

## Case Report

# From challenge to change – reduction mammoplasty for a young female with benign breast growth

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## ABSTRACT

Benign papillary lesions of the breast, such as intraductal papillomas, are generally non-cancerous but can pose diagnostic and therapeutic challenges due to their atypical presentations and potential for coexistence with ductal hyperplasia. This case report describes a 20-year-old female presenting with an unusually large, progressively growing right breast mass over eight years. Clinical and histopathological evaluation confirmed a benign papillary lesion without malignancy. Given the size and associated complications, a wise-pattern reduction mammoplasty with a superomedial pedicle was performed. The patient had a smooth postoperative recovery with satisfactory aesthetic and functional outcomes. This case underscores the importance of individualized management strategies for benign breast lesions and demonstrates the efficacy of reduction mammoplasty in young patients with significant breast hypertrophy. Awareness of such rare, extensive benign presentations is crucial for timely intervention and optimal patient care.

**Keywords:** Papillary lesions of breast, Wise pattern reduction mammoplasty, Awareness, Individualized management

## INTRODUCTION

Benign breast lesions encompass a wide spectrum of pathological entities, ranging from simple cysts to proliferative epithelial abnormalities. Among these, papillary lesions particularly intraductal papillomas are relatively frequent findings, accounting for a significant proportion of benign breast diseases. These lesions originate from the epithelial lining of the breast ducts and are typically characterized by fibrovascular cores lined by epithelial and myoepithelial cells.<sup>1</sup> While they are generally non-malignant, their clinical significance lies in their potential to mimic malignancy both clinically and radiologically, especially when associated with atypical hyperplasia or occurring in a solitary central location.

In most cases, papillary lesions present with minor symptoms such as spontaneous nipple discharge, localized tenderness, or small, palpable lumps. However, in rare instances, they may manifest as large,

progressively enlarging breast masses. Such atypical presentations are particularly challenging in young patients, where the differential diagnosis includes phyllodes tumour, juvenile fibroadenomas, and even malignancies. The psychological impact, cosmetic deformity, and functional impairment caused by massive benign breast growths can significantly affect quality of life, especially in adolescents and young adults.<sup>3</sup>

Accurate diagnosis requires a combination of clinical assessment, imaging studies, and histopathological evaluation. Ultrasonography and mammography can provide preliminary insights, but tissue diagnosis through core needle biopsy remains the gold standard.<sup>2</sup> Once malignancy is ruled out, management is tailored based on the lesion's size, growth potential, and the patient's symptoms and preferences.

Surgical intervention, particularly reduction mammoplasty, becomes necessary in cases of large or

symptomatic benign tumours. Among the available techniques, Wise-pattern reduction mammoplasty with a superomedial pedicle offers multiple advantages, including effective tissue excision, preservation of nipple-areolar complex vascularity, and aesthetically favourable outcomes.<sup>6</sup> Though traditionally employed for macromastia, this technique is increasingly being adapted for tumour-related breast volume reduction.

Here, we present a unique case of a 20-year-old female with a giant benign papillary lesion of the breast, managed successfully with a Wise-pattern reduction mammoplasty. This report highlights the importance of early recognition of unusual presentations of benign lesions, the role of reduction mammoplasty in therapeutic and reconstructive management, and the need for a multidisciplinary, patient-centred approach in young women with complex breast pathology.

## CASE REPORT

A 20-year-old female, resident of Nagpur, presented to the general surgery outpatient department with a primary complaint of progressive right breast enlargement over the past eight years. The patient first noticed a small swelling in the right breast at the age of 12, initially measuring approximately 4×6 cm. The swelling gradually and continuously increased in size without associated pain or systemic symptoms, eventually reaching an approximate size of 25×15 cm at the time of presentation.

She reported increasing discomfort due to the weight and size of the breast. There was no history of nipple discharge, fever, trauma, or family history of breast malignancy.

On physical examination, the right breast was markedly enlarged, with a firm but non-tender lump measuring approximately 25×15 cm. The mass occupied all four quadrants of the right breast and exhibited well-defined margins with a smooth surface. The overlying skin showed signs of chronic stretching, including visible dilated superficial veins and an area of ulceration at the most dependent part of the breast. No axillary lymphadenopathy was appreciated, and the left breast was normal on examination.

Preoperative imaging, including breast ultrasound and mammography, supported a benign aetiology. A core needle biopsy was performed, and histopathological examination revealed collagenous stromal tissue with scattered benign ducts, with no evidence of malignancy or atypia.

Based on the clinical, radiological, and pathological findings, a diagnosis of a benign but significantly large breast lesion most likely a giant intraductal papilloma or related benign papillary lesion was made. Given the extent of hypertrophy, associated skin changes, and

psychosocial impact, surgical management via reduction mammoplasty was planned.

## Management

The patient was scheduled for surgical excision and breast volume reduction using the Wise-pattern reduction mammoplasty technique, selected for its reliability, aesthetic outcome, and suitability for large-volume resections.

Under general anaesthesia, preoperative markings were made in the standing position using the Wise pattern, also known as the inverted-T or anchor incision technique. The Pitanguy point was identified to mark the new position of the nipple-areolar complex (NAC), serving as the apex of the skin excision pattern. Medial and lateral limbs were each marked between 7 to 11 cm, based on preoperative breast measurements and the extent of hypertrophy. These measurements helped determine the post-reduction breast size and shape.



