E-ISSN: 2708-1508
P-ISSN: 2708-1494
IJCRS 2025; 7(2): 93-96
www.casereportsofsurgery.com
Received: 03-06-2025
Accepted: 05-07-2025

Ifeanyi Enyanwuma
Department of Surgery, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State, Nigeria

Callistus Obinna Elegbua
Department of Obstetrics and Gynaecology, David Umahi Federal University of Health Sciences Uburu, Ebonyi State, Nigeria

Uche Eni
Department of Surgery, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State, Nigeria

Onyeyirichi Otuu
Department of Surgery, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State, Nigeria

Onyedikachi Nwokoro
Department of Surgery, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State, Nigeria

Chinedu Egwu
Department of Biochemistry, Alex Ekwueme Federal University Ndufu Alike, Ebonyi State, Nigeria

Corresponding Author:
Dr. Callistus Obinna Elegbua
Department of Obstetrics and Gynaecology, David Umahi Federal University of Health Sciences, P.M.B 211, Uburu, Ebonyi State, Nigeria

Inverted-t shaped reduction mammoplasty in a 20-year-old woman with giant phyllodes tumor in Abakaliki, south-east Nigeria

Ifeanyi Enyanwuma, Callistus Obinna Elegbua, Uche Eni, Onyeyirichi Otuu, Onyedikachi Nwokoro and Chinedu Egwu

DOI: https://www.doi.org/10.22271/27081494.2025.v7.i2b.208

Abstract
Phyllodes tumors are rare fibroepithelial neoplasms of the breast, accounting for less than 1% of all breast tumors. These tumors exhibit a wide histopathological spectrum—benign, borderline, and malignant—with the benign variant being the most common. Giant phyllodes tumors, defined as those exceeding 10 cm in diameter, pose significant surgical and aesthetic challenges, often leading to breast ptosis and asymmetry post-excision. Oncoplastic surgical techniques play a crucial role in addressing these challenges by combining oncologic resection with immediate breast reconstruction to achieve both complete tumor removal and optimal cosmetic outcomes.

This report presents a case of a 1.2 kg giant benign phyllodes tumor managed through complete excision followed by oncoplastic breast reconstruction using the inverted-T technique of reduction mammoplasty with an inferior dermoglandular pedicle. Preoperative planning utilized the Wise pattern markings to ensure proper nipple-areolar complex (NAC) repositioning and symmetry with the contralateral breast. A 10 cm-wide inferior pedicle was employed, incorporating the 3rd and 4th intercostal branches of the internal mammary artery to maintain adequate vascularity and preserve NAC viability despite a long pedicle.

Postoperative recovery was uneventful, with satisfactory healing, no complications, preserved NAC function, and excellent aesthetic outcome. This case underscores the importance of tailored oncoplastic approaches, particularly the inverted-T reduction technique with an inferior pedicle, in managing giant benign phyllodes tumors to ensure oncologic safety while achieving aesthetic and functional restoration.

Keywords: Giant phyllodes tumor, breast reconstruction, inverted-T reduction mammoplasty, inferior pedicle, oncoplastic surgery, nipple-areolar complex, benign breast tumor

Introduction

Phyllodes tumor is a rare neoplasm of the breast involving the connective tissue of the breast and it accounts for about 1% of all breast tumors [1]. It is a highly variable disease with pathological spectrum of benign, borderline and malignant variety with incidences of benign (60-75%) borderline (15-20%) and malignant (10-20%) [2].

Giant tumors refers to those more than 10cm in diameter and account for about 20% of all phyllodes tumors and usually associated with breast hypertrophy [3]. After excision of such giant tumors it usually results in breast ptosis and unpleasant aesthetic breast.

Oncoplastic surgery is of great importance in breast reconstruction after phyllodes tumor excision. Treatment of giant phyllodes tumor is usually technically challenging to the oncoplastic surgical team in selecting the option that produces favorable oncologic and aesthetic outcome.

