consistent with a giant fibroadenoma. The patient underwent complete excision via a partial skin-sparing right mastectomy, including nipple-areola complex removal, followed by immediate expander implant reconstruction. The excised specimen weighed 5.3 kg, representing one of the largest fibroadenomas reported in the literature. Histopathological analysis confirmed a complex fibroadenoma without atypia or malignancy. Postoperative recovery was uneventful, with excellent cosmetic and functional outcomes and no evidence of recurrence on follow-up. This case highlights an extreme presentation of giant fibroadenoma successfully managed with complete excision and immediate oncoplastic reconstruction. Early recognition, detailed imaging evaluation, and multidisciplinary surgical planning are essential to distinguish giant fibroadenoma from phyllodes tumour and to achieve optimal oncological safety with satisfactory aesthetic results.

**Keywords:** Giant fibroadenomas,

## INTRODUCTION

Fibroadenomas are the most common benign breast tumours in young women, composed of both stromal and epithelial components, usually present less than 3 cm.<sup>1-3</sup> They usually present as small, painless, mobile masses and are often managed conservatively. In the majority of cases, fibroadenomas demonstrate indolent behaviour and may be managed conservatively with clinical and radiological surveillance, particularly in younger patients with stable lesions. In contrast, giant fibroadenomas are rare and are typically defined as lesions exceeding 5 cm in diameter, weighing more than 500 g, and/or replacing the majority

of the breast volume.<sup>4</sup> These tumours can cause marked breast asymmetry, skin stretching, venous congestion, ulceration, and significant psychosocial distress particularly in younger patients.<sup>5</sup> Clinically and radiologically, giant fibroadenomas may closely mimic phyllodes tumours, which carry malignant potential and require wider surgical excision. The 2016 World Health Organization (WHO) classification further emphasises the importance of accurate histopathological differentiation between fibroadenomas and phyllodes tumours to guide management and prognosis.<sup>6,7</sup> Distinguishing between these entities is therefore critical for surgical planning and patient counselling. Given the diagnostic uncertainty, the

potential for rapid growth, and the significant cosmetic and psychological impact, timely recognition and multidisciplinary management of giant fibroadenomas are essential. We present an extreme case of a giant fibroadenoma with great size and weight, highlighting the diagnostic challenges and the role of coordinated oncological surgery in achieving oncological safety and optimal aesthetic outcomes.

## CASE REPORT

A 33-year-old woman presented to breast clinic after being diagnosed with right breast 10 cm proven complex fibroadenoma, 2 weeks after having had her delivery by caesarean section. This has been ongoing for 10 years prior to the first clinic. She had a huge mass occupying the lateral part of her right breast (>30 cm) with a progressively enlarging right breast over several years, associated with increasing asymmetry, discomfort, and postural strain. There was no history of trauma, nipple discharge, weight loss, or systemic symptoms. She had no significant past medical history and no family history of breast cancer.

On examination, the right breast was massively enlarged with stretched skin and prominent superficial veins. The breast was firm but mobile relative to the chest wall. The nipple-areola complex was distorted and inferiorly displaced. There was no skin ulceration. No axillary lymphadenopathy was palpable. No signs of infection or inflammatory changes, unable to breastfeed as the nipple was flattened. On clinical examination it was found to be a 30 cm mass, but one month later patient noticed increasing pain and size and was found to be a 40 cm mass.



**Figure 1: Clinical case photo.**

Right U3/4 – fan biopsies performed showed features of benign fibroepithelial lesion, B3, with differentials including a fibroadenoma (favoured) or a benign phyllodes tumour. No DCIS or invasive malignancy.

Ultrasound demonstrated a large, well-circumscribed heterogeneous mass occupying the entire right breast, with an estimated maximal dimension of approximately 30 cm.

Magnetic resonance imaging (MRI) revealed a circumscribed, heterogeneous, T2-hyperintense mass measuring 21×17×17 cm, replacing almost the entire right breast parenchyma, with imaging features consistent with a giant fibroadenoma. There was no radiological evidence of chest wall invasion or axillary nodal disease. Core biopsy demonstrated features consistent with fibroadenoma without atypia or malignancy.

Following multidisciplinary team discussion, surgical excision with immediate reconstruction was planned. Given the size of the fibroadenoma and distortion of the nipple-areola complex, an excision of the right breast fibroadenoma + implant/expander reconstruction of breast + galaflex matrix was performed. The excised specimen weighed 5.3 kg.

