pISSN:2355-7583 | eISSN:2549-4864
http://ejurnalmalahayati.ac.id/index.php/kesehatan

REVITALIZING FEMININITY: SUCCESSFUL LATISSIMUS DORSI FLAP RECONSTRUCTION FOLLOWING BREAST CANCER MASTECTOMY : A CASE REPORT

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Abstract: Revitalizing Femininity: Successful Latissimus Dorsi Flap Reconstruction Following Breast Cancer Mastectomy - A Case Report. *Breast cancer remains the leading cause of cancer-related deaths among women worldwide. Mastectomy, while often necessary, can profoundly impact a woman's sense of femininity and self-image. Latissimus dorsi (LD) flap reconstruction has emerged as a reliable technique for breast reconstruction following mastectomy, providing both functional and aesthetic benefits. A 44-year-old female presented with a gradually enlarging right breast lump present for two years. Physical examination revealed a 5×5×5 cm reddish mass with indistinct borders. Histopathology confirmed grade 3 infiltrating ductal carcinoma (luminal B-like, HER-2 positive). Bone survey showed multiple lytic lesions on os calvaria, suggesting metastasis. The patient was diagnosed with stage T4bN1M1 right breast cancer. Following six cycles of chemotherapy, she underwent right modified radical mastectomy with immediate LD flap reconstruction. The procedure involved designing the LD flap to match the required size, making appropriate incisions, elevating the muscle while controlling bleeding, creating a lateral tunnel for flap passage, and placing vacuum drains at both donor and recipient sites. The procedure was completed without complications. The LD flap demonstrated excellent versatility and adaptability in addressing the breast defect. Meticulous surgical planning and execution contributed significantly to the successful outcome. The procedure effectively restored breast contour and symmetry while positively influencing the patient's psychological recovery. Immediate LD flap reconstruction following mastectomy offers a reliable, safe approach that addresses both physical and psychological aspects of breast cancer treatment, ultimately revitalizing femininity and improving quality of life for mastectomy patients.*
Keywords: *Breast cancer, Mastectomy, Latissimus Dorsi Flap.*

Abstrak: Merevitalisasi Feminitas: Rekonstruksi Flap Latissimus Dorsi yang Sukses Setelah Mastektomi Kanker Payudara : Laporan Kasus. Kanker payudara tetap menjadi penyebab utama kematian terkait kanker di kalangan wanita di seluruh dunia. Mastektomi, meskipun sering kali diperlukan, dapat berdampak besar pada feminitas dan citra diri wanita. Rekonstruksi flap latissimus dorsi (LD) telah muncul sebagai teknik yang andal untuk rekonstruksi payudara setelah mastektomi, yang memberikan manfaat fungsional dan estetika. Seorang wanita berusia 44 tahun datang dengan benjolan payudara kanan yang membesar secara bertahap selama dua tahun. Pemeriksaan fisik menunjukkan massa kemerahan berukuran 5x5x5 cm dengan batas yang tidak jelas. Histopatologi mengonfirmasi karsinoma duktal infiltrasi tingkat 3 (mirip B lumen, HER-2 positif). *Bone Survey* menunjukkan beberapa lesi litik pada os calvaria, yang menunjukkan metastasis. Pasien didiagnosis dengan kanker payudara kanan stadium T4bN1M1. Setelah enam

siklus kemoterapi, ia menjalani mastektomi radikal kanan yang dimodifikasi dengan rekonstruksi flap LD segera. Prosedur ini melibatkan rekonstruksi flap LD agar sesuai dengan ukuran yang dibutuhkan, membuat insisi yang sesuai, mengangkat otot sambil mengendalikan pendarahan, membuat *lateral tunnel* untuk jalur flap, dan menempatkan drainase vakum di kedua lokasi donor dan resipien. Prosedur ini diselesaikan tanpa komplikasi. Flap LD menunjukkan fleksibilitas dan kemampuan beradaptasi yang sangat baik dalam menangani defek payudara. Perencanaan dan pelaksanaan bedah yang cermat memberikan kontribusi yang signifikan terhadap hasil yang sukses. Prosedur ini secara efektif memulihkan kontur dan simetri payudara sambil secara positif memengaruhi pemulihan psikologis pasien. Rekonstruksi flap LD segera setelah mastektomi menawarkan pendekatan yang andal dan aman yang menangani aspek fisik dan psikologis dari perawatan kanker payudara, yang pada akhirnya merevitalisasi kewanitaan dan meningkatkan kualitas hidup pasien mastektomi.
Kata Kunci: Flap Latissimus Dorsi, Kanker payudara, Mastektomi.

INTRODUCTION

Breast cancer remains the leading cause of cancer-related deaths among women worldwide, with mastectomy often being a necessary treatment option. However, the psychological impact of breast loss can be profound, affecting a woman's sense of femininity and self-image. Latissimus dorsi (LD) flap reconstruction has emerged as a reliable technique for breast reconstruction following mastectomy, providing both functional and aesthetic benefits (Sood et al., 2018; Nyekha et al., 2024).