Breast conserving surgery applying the technique of reduction mammoplasty in selected cases has been used to achieve good aesthetic outcome with correction of ptosis and volume reduction. This can be extended to very large ones that is previously managed by breast amputation and nipple grafting in selected cases.

This clinical report presents a case of giant benign phyllode's tumor that was excised and residual breast reduced and reconstructed using the inverted-T technique of reduction mammoplasty.

Case report

A 20 year old female patient that was referred to our facility with history of mass on the left breast of 2 years duration. The growth was slow initially in the first year, but grew fast in the last one year. It was associated with aching pain but no nipple discharge or breast skin changes. The patient was in utmost painful distress and was indoors for1 year due to psychosocial trauma. There was no family history of breast cancer, no history of use of contraceptive and she achieved menarche at the age of 13 years.

On examination, she was not pale, anicteric, afebrile but had grossly enlarged left breast extending to the groin on standing or sitting position. (Figure 1). The left breast harboured a mass measuring 25x20x15cm, ovoid and firm in consistency, non tender and no axillary lymphadenopathy. A core needle biopsy showed benign phyllodes tumor, Breast ultrasonography revealed left breast mass with fibro-glandular tissue, lobulated and well circumscribed with no invasion of skin or chest wall.

Patient was counselled on surgical procedure, purpose, outcome and possible complication of treatment and the different options of breast conserving surgery or mastectomy and she consented to the option of inverted-T technique reduction mammoplasty.

Surgical procedure

Surgery was preceeded by pre-operative baseline investigations, short overnight fast and markings were done using the wise pattern approach for inverted-T technique of reduction mammoplasty were done while patient was standing. The incisions were planned to reduce the redundant skin especially on the anterior aspect of the breast using the wise pattern approach, and moving the nipple areolar complex (NAC) to the same position as the contralateral breast. The medial and lateral pillars was 6cm in length with NAC circumference of 15cm. Under general anesthesia while patient was in supine position an incision was made on the anterior aspect of the breast, along the marked flaps, the mass was approached and removed completely encapsulated, flaps of the inverted-T technique reduction mammoplasty was raised, inferior demo glandular pedicle was raised and widened at the base medially to incorporate the 4th intercostal branches of the internal mammary artery and partly the 3rd pedicle and the width was 10cm. The inferior pedicle was de-epithelized sparing the NAC and the hypertrophied areolar was reduced in size to diameter of 4cm to correspond to the size of the contralateral areolar. The expanded breast skin was completely excised and the NAC was moved to be in the same level with the contralateral breast. Sutures were applied to hold the pedicle in place and the skin was closed over a drain. The closure was tension free and wound dressing was finally applied. The procedure was well tolerated. Brassiere was used post-operatively to keep the dressing in place.

The macroscopic appearance of the removed tumor is as shown in figure 4 as yellowish and solid encapsulated mass with lobulation and the weight was 1.2kg. Histologically, the tumor contained epithelial and stromal cells with no cellular atypia or mitosis.

Follow UP

Immediate post-operative care was observed and she was commenced on broad spectrum antibiotics and analgesics for 1 week. The inspection of reconstructed breast was performed daily checking for necrosis of the NAC which is one of the common complication of this surgery. NAC flaps were noted to be intact on the 3rd day and the drain was removed while the stiches were removed on the 7th day post-operative. Patient was followed up weekly for 3 weeks and then 2 weekly for 3 months. The symmetry of both breast were achieved in terms of position and shape and the NAC was intact. Patient was satisfied with the outcome of the surgery.

