

ANTERO-LATERAL THIGH FLAP

Described by Song et al.⁽¹⁸⁴⁾ in 1984 as the septocutaneous perforator flap, it was later questioned, and anatomic variations were clarified by anatomic studies; resulting in 40,8% for septocutaneous vessels and 59% for musculocutaneous perforators^(78,158). This flap is one of the most commonly used for a great variety of defects of the head, neck, oral cavity, oesophagus, upper and lower extremity, groin and abdominal wall and because of its possible combinations^(82,83). It is a highly reliable, constant, versatile, relatively easy to dissect, thin flap, which, if it is not wider than 7-8 cm, it will allow for a donor area primary closure with minor donor site morbidity.

Indications

As a free flap, it can be used for covering defects all over the body as has already been described. As a perforator pedicled flap, and depending of the pedicle's length it can cover defects at the perineal-groin area (short pedicle) or abdominal or iliac crest zone (long pedicle) (fig. 7.16).

Anatomy and vascularization

The Lateral Circumflex Femoral artery (LCFA) (fig. 7.1-9) arises from the Deep Femoral artery (DFA) deep to the Rectus Femoris and Sartorius muscles giving off three branches: the Ascending branch (AB), the Transverse

Branch (TB) and the Descending Branch (DB) (fig. 7.1-10, 11 and 13). This branch, the DB, courses caudally on the medial aspect of the Vastus Lateralis or occasionally overlying the Vastus intermedius muscle⁽⁹⁶⁾. The DB of the LCFA gives off several branches over the line that goes from the anterior superior iliac spine to the lateral superior corner of the patella. Some of these branches are muscle perforators while others emerge as septal perforators.

Markings

Outlining the flap starts by localizing the perforator branches that will finally vascularize the flap. First, the superior iliac spine and the proximal lateral corner of the patella are marked out. A line is drawn uniting both reference points. At midpoint of the line a circumference, 3 cm in diameter is outlined. Usually perforators emerge at the inferolateral quadrant. When possible, Doppler examination will add accuracy to perforator location. Once located, an elliptical cutaneous island is outlined around the localized perforators.

Elevation

Flap elevation steps are described below on a fresh cadaver dissection.

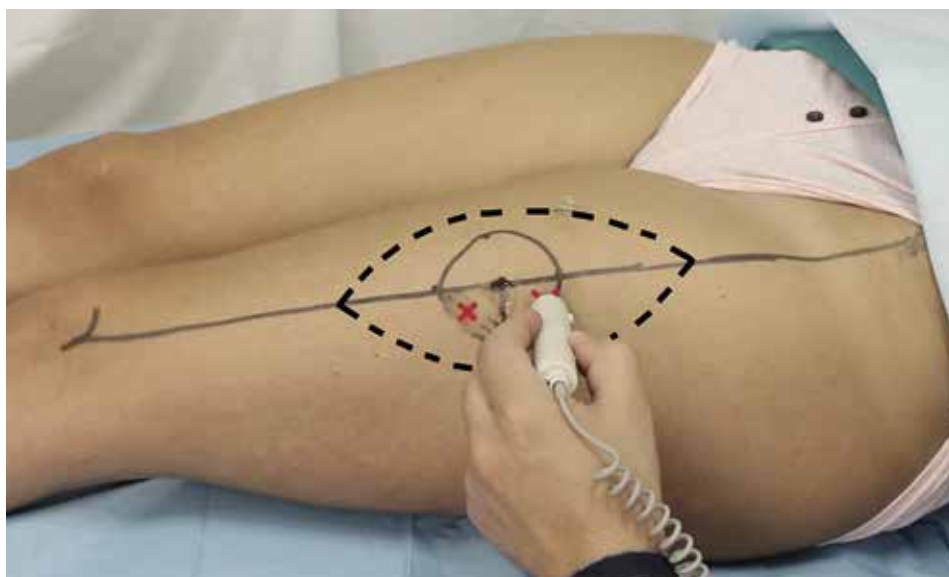


Figure 7.8. An elliptical cutaneous island is outlined around the localized perforator vessels. However Doppler examination greatly helps to localize the points where vessels pierce the fascia and emerge to the skin.



