

Table 3.8 Typical and atypical indications for the free and pedicled version of “workhorse” flaps harvested from the upper extremities, pelvis, groin, buttock, and lower extremities

Flap	Free microvascular transfer		Pedicled	
	Typical indication	Atypical indications	Typical indication	Atypical indications
Lateral arm	Small defect of arm or leg	Short segment bone or tendon defect	Elbow coverage	Axilla
Radial forearm	Oral lining	Foot or distal third leg	Hand coverage	Elbow coverage
Iliac	Mandible	Long bone segmental defects	Pubis	Sacrum
Groin	Large defect if cosmetic donor site imperative	Extremities	Thigh or abdomen	Staged upper extremity pedicle flaps
Gluteus	Breast reconstruction	None	Sacral or ischial pressure sores	Lumbar pressure sores
Tensor fascia lata	Vascularized fascia, Achilles repair	Abdominal wall	Abdominal wall	Groin
Gracilis	Small extremity wound, facial reanimation	Breast reconstruction	Groin, perineum or vagina	Scrotum, penis
Gastrocnemius	None	Pressure sore	Knee wound	Cross-leg flap
Soleus	None	None	Proximal leg	Distal leg
Fibula	Mandible or large bone segmental gap	Pelvis	Knee arthrodesis	Ipsilateral tibia segmental gap
Glabrous skin	Hand	Foot	Foot	None
Toe	Hand	Nail transfer	N/A	N/A

N/A, not applicable.

Table 3.9 Typical and atypical indications for the free and pedicled version of “workhorse” perforator flaps

Flap	Free microvascular transfer		Pedicled	
	Typical indication	Atypical indications	Typical indication	Atypical indications
Deep inferior epigastric artery perforator flap	Breast reconstruction	Large soft tissue defect	Groin coverage	Abdomen
Superficial inferior epigastric artery perforator flap	Breast reconstruction	Extremity defect	Groin	Staged upper extremity coverage
Superior gluteal artery perforator flap	Breast reconstruction	None	Sacral pressure sores	Lumbar pressure sores
Inferior gluteal artery perforator flap	Breast reconstruction	None	Ischial pressure sores	Perineum
Anterolateral thigh (ALT) flap	Large soft tissue defect	Achilles tendon	Thigh wounds	Abdomen
Anteromedial thigh flap	Large soft tissue defect if ALT flap unavailable	None	Thigh wounds	Groin
Thoracodorsal artery perforator flap	Large soft tissue defects	Breast reconstruction	Breast reconstruction	Axilla
Posterior tibial artery perforator flap	Thin contour required	None	Distal lower extremity	None

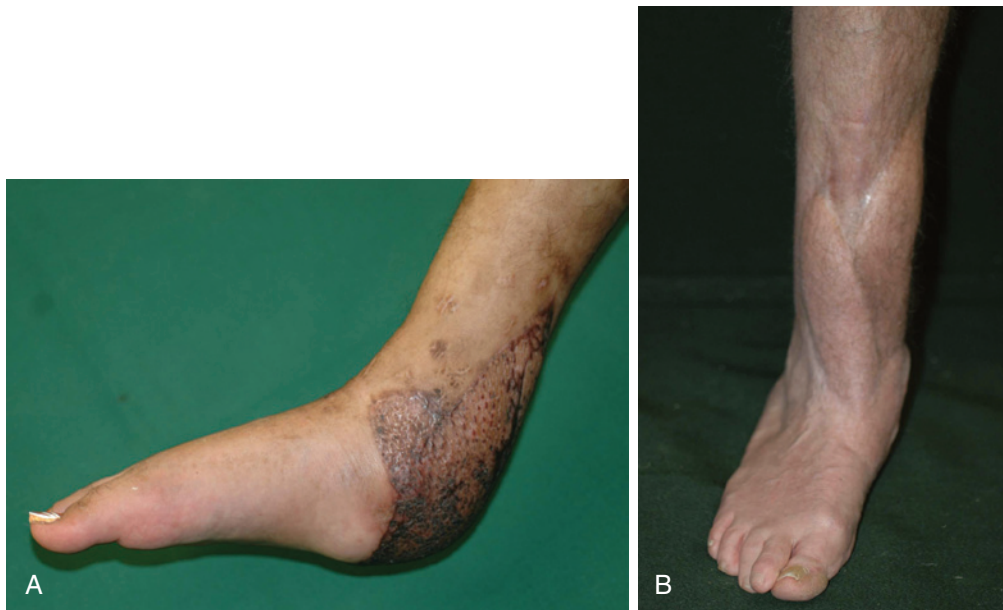


Figure 3.2 (A) Although the bulk and contour of this latissimus dorsi muscle free flap used to cover the degloved plantar and posterior hindfoot was acceptable, the final appearance after the necessary skin graft was not ideal. (B) This can be compared with metachronous bilateral anterolateral thigh free flaps used to cover complications of an open distal tibial fracture, where both blend almost imperceptibly into each other and the surrounding lower limb to give a superior appearance.



Figure 3.3 This scapular free flap was obviously too bulky for coverage of the dorsal foot subunit. A thin flap would have been a preferable choice to allow more immediate use of footwear.

(Fig. 3.2). Secondary touch-ups may be inevitable, but should be avoided whenever possible by the proper flap selection to begin with (Fig. 3.3). Whether or not muscle flaps atrophy with time is a controversial point,¹⁹ but cutaneous flaps after resolution of edema will maintain the characteristics of the initial donor site, even over time as regards their size and contour.

Wei and colleagues²⁰ in their voluminous experience with the anterolateral thigh flap, consider it to be the “ideal” soft tissue flap for “all seasons” (Table 3.4 and Chapter 59), since it can be prefabricated,²¹ thinned to the desired contour,²² used as a megaf flap or split into multiple flaps,²³ has a long and reliable vascular pedicle, and can be used in combination with multiple other tissue components such as fascia lata or muscle if desired.²⁴

Few would disagree that muscle perforator flaps, at least in the Western Hemisphere, where obesity is more prevalent, require a more difficult dissection that potentially makes them less reliable.^{25–27} Logically then, the muscle flap will still have a role particularly in obese patients; and, of course, if a dynamic muscle transfer is required.²⁸ If used for coverage only, a skin graft will be needed on the muscle, so that the cosmetic result will virtually always be inferior to that possible with any cutaneous flap (Fig. 3.2).

THE DONOR SITE

Solving the given problem element that the reconstructive surgeon is confronted with by incorporating the proper restorative surgical strategy,¹ is of paramount importance. Yet an equally important objective must be to minimize any iatrogenic morbidity, especially when inflicted at the donor site of the selected flap. Currently, the total absence of donor site morbidity is possible only if the patient with the defect to be reconstructed has an identical twin willing to donate the missing part.^{29,30} As previously mentioned, and again here reiterated for emphasis, all muscles used as a flap will result in some function loss even with function preservation techniques.¹⁷ The reality is that the same is true with muscle perforator flaps, even though all muscle is totally excluded from these cutaneous flaps. The unavoidable