The LD flap is versatile and can be employed for various breast cancer surgery defects, including quadrantectomy, lumpectomy, and modified radical mastectomy. It can be utilized in both immediate and delayed reconstruction scenarios, either alone as an autogenous flap or in combination with tissue expanders or implants[1]. Recent advancements in surgical techniques, such as the "scarless" approach and augmentation with thoracodorsal artery perforator flaps, have further enhanced outcomes and reduced donor site morbidity (Sood et al., 2018; Brambilla et al., 2021). This case report presents a successful immediate latissimus dorsi flap reconstruction following mastectomy for breast cancer, highlighting the surgical technique, postoperative course, and aesthetic outcomes. The procedure not only addressed the physical defect resulting from mastectomy but also contributed significantly to the patient's psychological recovery and quality of life, effectively revitalizing her sense of femininity and wholeness.

CASE PRESENTATION

A 44 year old female patient came to our hospital with a complaint of a lump in the right breast since two years ago.

Figure 1. Clinical Condition of The Patient Before Surgery, lateral view (A,B) and Anterior view (C)

Initially the lump was small as a marble, but gradually increased to the size of a tennis ball within the past year. The lump was not accompanied by pain, shortness of breath, bone pain, or nausea and abdominal discomfort. The patient has undergone 6 times of chemotherapy and the lump is felt to be shrinking.

Physical examination found a single reddish-coloured mass measuring approximately 5cm x 5cm x 5cm with indistinct borders in the dextra mammary region. Thoracic examination and abdominal ultrasound showed no metastases in the thorax and abdomen. However, on bone survey examination, multiple lytic lesions on os calvaria were found, suspecting bone metastases. The oncology surgical team conducted a histopathological examination, revealing grade 3 infiltrating ductal carcinoma not otherwise specified. Immunohistochemistry analysis classified the cancer as luminal B-like with HER-2 positive status. The patient was diagnosed with stage T4bN1M1 right breast cancer.

Figure 2. Flap Procedure During Surgery

Following six cycles of chemotherapy, the oncology surgeon performed a right modified radical mastectomy, with immediate latissimus dorsi flap reconstruction completed by a plastic surgeon. Breast reconstruction surgery was performed by designing the latissimus dorsi (LD) flap to match the required size, followed by making incisions through the skin, subcutaneous tissue, fascia, and muscle (Figure 2). The LD muscle was carefully elevated while controlling any bleeding. A tunnel was created on the lateral side of the right breast to allow the flap to pass through. A vacuum drain was placed at the donor site on the back, secured, and sutured layer by layer. Additionally, a vacuum drain was inserted into the right breast. The drains were kept in place for four days. The procedure was completed without any complications.

Figure 3. Postoperative Flap Procedure

DISCUSSION

The latissimus dorsi (LD) flap reconstruction technique has become increasingly popular due to its versatility in addressing various breast defects following mastectomy. The LD flap can be effectively utilized for immediate or delayed reconstruction, either as an autologous tissue flap alone or combined with implants or tissue expanders. In our presented case, immediate LD flap reconstruction following modified radical mastectomy demonstrated excellent adaptability in matching the flap size to the patient's breast defect, facilitating optimal aesthetic outcomes. Recent literature confirms that the LD flap is highly versatile, providing ample soft tissue coverage and suitable for various breast reconstruction scenarios, including extensive defects requiring substantial volume restoration (Vincent el al., 2023;Zheng et al., 2023). The technique has gained renewed attention in recent years due to its reliability and consistent outcomes in both immediate and delayed reconstruction settings (Banys-Paluchowski et al., 2023).

In our case, meticulous surgical planning and execution contributed significantly to the successful outcome. Incisions were carefully designed through skin, subcutaneous tissue, fascia, and muscle layers to elevate the LD muscle flap safely while controlling bleeding meticulously. Creating a subcutaneous tunnel on the lateral aspect of the breast allowed smooth passage of the flap, minimizing tension on the pedicle and enhancing vascular reliability. Recent studies emphasize technical refinements such as orientation of skin islands along relaxed skin tension lines, harvesting deeper layers of fat with the flap, and partial release of muscle insertion to enhance flap mobility and volume (Escandón et al., 2023). These

modifications align closely with our surgical approach, contributing substantially to the positive postoperative results observed in this case. The anterior-first approach has been shown to provide enhanced surgical exposure and superior ergonomics, leading to safer and more efficient flap elevation compared to conventional lateral approaches(Choi et al., 2022) . Additionally, the boomerang LD flap technique has emerged as a valuable modification for moderate to large breast reconstruction without requiring microsurgery or implants (Kang et al., 2022).

Mastectomy profoundly impacts women's psychological well-being due to loss of femininity and altered body image perception. Immediate breast reconstruction using LD flaps has been shown to significantly alleviate these psychological burdens by restoring breast shape and symmetry (Li et al., 2021). In our case, immediate reconstruction positively influenced the patient's psychological recovery, aligning with recent findings that demonstrate significant improvements in patient-reported outcomes such as self-confidence, femininity perception, and overall satisfaction following LD flap procedures[2]. Studies utilizing validated instruments such as BREAST-Q questionnaires consistently report improved scores at six weeks postoperatively compared to initial postoperative assessments, reflecting gradual wound healing and enhanced cosmetic outcomes over time (Nyekha et al., 2024). Recent research has also highlighted the importance of preoperative patient education and expectation management in optimizing satisfaction with reconstruction outcomes (Kim et al., 2023; Vincent and Hohman, 2021).

