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ESTABLISHING RECONSTRUCTIVE SURGICAL CAPACITY AT THE COUNTY LEVEL: RIGHT PEDICLED LATISSIMUS DORSI FLAP RECONSTRUCTION FOLLOWING MASTECTOMY FOR MALIGNANT PHYLLODES TUMOR: CASE REPORT

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SUMMARY

Phyllodes tumors are uncommon fibroepithelial breast tumors that account for less than 1% of all breast neoplasms. Malignant variants demonstrate aggressive biological behavior with a propensity for rapid growth and local recurrence. Surgical excision with adequate margins remains the primary treatment modality. In cases requiring mastectomy, reconstruction plays a vital role in restoring chest wall integrity and improving patient quality of life. The pedicled latissimus dorsi (LD) flap remains one of the most dependable reconstructive options due to its robust vascularity and technical reliability.

We present the case of a 32-year-old female with recurrent right breast mass following a prior lumpectomy. Initial diagnostic investigations including core needle biopsy and fine needle aspiration cytology were inconclusive. An excisional biopsy subsequently confirmed malignant phyllodes tumor. The patient underwent a right modified radical mastectomy, leaving a large chest wall defect. Following confirmation of negative surgical margins, reconstruction was performed using a pedicled right latissimus dorsi musculocutaneous flap. The flap was harvested with a 35 × 10 cm skin paddle and transposed to the anterior chest wall through a subcutaneous tunnel. Postoperative recovery was uneventful with excellent flap viability observed on day three. The patient was discharged on postoperative day seven and demonstrated satisfactory healing at both donor and recipient sites at three weeks follow-up.

In conclusion, this case demonstrates the feasibility of performing complex reconstructive procedures such as pedicled latissimus dorsi flap reconstruction at a county referral hospital. Expanding reconstructive surgical capacity beyond tertiary centers is essential to improving access to comprehensive oncologic and reconstructive care in resource-limited settings.

Keywords: Malignant phyllodes tumor, breast reconstruction, latissimus dorsi flap, post-mastectomy reconstruction, surgical capacity building

INTRODUCTION

Phyllodes tumors are rare fibroepithelial neoplasms characterized by proliferation of both stromal and epithelial components. They represent less than 1%

of all breast tumors and are histologically categorized into benign, borderline, and malignant subtypes based on stromal cellularity, atypia, mitotic activity, and tumor margins. Malignant phyllodes tumors account for approximately 10–30% of cases and

are associated with higher risks of recurrence and metastatic potential(1).

Diagnosis of phyllodes tumors remains challenging because clinical and radiologic findings often overlap with fibroadenomas. Core needle biopsy and fine needle aspiration cytology may fail to provide definitive diagnosis due to sampling limitations and histological heterogeneity. Consequently, excisional biopsy frequently becomes necessary for accurate diagnosis(1,2).

The cornerstone of treatment for malignant phyllodes tumors is complete surgical excision with adequate margins. In cases involving large tumors or recurrent disease, mastectomy may be required to achieve oncological clearance(3,4).

Following mastectomy, reconstruction plays a critical role in restoring chest wall coverage, improving aesthetic outcomes, and enhancing psychological well-being. The pedicled latissimus dorsi flap has long been regarded as a workhorse flap in reconstructive surgery due to its reliable vascular anatomy, versatility, and relative technical simplicity(2,3)

In many low- and middle-income countries, reconstructive services remain concentrated in tertiary referral centers, leaving large populations without access to advanced reconstructive care. Decentralization of reconstructive surgical services to county-level hospitals has the potential to significantly improve access to care.

We present a case of successful post-mastectomy reconstruction using a pedicled latissimus dorsi flap performed at a County Referral Hospital, illustrating the feasibility of establishing reconstructive surgical capacity at a county referral facility.

CASE PRESENTATION

A 32-year-old female presented with recurrence of a right breast mass following a previous lumpectomy performed at another institution. The patient reported gradual enlargement of the mass over several months.

Initial diagnostic investigations included core needle biopsy and fine needle aspiration cytology; however, both investigations yielded inconclusive results. Given the persistent clinical suspicion, an excisional biopsy was performed. Histopathological examination confirmed a malignant phyllodes tumor.

A right modified radical mastectomy was performed by the general surgical team on 27 January 2026. Following tumor excision, a large chest wall defect remained. The wound was temporarily managed with dressings while awaiting final histopathological confirmation of margin status.

Figure 1: Post-mastectomy chest wall defect before reconstruction.



Histology results became available after seven days and confirmed negative surgical margins. The patient was therefore scheduled for reconstructive surgery.