The immediate reconstruction was undertaken using a tissue expander and implant-based approach by the plastic surgery team to restore breast volume and contour. Histopathology confirmed a 179 mm complex fibroadenoma with no evidence of atypia or malignancy. Margins were clear.

Postoperative recovery was uneventful. At follow-up, there was no evidence of recurrence or implant-related complications. The patient reported high satisfaction with cosmetic appearance and functional outcome, including relief from discomfort and improved quality of life. At time of writing patient is currently on waiting list with plastic surgery team for removal of expander and insertion of breast implant on the right side.

## DISCUSSION

Fibroadenomas account for up to 70% of benign breast lesions in young women.<sup>3</sup> Giant fibroadenomas are rare and are thought to arise from exaggerated sensitivity of breast tissue to oestrogen and progesterone.<sup>8</sup> Rapid growth may occur during puberty, pregnancy, or with hormonal influences. A systematic review of giant juvenile fibroadenomas identified 153 patients with a mean lesion size of 11.2 cm, underscoring the unusual nature of tumours exceeding 20 cm.<sup>9</sup>

Several case reports have described large or “giant” fibroadenomas in young and older women, with dimensions often in the 10–20 cm range and weights of 1–3 kg. Super-giant or bilateral cases have also been reported, including masses surpassing 5 kg in weight or measuring over 40 cm, predominantly in juvenile cohorts. Within this context, the 5.3 kg mass in our patient ranks among the heaviest fibroadenomas reported, particularly in an adult woman.<sup>10-15</sup>

The main diagnostic challenge is differentiating giant fibroadenoma from phyllodes tumour. Both may present as large, rapidly growing, well-circumscribed breast masses, and imaging features often overlap.<sup>7</sup> Phyllodes tumours demonstrate increased stromal cellularity, atypia,

mitotic activity, and leaf-like architecture on histology and require wide local excision due to risk of recurrence and malignancy.<sup>6</sup> Although core biopsy is helpful, sampling error can occur in very large tumours, making complete excision necessary for definitive diagnosis.

Imaging plays a crucial role in characterising fibroepithelial lesions and planning treatment. Ultrasound is frequently the first-line modality, typically demonstrating a well-circumscribed, homogeneous or mildly heterogeneous hypoechoic mass, sometimes with lobulated margins. In large or equivocal lesions, MRI provides superior soft-tissue contrast and can show a circumscribed T2-hyperintense mass with internal heterogeneity, aiding in differentiation from other entities and in evaluating chest wall involvement.<sup>16</sup>

Despite these advantages, there is substantial overlap between the imaging features of giant fibroadenoma and phyllodes tumour, and purely radiological distinction may be impossible. Core needle biopsy is therefore recommended when there is diagnostic uncertainty, rapid growth, or atypical features, although even histology can sometimes be challenging in borderline lesions.<sup>2,14,15</sup>

Surgical excision is recommended for giant fibroadenomas due to diagnostic uncertainty, risk of skin compromise, functional impairment, and cosmetic deformity.

Oncoplastic approaches, including immediate reconstruction, allow restoration of breast contour while maintaining oncological safety.

Complete surgical excision is the mainstay of treatment for giant fibroadenomas, particularly when lesions are rapidly enlarging, symptomatic, or cosmetically deforming. In smaller tumours, simple enucleation via a cosmetically placed incision may suffice, with preservation of the nipple-areola complex and most breast parenchyma. For giant or super-giant lesions that replace the majority of the breast, more extensive procedures are often required, ranging from reduction-type excisions to skin-sparing or simple mastectomy.<sup>1,10</sup>

Reconstructive strategies are guided by patient age, breast size, and degree of deformity, and may include volume displacement techniques, reduction mammoplasty patterns, or implant- and expander-based reconstruction. In the systematic review of giant juvenile fibroadenomas, only 17.6% of patients underwent breast reconstruction, though immediate or delayed reconstruction was reported using implants, tissue expanders, and various reduction and mastopexy techniques. Our decision to perform immediate expander-implant reconstruction aligns with reports describing the role of oncoplastic approaches in restoring symmetry after extensive glandular resections.<sup>1,10</sup>

Giant fibroadenomas are benign, and malignant transformation is exceedingly rare, although complex

histological features may confer a slightly increased risk of developing carcinoma elsewhere in the breast. Recurrence after complete excision is uncommon but has been described, particularly in younger patients and in cases with incomplete margins or underlying predisposition. Postoperative follow-up should therefore include periodic clinical and imaging assessment, tailored to patient age, risk factors, and local protocols.<sup>1,10</sup>

