

Breast Reconstructive Surgery: Latissimus Dorsi Flap for Breast Reconstruction

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ABSTRACT

The latissimus dorsi (LD) flap is a widely utilized autologous tissue option for breast reconstruction, offering versatility and reliable outcomes in various clinical scenarios. This technique involves transposing the LD muscle, often with overlying skin, from the back to the chest to restore breast volume and contour. It is particularly advantageous for patients unsuitable for abdominal tissue-based flaps, those with prior radiation, or individuals seeking implant-free reconstruction. Advances in surgical techniques, such as flap extension and fat grafting, have further optimized aesthetic results and minimized donor-site morbidity. Patient satisfaction remains high, with the LD flap serving as a valuable option for both immediate and delayed breast reconstruction, adaptable to individual patient conditions and preferences.

KEYWORDS: Breast Reconstruction, Latissimus Dorsi Flap, Autologous Tissue

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INTRODUCTION

The latissimus dorsi (LD) flap is a well-established autologous tissue option for breast reconstruction following mastectomy or breast-conserving surgery. The LD flap involves transposing the latissimus dorsi muscle, often with overlying skin (myocutaneous flap), from the back to the chest to reconstruct the breast mound. This technique can be performed with or without the addition of a breast implant, depending on the desired volume and patient-specific factors such as body habitus, prior radiation, and reconstructive goals.[1-5]

INDICATIONS

The LD flap is particularly valuable in several clinical scenarios:

- As a primary reconstructive option when abdominal flaps (e.g., DIEP, TRAM) are contraindicated or not feasible due to patient anatomy, comorbidities, or previous abdominal surgery.[6][5]
- In patients with poor local tissue quality, including those with prior radiation, where the vascularized muscle can improve wound healing and reduce complications.[2][5]
- As a salvage procedure for failed implant-based or autologous reconstructions.[2-3][5]

• For partial breast reconstruction after breast-conserving therapy, especially in patients with low-volume, nonptotic breasts, where the LD flap can restore contour and symmetry with high patient satisfaction and low complication rates.[7] Technical modifications, such as the use of extended LD flaps, immediate fat grafting (lipofilling), or endoscopically assisted harvest, have been developed to increase the reconstructive volume, minimize donor site morbidity, and improve aesthetic outcomes, including reducing visible scarring on the back.[8][9] Patient-reported outcomes are generally favorable, with high satisfaction regarding breast appearance, psychosocial well-being, and physical function, although donor site seroma remains the most common complication.[8][9]

In summary, the LD flap remains a versatile and reliable option for both immediate and delayed breast reconstruction, with a well-characterized safety profile and adaptability to a range of clinical indications.[1-3][7]

Ideal candidates for breast reconstruction using a latissimus dorsi muscle flap are those in whom other reconstructive options are less suitable or contraindicated, or who have specific clinical or anatomical considerations that favor this approach. The medical literature identifies several patient

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populations for whom the latissimus dorsi flap is particularly advantageous:

1. Patients with insufficient abdominal tissue or prior abdominopelvic surgery, making abdominally based flaps (such as TRAM or DIEP) unsuitable. This includes thin or underweight patients, as well as those who wish to avoid abdominal scars or have already used abdominal tissue for previous reconstruction.[1-4]
2. Patients with a history of prior chest wall irradiation, where implant-based reconstruction carries higher complication rates. The latissimus dorsi flap provides well-vascularized tissue that can improve outcomes in irradiated fields.[5-6]
3. Obese patients or those with elevated BMI, for whom abdominal flaps may be technically challenging or carry increased risk, but who are not ideal candidates for prosthetic reconstruction due to comorbidities or personal preference. The latissimus dorsi flap has demonstrated a favorable safety profile in this population, with complication rates comparable to non-obese patients.[5-6]
4. Patients with small to moderate breast volume requirements, such as many Asian women or those with naturally small breasts, where the volume provided by the latissimus dorsi flap alone (with or without fat augmentation) is sufficient to achieve satisfactory symmetry and contour without the need for an implant.[7][3]
5. Patients who prefer to avoid implants due to concerns about foreign bodies, device-related complications, or the need for future reoperations. The latissimus dorsi flap offers a fully autologous option in these scenarios.[7]
6. Patients requiring immediate or delayed reconstruction after mastectomy, including those with complex or large chest wall defects (e.g., after locally advanced breast cancer resection), where the flap can provide both skin and soft tissue coverage.[5][8]
7. Patients with failed prior implant-based reconstruction or those seeking conversion from implant to autologous reconstruction.[4]

CONCLUSION

The latissimus dorsi flap remains a versatile, reliable, and well-established option for breast reconstruction, particularly suited for patients with contraindications to other reconstructive methods or specific clinical considerations. Its adaptability to various situations—such as prior radiation, insufficient abdominal tissue, or desire to avoid implants—coupled with favorable patient outcomes and a manageable complication profile, underscores its ongoing relevance in reconstructive surgery. As technical modifications continue to evolve, the LD flap's role is likely to expand, offering personalized solutions that address individual patient needs and preferences, ultimately enhancing reconstructive success and patient satisfaction.

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