Figure 7.9. Flap elevation starts by incising the medial edge of the cutaneous island until the fascia is reached. Dissection is continued over the fascia, until the Lateral femoral cutaneous nerve is identified and preserved.



Figure 7.10. Dissection is continued and every musculocutaneous perforator near the septum is isolated and respected.

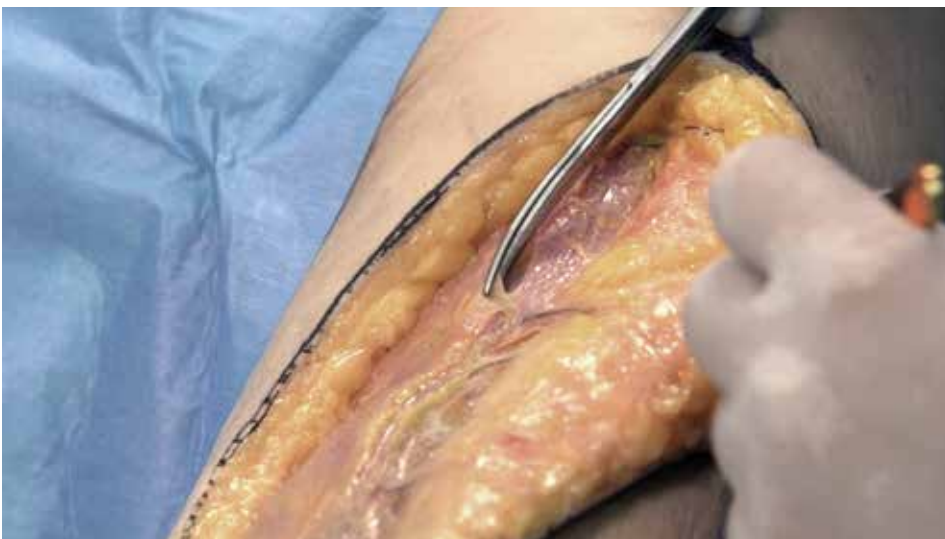


Figure 5.11. Fascia is incised medially to the perforator vessels and the muscle is exposed from proximal to distal.



Figure 7.12. If the main perforator vessel is septal, the Descending Branch of the LCFA is localized at the base of the septum. If vessels emerge through the muscle it has to be opened to expose the vessels in length until the DB of the LCFA is found. Muscle should not be spared in order to protect the pedicle.

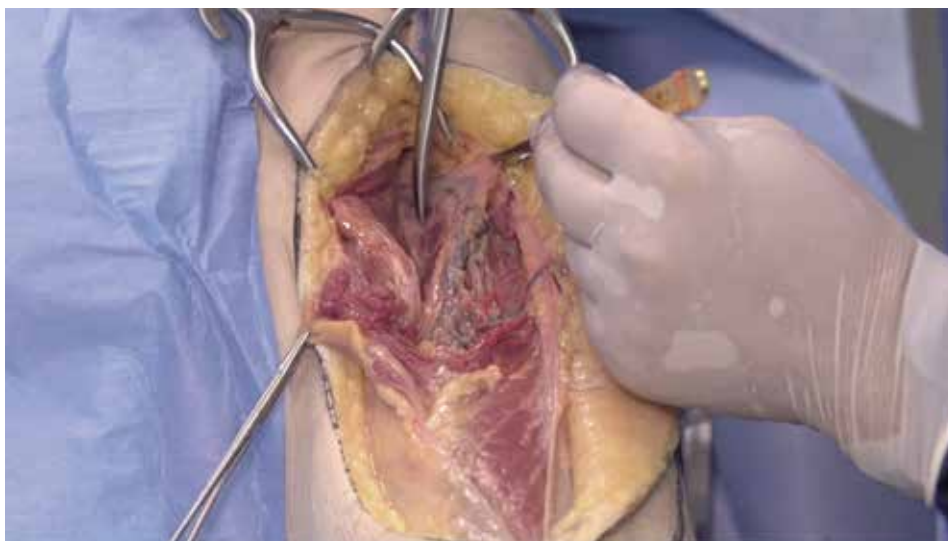


Figure 7.13. Muscle is opened as much as necessary to individualize the pedicle proximally. If needed, dissection is continued upward to gain length for the pedicle.

