

Latissimus Dorsi Flap

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Introduction

The latissimus dorsi flap for breast reconstruction was introduced at a time when a radical mastectomy was the treatment of choice for breast cancer. Following a radical mastectomy, which removes the pectoralis major muscle and leaves very thin skin flaps, reconstructions with breast implants often produced suboptimal aesthetic results. Therefore, the main purpose of the latissimus dorsi myocutaneous flap was to provide better soft tissue coverage for a silicone gel-filled breast implant. The latissimus dorsi muscle was used to replace the missing pectoralis major muscle and recreate the anterior axillary fold. In addition, if the patient had undergone radiation treatment, the latissimus flap provided healthy, well-vascularized muscle and skin to cover the implant.

With the introduction of the TRAM flap, which is a reconstructive option that uses autogenous tissue only (i.e. it avoids the use of an implant altogether), the latissimus flap became more of a secondary option. In some patients however, it remains an ideal solution for breast reconstruction.

How is the procedure performed?

The latissimus dorsi flap can be used for breast reconstruction by itself or in combination with a breast implant. See [Figures 1](#), [2](#) and [3](#) for schematics showing the latissimus flap procedure. In women with very small breasts, the latissimus dorsi flap may provide enough bulk and size without the addition of an implant. However, in most patients, it is necessary to include an implant at the time of the reconstruction.

Figure 1 - This schematic demonstrates a typical mastectomy scar.

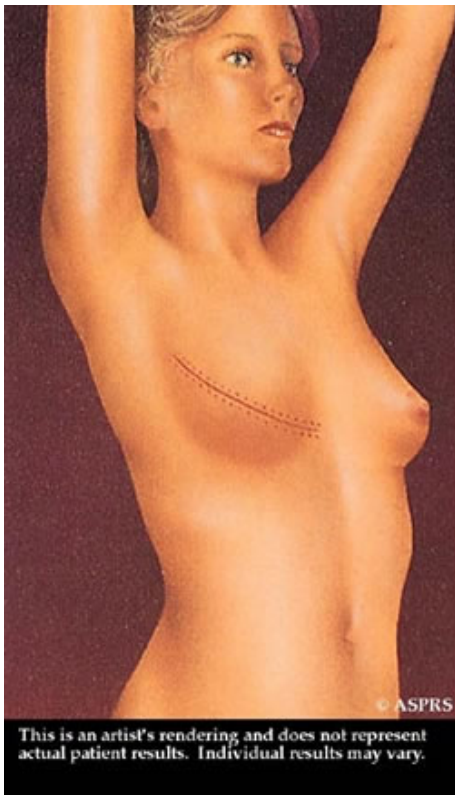


Figure 2 - This schematic demonstrates how the latissimus flap is moved from the back to the mastectomy site.



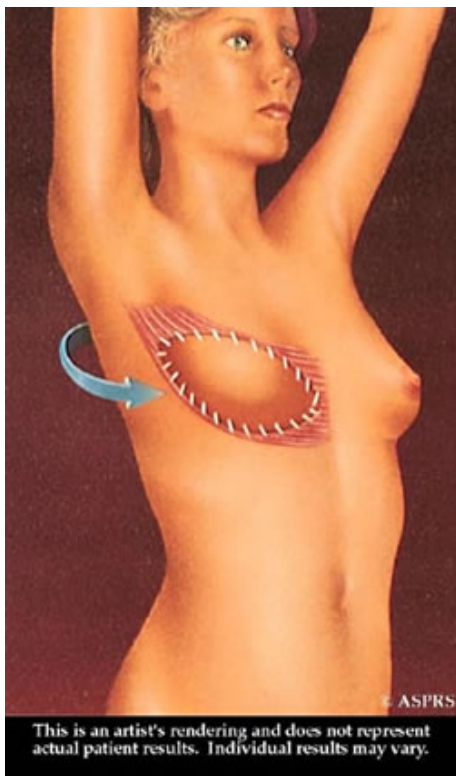


Figure 3 - This schematic demonstrates an idealized final latissimus flap result.