SURGICAL TECHNIQUE

Preoperative planning included reverse reconstructive planning with the patient in the standing position to determine optimal flap design and skin paddle placement. Under general anesthesia, the patient was positioned in the left lateral decubitus position with the right upper limb suspended on a stirrup to allow access to the donor site.

A horizontal elliptical incision was made over the latissimus dorsi muscle, incorporating a skin paddle measuring approximately 35 × 10 cm. Skin flaps were elevated circumferentially to expose the underlying latissimus dorsi muscle.

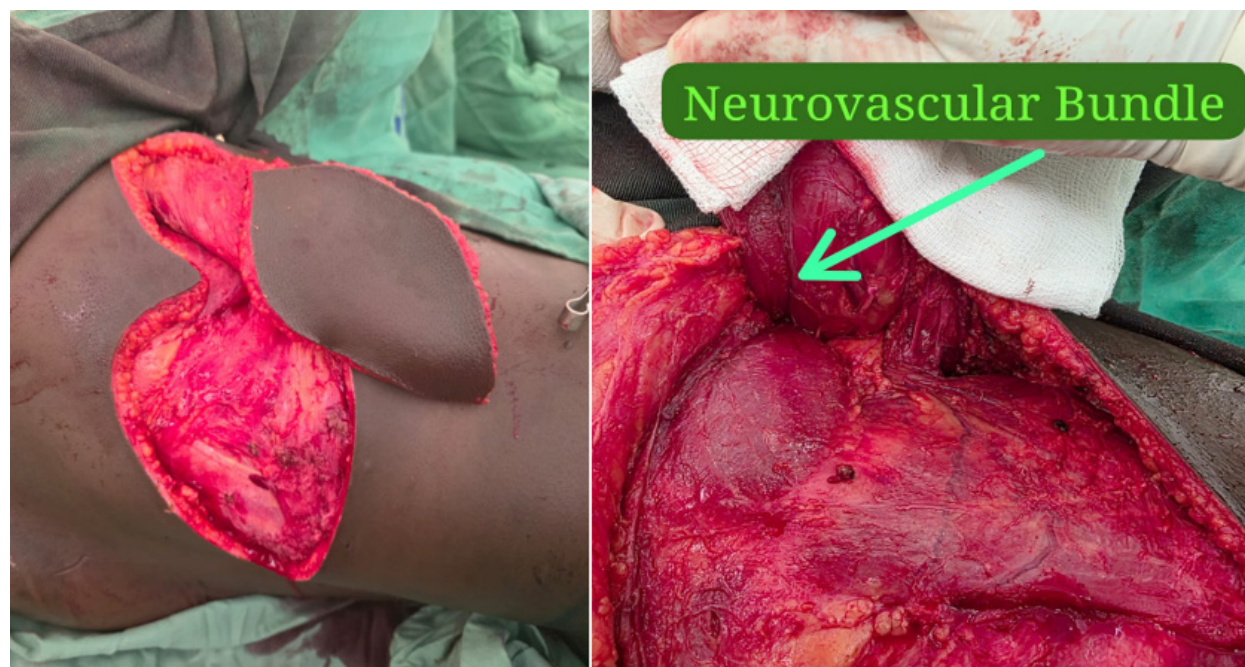
Figure 2: Preoperative preparation demonstrating flap design, patient marking, and intraoperative positioning.



Dissection was initiated along the anterior border of the muscle. The muscle was elevated carefully while preserving the thoracodorsal vascular pedicle. The flap was raised until the thoracodorsal neurovascular bundle was clearly identified. The thoracodorsal

nerve was transected to prevent postoperative muscle animation. The musculocutaneous flap was then tunneled through an adequately made tunnel to the anterior chest wall and inset into the mastectomy defect. Layered closure was done.

Figure 3: Intraoperative flap dissection



Two closed suction drains were placed: one at the donor site and one at the recipient site. The wounds were dressed and the patient was extubated successfully.

RESULTS

The postoperative course was uneventful. Flap viability was closely monitored, and by postoperative

day three the flap demonstrated excellent perfusion with no evidence of venous congestion or ischemia. The drain at the recipient site was removed on postoperative day five, and the patient remained clinically stable throughout the early postoperative period. She was subsequently discharged home on postoperative day seven.

Figure 4: Postoperative day three showing viable latissimus dorsi flap with satisfactory perfusion.



