When Calcanectomy Fails:  
Foot Salvage By Plantar Flap Transposition  
Michael Gerrity DPM PGY-2, Kaj Johansen MD PhD

Background:  
Calcanectomy is the typical operation to treat large heel ulcers. Up to 35% of calcanectomies fail, generally resulting in below-knee amputation (1-10). Local myocutaneous flaps might be an alternative foot salvage procedure.

Theory:  
- Perfusion to plantar foot based on posterior tibial artery with axial flow (11)  
- Forefoot is dispensable  
- Maintain weightbearing specific tissues

Case Report:  
A 53-year-old diabetic female presented with a 10cm x 10cm heel wound following failed partial calcanectomy. She refused below-knee amputation. Wound coverage with a posteriorly transposed plantar flap was proposed. Prior arterial studies showed good lower extremity perfusion (left ankle-brachial index of 1.07, digital-brachial index of 0.69 and forefoot TcPO2 of 53mmhg).

Technique:  
The patient was positioned prone. The plantar incision was centered at the glabrous junction both medially and laterally. The distal incision was marked at the sulcus to leave the plantar flap as long as possible. The marginal incisions were completed to bone from the apex of the wound to the sulcus. The plantar myocutaneous flap was raised distal to proximal, staying on bone. The flap was mobilized completely distally and laterally, with care taken not to damage the medially based vascular pedicle.

The plantar flap was then transposed posteriorly to close the previously debrided heel wound. The exposed metatarsals were sectioned at a level to allow primary closure of the distal wound.

The operative site healed per primam and the patient is independently ambulatory at one year.

Comment:  
When calcanectomy fails, and in select cases where plantar perfusion is satisfactory (or can be made so by percutaneous or open surgical revascularization), posterior plantar flap transposition may be a feasible and durable method of foot salvage in patients with large heel ulcers.

Figures 1 through 9:  
1. Preoperative; 2. Raising the lateral flap; 3. Flap freed with posterior translation; 4-7. Closure; 8-9. Reconstructed foot at 3 months