Heel Reconstruction with Medial Plantar V-Y Flap

Reference:

Scientific Literature Review

Reviewed by: Thomas Belken, DPM
Residency Program: St John North Shores Hospital, Harrison Township, MI

Podiatric Relevance:
Full thickness defects to the plantar heel present a challenge to the foot and ankle surgeon. Skin grafts and flaps have been described to resurface this area. This article describes a technique that provided coverage to a plantar ulceration without creating a donor site.

Methods:
This article presents three cases of defects closed utilizing V-Y medial plantar neurovascular island flap. Medially, the abductor hallucis brevis muscle was exposed. Then laterally, the flexor digitorium brevis muscle was exposed on its lateral border. Distally, the medial plantar artery was divided and the flap was raised from distal to proximal in the plane between the muscle layer and fascia incorporating the artery. Interfascial dissection of the medial plantar nerve preserved digital nerves and muscle branches and retained cutaneous branches in the flap. Then the fascial septa along the length of the flap were divided to allow mobilization of flap proximally into the defect; after which time, primary closure was performed on the donor site.

Results:
Patients were followed for one year post-operatively. All three patients continued to have full sensation and normal gait with even distribution of weight. The flap provided sufficient soft tissue bulk to prevent recurrence of ulceration.

Conclusion:
The authors were able to resurface plantar defects with durable, sensate skin to achieve weight distribution during gait cycle as near to normal as possible utilizing the V-Y modification of the medial plantar artery flap.