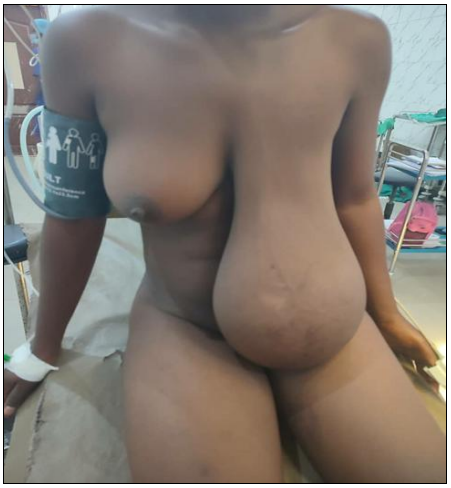

Fig 1: Left breast phyllodes tumor

Fig 2: Marking for inverted-T surgical incision

Fig 3: Immediate Postoperative breast view

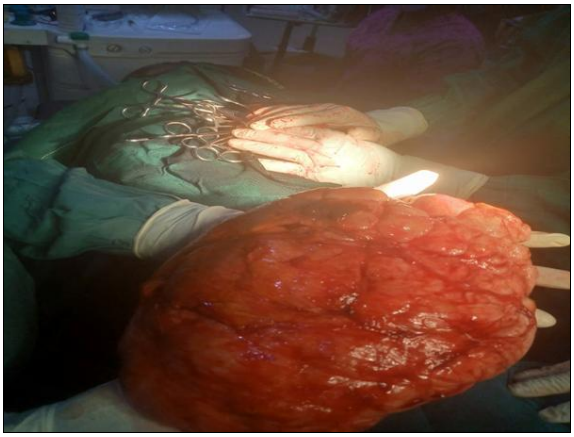

Fig 4: Gross view of excised phyllodes tumor

Fig 5: A week postoperative view (Good projection of nipple and breast)

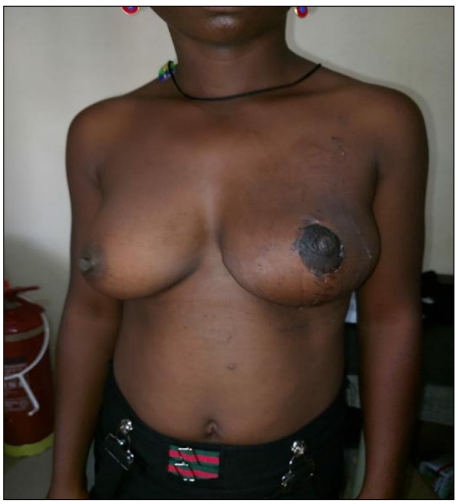

Fig 6: Six months postoperative view (Well formed breast and viable NAC)

Discussion

Phyllodes tumors are uncommon fibroepithelial neoplasm of the breast which are mostly of benign than malignant form and the benign variety is usually treated by complete excision while adjuvant chemotherapy or radiotherapy may be required for the other varieties [4]. Our patient has the benign variety hence did not receive adjuvant chemotherapy. Oncoplastic surgery has been advocated for this benign variety and it becomes more important if these tumors are big, assuming and gigantic in size [5]. In such cases tumor removal will result in ptotic breast with unpleasant aesthetic appearance and advanced breast reconstructive techniques may be needed. There are many skin excision patterns that can be chosen depending on the breast characteristics and volume. In the present case inverted-T technique was used. It was first reported by Wise *et al* and is significantly essential when there is gross deformity and asymmetry as it makes it easy to reshape the breast as well as achieving good cosmetic outcome while ensuring adequate tumor margins when a large tumor requires significant tissue removal [6].

Different breast parenchymal reduction techniques has been used like the central mound approach, superomedial pedicle, medial pedicle approaches but inferior pedicle approach has been known to be very helpful in very large pedunculated breasts as it reduces incidence of ptosis with good aesthetic results [6]. Hence Reduction technique using a combination of the inverted-T technique skin incision with inferior pedicle approach effectively tackled this challenges in our patients with large hypertrophic breast as it gave enough room for volume reduction and ptotic correction. The technique also reduces incidence of puckering of skin and formation of dog ears [6]. Reports often describe complications associated with reduction mammoplasty as minimal [7]. In our patient inverted-T skin incision technique with inferior pedicle approach was used, aesthetic outcome was good as we achieved both good volume reduction and ptotic correction and there was no dog ears. The NAC was also functional, the surgical wound healed by primary intention and there was no complications observed.

