Role of Vastus Lateralis Myofascial Free Flap in Reconstruction of Head and Neck Defects

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Objectives
The Vastus Lateralis Free Flap (VLFF) is an underutilized resource for head and neck reconstruction. We sought to:
1) Describe the flap outcomes in this setting, and
2) Identify ideal clinical scenarios for its use.

Introduction & Methods
The Vastus Lateralis is a very versatile myofascial flap with several distinct advantages, including:
1. Constant vascular anatomy.
2. Long pedicle (8-10 cm).
3. Limited donor site morbidity.
4. Synchronous harvesting.
5. Can be used in obese patients.
6. Variable muscle segment.
7. Potential for a chimeric flap with fascia lata component.

We performed a retrospective review of 8 patients who underwent reconstruction with this technique at an academic tertiary institution between April 2010 and July 2014. Demographics, indications, surgical technique, complications and outcomes were retrieved.

Relevant Anatomy
The Vastus Lateralis receives its vascular supply from the descending branch of the Lateral Femoral Circumflex Artery (LFCA).

The myofascial component length ranged from 7-20 cm, and width ranged from 6-11 cm, with a mean area of 102 cm² (range=35-240). The mean pedicle length was 11.3 cm. Hand-held (n=3) or implantable (n=5) doppler were used for monitoring and there were no flap losses. The flap was skin-grafted in 3 cases with no reported graft loss. The mean ICU stay was 1.1 days (0-3) and LOS=7.8 days (5-13). Complications included wound infection (n=1) and myocardial infarction (n=1) in a patient with multiple comorbidities. The donor site was closed primarily in all cases, with no significant donor site morbidity reported.

Clinical Examples
A. Limited infratemporal fossa defect
B. Extensive scalp defect requiring contralateral anastomosis (left superficial temporal vessels)

Discussion
The VLFF is a valuable alternative for head and neck reconstruction. This flap provides a large amount of soft tissue that can be harvested in supine position and with minimal donor site morbidity. Given its long pedicle and variable myofascial component, it can used for a wide range of defects. In our experience, the flap appears particularly well suited for skull base and scalp reconstruction, where it offers distinct advantages over the latissimus dorsi muscle flap.