Although latissimus dorsi flap reconstruction is widely regarded as safe with low complication rates, potential issues such as donor site seroma formation, surgical site infection (SSI), and shoulder weakness are documented in the literature (Nyekha et al., 2024; Li et al., 2021). In our presented case, meticulous surgical technique—including careful hemostasis during muscle elevation and strategic placement of vacuum drains at both donor and recipient sites—successfully prevented postoperative complications. Recent evidence supports proactive measures such as quilting sutures at donor sites and prolonged drain placement to effectively minimize seroma incidence (Escandón et al., 2023). Furthermore, studies indicate that shoulder function typically recovers spontaneously within weeks postoperatively without significant long-term morbidity (Nyekha et al., 2024). Advanced techniques like the muscle-sparing thoracodorsal artery perforator (TDAP) flap have been developed to further reduce donor site morbidity while maintaining reconstructive benefits (Ngaserin et al., 2023; Yusufov et al., 2025).

The aesthetic outcome achieved in this case was highly satisfactory, with effective restoration of breast contour and symmetry immediately after surgery. This aligns with recent prospective observational studies reporting significant improvement in cosmetic outcomes within six weeks postoperatively due to gradual wound healing processes (Nyekha et al., 2024). Objective assessments by blinded observers have consistently demonstrated favorable aesthetic outcomes comparable or superior to preoperative conditions (Nyekha et al., 2024). Additionally, latissimus dorsi flap reconstruction offers a concealed donor-site scar on the back region—a feature highly valued by patients concerned about postoperative appearance. Three-dimensional imaging and planning technologies have further enhanced the precision and predictability of aesthetic outcomes in breast reconstruction (Bucaria et al., 2024; Gabriel Salum D'Alessandro et al., 2024).

Breast cancer management increasingly emphasizes not only oncological control but also quality-of-life considerations. Immediate LD flap reconstruction addresses both physical deformities resulting from mastectomy and associated psychological distress by

offering aesthetically pleasing results that enhance patients' self-esteem and psychosocial well-being (Vincent el al., 2023; Li et al., 2021). Our patient's postoperative course was free from complications; she reported high satisfaction regarding her reconstructed breast appearance. Literature from recent years corroborates these findings, highlighting improved quality-of-life scores among women undergoing immediate LD reconstruction compared to traditional mastectomy alone (Vincent el al., 2023). Recent studies have also demonstrated that immediate reconstruction does not significantly delay adjuvant therapy initiation, addressing previous concerns about potential treatment delays (Kim et al., 2022).

Despite numerous advantages associated with LD flap reconstruction, some limitations merit consideration. Potential complications include donor site morbidity such as seroma formation or temporary shoulder dysfunction; however, these complications are generally manageable through preventive techniques like prolonged drainage placement or quilting sutures (Nyekha et al., 2024;Escandón et al., 2023). In our experience described here, careful surgical planning effectively mitigated these risks. The integration of enhanced recovery protocols has further improved postoperative outcomes and reduced hospital stays following LD flap procedures (Abdou, Charipova and Song, 2023; Sowa et al., 2025).

Given its versatility, ease of harvest compared to abdominal-based flaps (such as DIEP), minimal donor-site morbidity when performed correctly, shorter operative times relative to other autologous options, and favorable aesthetic outcomes—LD flap reconstruction remains an excellent choice for selected breast cancer patients undergoing mastectomy (Escandón et al., 2023; Zheng et al., 2023). Surgeons should consider patient-specific factors including body habitus, defect size/location requirements for volume restoration when selecting reconstructive options. The LD flap remains particularly valuable for patients requiring moderate-volume breast reconstructions or those contraindicated for abdominal-based flaps. Recent innovations including robotic-assisted harvesting techniques have further expanded the applications and reduced the invasiveness of LD flap procedures (Eo et al., 2023; Kyeong Kyu Kim et al., 2016).

CONCLUSION

In conclusion, the latissimus dorsi flap reconstruction following mastectomy represents an excellent reconstructive option with numerous advantages. This case report demonstrates the successful application of immediate LD flap reconstruction in a 44-year-old female patient with stage T4bN1M1 right breast cancer who underwent modified radical mastectomy.

The LD flap technique proved to be versatile and adaptable, providing optimal aesthetic outcomes with effective restoration of breast contour and symmetry. The procedure was completed without complications, highlighting the safety profile of this reconstructive approach when performed with meticulous surgical planning and technique. Strategic placement of vacuum drains at both donor and recipient sites successfully prevented common postoperative complications.

Beyond the physical reconstruction, the procedure significantly contributed to the patient's psychological recovery by addressing the profound impact of breast loss on femininity and self-image. The LD flap reconstruction offers several distinct advantages including versatility for various breast defects, ease of harvest compared to abdominal-based flaps, minimal donor-site morbidity, and favorable aesthetic outcomes with a concealed donor-site scar.

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