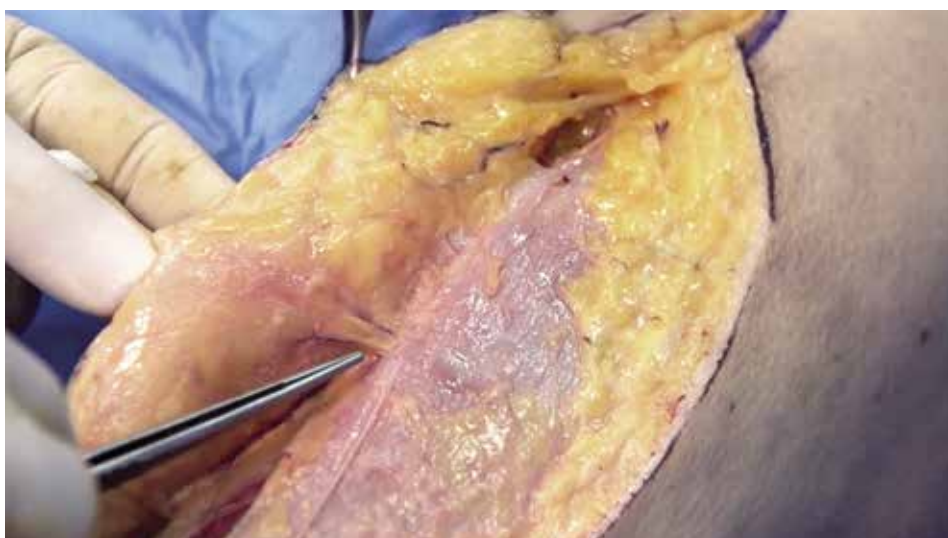


Figure 5.14. On the lateral side, incision is made deep to the fascia and dissection is carried out over the fascia until the septum is reached. Great care has to be taken with musculocutaneous perforators emerging from the septum.



Figure 7.15. Main perforator is identified and isolated from the lateral aspect and the main trunk elevated from the muscle around it.

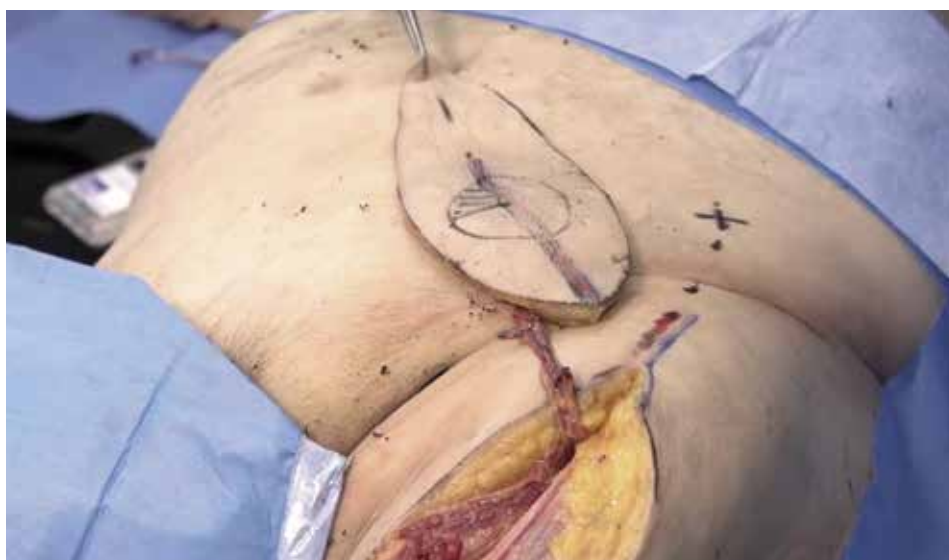


Figure 7.16. The cutaneous island based on a long pedicle can reach the lower abdomen or lateral hip zone.