

A rethink on the use of the anterior tibial artery as recipient site in lower limb reconstruction

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Introduction:

The choice of recipient vessel is a critical step within the decision process of free tissue reconstruction of the lower limb. Previous literature has included cautions on choosing the anterior tibial artery, including anatomical factors, such as size, spasm, and access, as well as within traumatic patients, a higher risk of extensive and more proximal vessel injury. The authors found the anterior tibial artery is a reliable recipient site for reconstruction at various sites and indications of the lower limb.

Method:

Retrospective consecutive case series review over 6 years, 1/1/2008 to 31/12/2013, in one unit, of free tissue reconstruction using the anterior tibial artery as recipient.

Results:

78 patients with 81 flaps had lower limb free tissue reconstruction, using the anterior tibial artery as the recipient vessel, comprising 31% of all lower limb reconstructions during this time interval. Average age was 42.3 years, with a male preponderance (74%). The most common indications were acute trauma (60%), secondary infection/wound breakdown (34%), pressure sores (4%), and tumour excision (2%). Distribution varied, with distal third (43%), middle third (19%), foot (17%), and knee (9%) the most common sites, most often using ALT (78%), gracilis (6%) and groin (4%) free flaps. There was no significant difference of flap loss (2.3%), complications (11%), or grade of injury compared to reconstructions using other recipient vessels. In the trauma subgroup, flap loss was only 2% despite, due to local referring and transfer practice, a mean time of 11.7 days from injury to wound coverage. Mean follow-up was 13 months, with 81% regaining full mobility, and 82% returning to work.

Conclusion:

Contrary to concerns raised, the anterior tibial artery provides a reliable, reproducible, and safe recipient site from foot to knee and in multiple indications, including high energy open fracture injuries.

References:

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