

The Kite Latissimus Dorsi Flap for Breast Reconstruction: An Attempt to Reduce Lateral Chest Wall Deformity and Axillary Bulking



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Abstract The latissimus dorsi flap is a commonly used tissue transfer for volume replacement in partial or total breast reconstruction. In this era of cosmetic awareness and oncoplastic breast surgery, two main defects are related to the conventional technique: the back scar and the bulkiness on the lateral chest wall, under the axilla. Axillary bulking, a disturbing defect for the majority of patients, is a persistent consequence, independent of the technique used, even when the proximal tendon is cut. We describe a new approach, the kite latissimus dorsi flap, consisting of harvesting the flap, partially or totally, with pedicle dissection from the muscle, extending dissection, perforator style if needed, until the external border of the breast (anterior axillary line) is reached. The muscle is then cut at that level, leaving no unnecessary volume under the axilla, which would cause bulkiness and chest wall deformity.

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Keywords Latissimus dorsi flap · Lateral chest wall deformity · Breast reconstruction · Axillary bulking

The latissimus dorsi (LD) flap, first described by Tansini in 1896 [1], is a commonly used tissue transfer for volume replacement in breast reconstruction, either for partial or total mastectomy defects.

In this era of cosmetic awareness and oncoplastic breast surgery, the conventional technique presents two main concerns: the large back scar and the bulkiness on the lateral chest wall, under the axilla [2].

Trying to improve aesthetic results, harvesting has been addressed in several ways, from shortening the scar to the endoscopic approach, with less traumatic tissue dissection and improved cosmesis [3–6].

Lateral chest wall deformities have not been so widely thought of, although the resulting defect, independent of the technique used, even when the proximal tendon is cut, can be quite disturbing for many patients.

We describe a new approach, the kite latissimus dorsi flap (kLD), that consists of harvesting the muscle, with pedicle dissection from itself, perforator flap style if needed, until the external limit of the breast to be reconstructed (anterior axillary line). (Fig. 1).

The muscle is then cut at that level, leaving no unnecessary volume under the axilla.

An axillary incision is used and initial dissection focuses on identifying the thoracodorsal axis. Once identified, minor vascular tributaries and the constant branch for the tip of the scapula are ligated and divided, to permit flap rotation; vascular dissection is carried out until the pedicle enters the muscle belly (Fig. 2).

Dissection continues in the upper and outer portion of the muscle to identify its posterior edge, where it is split from the teres major; then, the deep surface of the muscle's upper part is elevated, to separate the entire muscle from its upper attachments, just above where the dissected pedicle enters the muscle. Immediately after, the deep surface of

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Fig. 1 Kite latissimus dorsi flap — positioned flap without volume on lateral chest wall

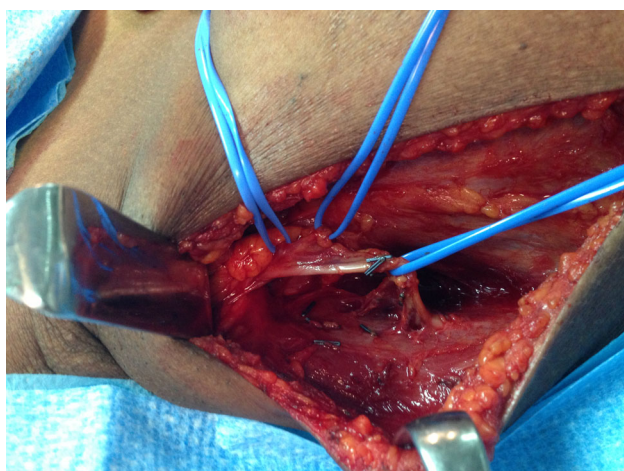


Fig. 2 Thoracodorsal vessels dissected to the muscle

the kLD is elevated off the chest wall using a combination of electrocautery and blunt dissection, assisted with a lighted retractor; thoracolumbar perforators are identified and ligated.

The next step is to dissect the superficial plane, using electric cautery, again assisted with a lighted retractor. After completing the deep and superficial dissection planes, we reach a point in the procedure where the kLD is left adherent to only its distal origins and its proximal insertion on the humerus.

The distal extent of the muscular flap is sharply divided using tactile guidance and traction, and electrocautery.

After distal division is complete, the muscle is delivered through the axillary incision, now only adherent to its proximal origin.



Fig. 3 Aesthetic result at 3 months postop



Fig. 4 Aesthetic result at 6 months postop

The distance to the lateral breast edge is then calculated and if necessary, further pedicle dissection is carried into the muscle, perforator style, or the serratus branch is ligated, permitting the LD muscle belly not to cross the lateral chest wall; then the upper muscle is again cut using electrocautery, and the muscle flap is transferred. We have used this new approach in 100 patients, with no significant complications, an irrelevant increase in operating time (around 15 min), and believe that this modification will improve lateral chest wall cosmesis (Figs. 3, 4) Studies will be needed to evaluate aesthetic results, and this will be our next step.

Compliance with Ethical Standards

Conflicts of Interest The authors declare that they have no conflicts of interest to disclose.

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