

Reverse Sural Artery Adipofascial Flap: An Instructional Video

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Soft tissue reconstruction of the distal lower leg and ankle can be challenging, especially due to traumatic or infectious causes. Aside from free tissue transfer, options for such reconstructions are limited locally or regionally. However, the reverse sural fasciocutaneous flap, or one of its modifications, can be a workhorse flap for many of these defects. One well-described complication of the fasciocutaneous flap is venous congestion with resultant partial flap loss. Additionally, such flaps can sometimes be quite bulky.^{1,2} The adipofascial modification of this flap is an excellent alternative, which, in our opinion, will lessen these complications. The flap also uses the same landmarks as the classic flap, and no microsurgery is required. (See Video 1 [online], which displays right lateral malleolar wound with pre-incisional markings for reverse sural artery adipofascial flap.)

One drawback of this flap, however, is that it requires a skin graft, either at the time of flap harvest or as the second part of a 2-stage procedure.^{1,2} One other potentially important aspect to consider here is the size of the defect to be covered. Some report that larger defects should preferentially be managed with the adipofascial flap because it does not create a large cutaneous defect at the donor site, and it may have better reach or ease of inset because it can be turned over on itself compared with the transposition that is required for a fasciocutaneous flap.³ In our experience, it is frequently our first flap of choice for covering these complex distal leg and foot defects and is easy to elevate without any microsurgical skills, has minimal donor morbidity, and has acceptable aesthetic outcome. We describe our technique here. (See Video 2 [online], which displays reverse sural artery adipofascial flap dissection and inset with final results.)

Our patient was involved in a motor vehicle collision with a full-thickness avulsion injury to the anterolateral aspect of his right ankle with associated traumatic arthrotomy. He was found to have an exposed tibiotalar joint and extensor tendons requiring complex coverage of the area. After multiple repeated orthopedic interventions in the area, the patient underwent a reverse sural adipofascial flap coverage with placement in wound vac and posterior-based short leg splint to prevent kinking. Five days after the initial operation, formal inset of the flap without division of the pedicle was performed and a split-thickness skin graft was placed. Repeated follow-ups showed complete healing of the area.

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