## CONCLUSION

Giant fibroadenomas are uncommon benign breast tumours that can closely resemble phyllodes tumours and may result in significant breast deformity and psychosocial distress. This case illustrates an extreme presentation in an adult woman, with a 5.3 kg lesion successfully treated through complete excision and immediate implant-based reconstruction, achieving both oncological safety and excellent cosmetic results. Compared with previously reported cases, our patient is exceptional in both tumour weight and volumetric replacement of the breast, as most giant fibroadenomas are considerably smaller. Accurate differentiation from phyllodes tumours remains critical, and complete surgical excision continues to be the definitive approach for diagnosis and management. Early recognition, thorough imaging evaluation, and multidisciplinary oncoplastic planning are essential to optimise outcomes in such complex cases.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Sosin M, Pulcrano M, Feldman ED, Patel KM, Nahabedian MY, Weissler JM, et al. Giant juvenile fibroadenoma: a systematic review with diagnostic and treatment recommendations. *Gland Surg.* 2015;4(4):312-21.
2. Parmar J, Patel T, Choudhary S, Zope A, Vora M, Chaudhari N, et al. Giant fibroadenoma – radiologically simulating phyllodes tumor: a case report of unresolved diagnostic enigma. *Int J Gynecol Reprod Sci Women's Health.* 2020;3:4.
3. Kuijper A, Buerger H, Simon R, Schaefer KL, Crotty TB, Boecker W, et al. Analysis of fibroadenomas and phyllodes tumors of the breast by comparative genomic hybridization. *Genes Chromosomes Cancer.* 2001;31(2):135-41.
4. Park CA, David LR, Argenta LC. Breast asymmetry: presentation of a giant fibroadenoma. *Breast J.* 2013;19(3):310-4.
5. Rosen PP. *Rosen's breast pathology.* 4th ed. Philadelphia: Wolters Kluwer. 2017.
6. Reinfuss M, Mitus J, Duda K, Stelmach A, Ryś J, Smolak K. The treatment and prognosis of patients with phyllodes tumor of the breast: an analysis of 170 cases. *Cancer.* 1996;77(5):910-6.

7. Tan PH, Ellis IO, Allison K, Brogi E, Fox SB, Lakhani SR, et al. The 2016 WHO classification of tumours of the breast. *Histopathology.* 2016;68(2):181-98.
8. Chang DS, McGrath CM, Montague ED, Stewart JR. Giant juvenile fibroadenoma of the breast: case report and review of the literature. *Ann Plast Surg.* 2008;60(2):139-42.
9. Sosin M, Pulcrano M, Feldman ED, Patel KM, Nahabedian MY, Weissler JM, et al. Giant juvenile fibroadenoma: a systematic review with diagnostic and treatment recommendations. *Gland Surg.* 2015;4(4):312-21.
10. Makki Mohamed Al Hakkak S, Al Faham FSM, Awwady AN, Al Hakkak MS, Al Wadees AA. One of the biggest and heaviest juvenile bilateral breast fibroadenoma: a case report. *Int J Surg Case Rep.* 2020;77:338-41.
11. Jategaonkar PA. Super-giant juvenile breast fibroadenoma: world's first case. *J Coll Physicians Surg Pak.* 2018;28(3):257-8.
12. McCague A, Davis JV. Giant fibroadenoma in a 22 year old patient: case report and literature review. *Breast Dis.* 2010;31(1):49-52.
13. Zhang Y, Huang J, Zhou L, Leng Y. The largest and heaviest giant juvenile fibroadenoma of the breast in the Chinese population: a case report. *Medicine (Baltimore).* 2023;102(13):e33422.
14. Bairwa BL. Giant fibroadenoma mimicking phyllodes tumor in post-menopausal female: a case report and review of literature. *Int Surg J.* 2020;7(12):4235-7.
15. Singh SK, Gupta P, Arora R, Singla S, Mishra B, Singh K. Giant fibroadenoma with massive infarction masquerading as malignancy: a case report. *Int Cancer Conf J.* 2017;6(4):167-70.
16. Zhang M, Arjmandi FK, Porembka JH, Seiler SJ, Goudreau SH, Merchant K, et al. Imaging and management of fibroepithelial lesions of the breast: radiologic-pathologic correlation. *Radiographics.* 2023;43(11):e230051.

**Cite this article as:** Babu ASR, Suresh P, Singh RBC. Excision of giant fibroadenoma of the right breast managed with skin-sparing mastectomy and immediate expander reconstruction: a case report. *Int Surg J* 2026;13:797-800.