Achebe *et al* used inverted-T skin incision inferior pedicle reduction technique for giant fibroadenomas on 27 patients with good aesthetic results, good function of the NAC; average width of dermo glandular pedicle was 6- 8cm and length of pedicle bearing the NAC was 8-14cm and the study advocated wider base for longer pedicles bearing NAC [8]. The width of our inferior pedicle was10cm, we extended it more medially to incorporate the the 3rd intercostal branch for improved supply of the inferior pedicle dermo glandular flap as the pedicle was very long.

Kazuyuki and Colleagues managed a giant benign phyllodes tumor with reduction mammoplasty inverted-T technique with free nipple areolar grafting [9]. It is advocated to do amputations with free nipple areolar grafting when the inferior pedicle becomes too long because of risk of nipple areolar necrosis [9]. In our patient we had a very long pedicle. To reduce the risk in this patient we incorporated the 3th intercostal branches of the internal mammary artery by widening the base of flap medially making it 10cm which was wider than the usual width, this was to increase the blood supply to the overtly long inferior pedicle. Hence no need to be scared of nipple areolar necrosis for long flaps. Grafting the nipple areolar has problems of loss of sensation, lack of nipple projection, and breast feeding not possible hence this problems was circumvented by this maneuver as the NAC is still functional.

Conclusion

Treatment of benign giant phyllodes tumor is challenging considering the associated asymmetry and aesthetic deformity following tumor excision. The inverted-T technique inferior pedicle breast reduction approach after tumor removal is a great option in selected cases considering the ease at volume resection, good cosmetic outcome and functionality of the NAC.

References

1. Rowell MD, Perry RR, Hsiu JG, Baranco SC. Phyllodes tumors. Am J Surg. 1993;165(3):376-379.
2. Reinfuss M, Mitus J, Duda K, Stelmach A, Rys J, Smolak K. Treatment and prognosis of patients with phyllodes tumor of the breast: an analysis of 170 cases. Cancer. 1996;77(5):910-916.
3. Geisler DP, Boyle MJ, Malner KF, McGee JM, Nolen MC, Fortnes SM, *et al*. Phyllodes tumor of the breast: a review of 32 cases. Am Surg. 2000;66(4):360-366.
4. Limaei F, Kashyap S, Carver C. Phyllodes tumor of the breast: current perspectives and clinical management. [Journal name and details missing—please provide].
5. Borhani-Khomani K, Talman ML, Kroman N, *et al*. Risk of local recurrence of benign and borderline phyllodes tumors: a Danish population-based retrospective study. Ann Surg Oncol. 2016;23(5):1543-1548.
6. Wise RJ. A preliminary report on a method of planning the mammaplasty. Plast Reconstr Surg. 1956;17(5):367-375.
7. Shah R, Al-Ajam Y, Scott D, *et al*. Obesity in mammoplasty: a study of complications following breast reduction. J Plast Reconstr Aesthet Surg. 2011;64(4):508-514.
8. Achebe JU, Njeze GE, Okwesili OR. Treatment of unilateral giant fibroadenoma by breast reduction skin incision: the inverted-T technique. Niger J Clin Pract. 2014;17(1):43-46.
9. Chepla KJ, Armijo BS, Ponsky TA, *et al*. Benefit of immediate dermoglandular preserving reconstruction following giant fibroadenoma excision in two patients. J Plast Reconstr Aesthet Surg. 2011;64(2):244-247.
10. Yamamoto Y, Sugihara T. Application of reduction mammoplasty in treatment of giant breast tumor. Br J Plast Surg. 1998;51(2):109-112.
11. Kubo K, Hayashi H, Takei H, Yoshida T, Matsumoto H, Kurozumi S, *et al*. Mammoplasty using the inverted T technique following excision of giant phyllodes tumor. Int Cancer Conf J. 2013;2(4):174-177.

How to Cite This Article
Enyanwuma I, Elegbua CO, Eni U, Otuu O, Nwokoro O, Egwu C. Inverted-t shaped reduction mammoplasty in a 20-year-old woman with giant phyllodes tumor in Abakaliki, south-east Nigeria. International Journal of Case Reports in Surgery 2025; 7(2): 93-96