**Figure 1: Preoperative photo at time of presentation.**



**Figure 2: Preop photo with visible ulceration.**

A superomedial pedicle was planned to preserve the vascularity and innervation of the NAC. After sterile preparation and draping, incisions were made according to the Wise-pattern markings. The superomedial subdermal pedicle was carefully raised, maintaining

adequate tissue thickness to ensure robust blood supply to the NAC.



**Figure 3: Wise pattern with medial and lateral limbs.**



**Figure 4: Marking the incision and Pitanguy point marked.**



**Figure 5: Encapsulated lump dissected out.**

An inframammary incision was deepened to access the underlying mass. The encapsulated breast lump was meticulously dissected and excised in toto. Intraoperative findings confirmed a well-defined, soft-to-firm mass consistent with a benign lesion. Haemostasis was thoroughly achieved and confirmed before proceeding to closure.

The lower pole was approximated and closed in layers. The NAC was transposed to its new position based on the preoperative Pitanguy point marking. A closed suction drain was placed in the surgical site to prevent seroma or hematoma formation. The skin was closed using subcuticular and interrupted sutures to optimize wound healing and minimize scarring.

The patient tolerated the procedure well, with no intraoperative complications. Specimen was sent for histopathological examination.



**Figure 6: Specimen.**



**Figure 7: Immediate postop photo.**



**Figure 8: POD 10 photo after suture removal.**

The patient made a quick and smooth recovery, orally allowed on POD 1 and discharged on POD10 after removal of sutures. Upon 2 monthly follow up, there is no evidence of recurrence of lump.

Post op HPE was suggestive of benign papillary lesion with usual ductal hyperplasia.

## DISCUSSION

Benign breast lesions are common across all age groups, but their presentation can vary significantly. Among them, papillary lesions, including intraductal papillomas, present unique diagnostic and therapeutic challenges due to their varied clinical manifestations and potential association with atypical ductal hyperplasia or malignancy. Although generally small and asymptomatic, they may rarely manifest as large, progressively growing masses, as seen in this case—a rare occurrence, especially in young females.<sup>1,2</sup>

The differential diagnosis of a large benign breast mass in an adolescent or young adult includes juvenile fibroadenoma, phyllodes tumour, and pseudo angiomatous stromal hyperplasia (PASH).

Juvenile fibroadenomas typically present as rapidly growing, unilateral breast masses in adolescents and account for up to 4% of all fibroadenomas.<sup>3</sup> Phyllodes tumours, while also benign in many cases, can be locally aggressive and require wide local excision to reduce recurrence risk.<sup>4</sup> Accurate diagnosis thus relies heavily on histopathological examination, which in this patient confirmed a benign papillary lesion with usual ductal hyperplasia and no atypia.

Management in such cases should be holistic, addressing oncological safety, cosmetic outcome, and psychosocial impact. Large excisional biopsies or lumpectomies may lead to contour deformities and asymmetry, particularly in younger women with dense breast tissue. Thus, a therapeutic breast reduction, particularly using the Wise-pattern reduction mammoplasty, serves the dual purpose of complete excision and aesthetic reconstruction.<sup>5</sup>

The Wise pattern, also known as the inverted-T technique, enables significant reduction of breast volume while providing the surgeon with excellent access for tumour excision and reshaping. When combined with a superomedial pedicle, it ensures reliable vascularity and innervation of the NAC and maintains upper pole fullness.<sup>6,7</sup> This makes it a preferred choice for young patients with large reductions or tumours involving the lower breast quadrants.

Our patient underwent successful tumour excision and reshaping using this method, with good postoperative outcomes. Her recovery was uneventful, and she reported satisfaction with both the cosmetic and functional results. Postoperative follow-up showed no recurrence, further supporting the effectiveness of this technique in achieving durable and safe outcomes in large benign breast lesions.

This case reinforces several key clinical principles: timely evaluation of progressive breast enlargement is essential to prevent physical and psychosocial complications, histopathological analysis remains the gold standard for differentiating benign from malignant lesions, and Wise-pattern reduction mammoplasty offers a reliable, aesthetically acceptable solution for large breast lesions, especially when combined with pedicle-based techniques tailored to the individual patient's anatomy and goals.<sup>8</sup>

Although typically reserved for macromastia, reduction mammoplasty should be more widely recognized for its role in managing large benign breast tumours in young women, offering both therapeutic and cosmetic benefit.

## CONCLUSION

Benign breast lesions are frequently encountered in surgical practice, but their presentation as a massive, unilateral breast mass in a young female is rare and diagnostically challenging.

This case underscores the importance of a comprehensive clinical, radiological, and histopathological approach in evaluating breast masses to differentiate benign from malignant or borderline pathologies.

The use of Wise-pattern reduction mammoplasty with a superomedial pedicle in this patient not only allowed complete excision of the large benign lesion but also facilitated aesthetically favourable breast contouring and preservation of nipple-areolar complex viability. The approach proved to be a safe, effective, and reproducible technique, even in the context of significant breast hypertrophy in a young patient. Moreover, it addressed both the physical and psychological burden associated with long-standing breast asymmetry and deformity.

This case reinforces the evolving role of reduction mammoplasty not just as a cosmetic or functional

intervention for macromastia, but also as a reconstructive strategy in the management of large benign breast tumours. Early recognition and individualized surgical planning are essential to optimizing outcomes, preserving breast aesthetics, and ensuring long-term patient satisfaction. Further studies and case series could help establish more defined guidelines for managing such rare presentations in the adolescent and young adult population.

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