The donor site staples were removed on postoperative day fourteen, while the donor site drain was removed on postoperative day twenty-one. At the three-week follow-up visit, both the donor and recipient sites had healed satisfactorily with good wound integrity and acceptable aesthetic contour of the reconstructed chest wall. The patient expressed satisfaction with the overall reconstructive outcome.

Future reconstructive options, including breast symmetrization using implants, autologous fat grafting, contralateral breast reduction, and nipple-areola complex reconstruction, were discussed with the patient. However, she opted to defer additional procedures until full recovery from the current surgery. She reported mild right upper limb weakness and minimal swelling, which were explained as recognized postoperative sequelae associated with latissimus dorsi flap harvest.

Figure 5: Three-week postoperative outcome demonstrating satisfactory healing of both donor and recipient sites.



DISCUSSION

Malignant phyllodes tumors present unique diagnostic and therapeutic challenges. Their rarity, combined with histological overlap with fibroadenomas, contributes to frequent diagnostic uncertainty. Even with modern imaging and biopsy techniques, accurate preoperative diagnosis remains difficult in many cases(1,5).

The roles of adjuvant radiotherapy and chemotherapy in malignant phyllodes tumors remain less clearly defined. Radiotherapy may be considered in selected high-risk cases, particularly in patients with large tumors, close or positive margins, or recurrent disease, where it may help reduce the risk of local recurrence. However, a clear survival benefit has not been consistently demonstrated(6).

In contrast, systemic chemotherapy has a limited role because these tumors generally show poor responsiveness to conventional chemotherapeutic agents. Consequently, chemotherapy is not routinely recommended after complete surgical resection but may be considered in metastatic or unresectable disease, often using regimens similar to those used for soft-tissue sarcomas(6).

Complete surgical excision with adequate margins remains the most important determinant of local disease control. While breast-conserving surgery may be feasible for smaller tumors, larger or recurrent tumors often necessitate mastectomy to achieve oncologic clearance.

Post-mastectomy reconstruction is increasingly recognized as an integral component of comprehensive breast cancer care. Reconstruction provides psychological benefits, improves body image, and enhances overall quality of life(3,4).

The pedicled latissimus dorsi flap remains one of the most reliable options for breast reconstruction. The flap is based on the thoracodorsal vascular system, which provides consistent and robust perfusion(7). The versatility of the flap allows it to be used for a wide range of reconstructive indications, including chest wall reconstruction following oncologic resection.

Large institutional studies have demonstrated favorable outcomes and low complication rates with the latissimus dorsi flap(8). In addition to its reliability, the technique does not require microsurgical expertise or specialized equipment, making it particularly valuable in resource-limited settings.

In many low- and middle-income countries, reconstructive surgery services remain heavily centralized within tertiary hospitals. Patients living in rural or semi-urban regions often face significant

barriers to accessing reconstructive care, including travel distance, financial limitations, and prolonged waiting times.

Decentralizing reconstructive surgery services to county-level hospitals represents an important step toward addressing these disparities. With appropriate training and institutional support, complex reconstructive procedures can be safely performed outside tertiary centers.

This case represents the first pedicled latissimus dorsi flap reconstruction performed at Kajiado County Referral Hospital following the return of a trained plastic surgeon after specialist training. It illustrates how strategic deployment of trained specialists to county facilities can expand access to reconstructive surgery.

Beyond the immediate clinical success, this case highlights the broader potential of capacity building in plastic and reconstructive surgery at decentralized healthcare facilities. Establishing reconstructive services at county hospitals can significantly improve patient access, reduce delays in treatment, and strengthen the overall healthcare system.

CONCLUSION

Malignant phyllodes tumors, although rare, may necessitate extensive surgical excision to achieve adequate oncologic margins. Such procedures can result in large chest wall defects that require reconstructive intervention to restore tissue coverage, maintain chest wall integrity, and improve aesthetic outcomes.

The pedicled latissimus dorsi flap remains a dependable and versatile option for reconstruction of post-mastectomy defects. Its consistent vascular anatomy, technical reliability, and reproducible outcomes have established it as a workhorse flap in reconstructive surgery, particularly in settings where microsurgical resources may be limited.

This case demonstrates that complex reconstructive procedures can be successfully performed at county referral hospitals when appropriate surgical expertise is available. Strengthening reconstructive surgical capacity at county-level facilities has the potential to expand access to comprehensive oncologic and reconstructive care, reduce referral burdens on tertiary centers, and improve patient outcomes in resource-limited healthcare systems. Continued investment in specialist training, infrastructure, and institutional support will be essential to advancing equitable access to reconstructive surgical services.

ETHICAL CONSIDERATIONS

Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying clinical images.

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