Careful preoperative markings are made and the procedure is begun with the patient in the lateral decubitus position (i.e. on their side) (see [Figure 4](#)). A flap consisting of the latissimus dorsi muscle and its overlying skin and fat is elevated (see [Figure 5](#)). A subcutaneous tunnel from the back to the new breast area is then made across the apex of the axilla. The flap together with its blood supply (the thoracodorsal vessels) is then moved through the tunnel from the back around to the breast area (see [Figure 6](#)).

This procedure is done with a single incision across the mid back area (usually under the bra line). If an implant is to be used, it is placed underneath the flap on the chest wall and the flap is then draped over the implant.



Figure 4 - The patient shown here has the preoperative markings for a latissimus flap reconstruction of her right breast.



Figure 5 - The same patient is shown here in the operating room with the latissimus flap being raised.



Figure 6 - The same patient is shown here immediately postoperatively (still on the OR table).

Scars

There are two scars associated with this procedure, one on the breast and one on the back. On the breast, most times the old mastectomy scar is excised and some of the back skin from the latissimus flap is used to fill in the resultant defect. Therefore, the scar on the breast becomes an elliptical shape. Commonly the scar on the back is a diagonal line (about 10 to 15 cm in length), which follows the course of one of the ribs.

Advantages of the Latissimus Dorsi Flap

- the procedure may be safer for some patients who are high-risk candidates for the TRAM procedure (e.g. obese patients, diabetics and smokers)
- the blood supply is highly dependable
- the flap is relatively easy to raise and shape
- this option does not cause weakness of the abdominal muscles

Disadvantages of the Latissimus Dorsi Flap

- most individuals will require the addition of a breast implant
- the procedure will leave a noticeable scar on the back
- a small proportion of patients may have less strength in their arm or shoulder
- the patient needs to be turned on the operating table during the procedure

Indications for the Latissimus Dorsi Flap

In patients who opt for or require a living tissue breast reconstruction and are not good candidates for a TRAM flap reconstruction, the latissimus dorsi flap can be very useful. This includes patients:

- who will not accept a decrease in abdominal muscle strength
- who lack excess abdominal tissue
- who have had certain abdominal incisions from previous surgery
- who are smokers, are obese, or have diabetes mellitus or collagen vascular disease

It may also include patients who have had a previous TRAM flap procedure to reconstruct their opposite breast.

Contraindications for the Latissimus Dorsi Flap

Possible contraindications include patients:

- with pre-existing problems of their back or shoulder girdle
- with certain scars on their back
- who have had surgery in the axilla (i.e. armpit) that would have disrupted the blood supply to the latissimus muscle

Possible Risks/Complications of a Latissimus Flap

Fluid collections (i.e. seromas) may occur in the back area after the drains have been removed. Most times, this fluid will reabsorb on its own. However, it occasionally may need to be drained by the surgeon using a syringe. Rarely, a drain may have to be inserted to fully remove the collection.

Infections are rare, but possible. Antibiotics will treat the majority of these infections, but an operation to drain the area may be required in some instances.

Delayed wound healing may occur at either the donor site or the new breast site. Most times this will heal on its own, but it may require dressing changes for a few days or weeks.

Although partial or total loss of the flap is possible, the latissimus dorsi flap is highly reliable and therefore this is a very rare occurrence.

Some women may experience minor back muscle weakness, which affects their arm when it is lifted above their heads.

Finally, if a breast implant is used in combination with the flap, the risks or complications associated breast implants are possible. These include leaks or rupture, migration of the implant, and capsular contracture. For more information on breast implants, please refer to the section devoted to implant reconstructions.

Recovery Time

The latissimus dorsi operation takes between 2 to 4 hours to complete. Most patients will stay in hospital for 3 to 4 days. Patients may experience pain to varying degrees in the back area and

under the arm for about 2 to 6 weeks. This is usually adequately treated with analgesics. Most times, it takes approximately 3 to 6 weeks to recover and resume normal activities.

Patient Examples of Latissimus Flap Reconstructions

[Example 1](#)