The Management of Ischemic Heel Ulcers and Gangrene in the Endovascular Era

Reference:

Scientific Literature Review

Reviewed by: David Swain, DPM
Residency Program: Central Alabama Veterans’ Health Care System

Podiatric Relevance:
The management of ischemic heel ulcers with gangrenous changes is a common and challenging task for physicians today. There is often a lack of adequate tissue for bone and tendon coverage, difficulty avoiding local pressure, inadequate tissue perfusion and impaired wound healing due to diabetes, malnutrition and renal insufficiency. The aim of this study was to compare the outcome of patients presenting with heel ulcers or gangrene with those having lesions on other parts of the foot.

Methods:
All patients who presented to the Veterans Administration Western New York Healthcare System between June 1, 2001 and October 31, 2006 with ischemic tissue loss and who underwent at least one vascular intervention were entered into a database. The patients were then divided into two groups: those with tissue loss at the heel (HEEL group) and those with tissue loss at other parts of the foot (non-HEEL). The treatments and outcomes between the two groups were then compared.

Results:
Three hundred eight patients were treated (71 HEEL and 237 non-HEEL). The primary amputation rate was 11% for the HEEL group vs 3% for the non-HEEL. The 24-month limb salvage and patency rates were similar between the two groups. The HEEL group had a worse survival rate, 43% vs 63% at two years. Increased limb loss in the HEEL group was associated with serum albumin levels less than 3g/dL, dialysis dependence and gangrene. Excluding those who underwent primary amputation, patients who received an endoscopic revascularization procedure had similar results as those who underwent an open revascularization procedure.

Conclusions:
Patients with ischemic heel ulcers or gangrene are more likely to be non ambulatory, to be nursing home residents, to have a poor nutritional status and to undergo primary amputation. With attempted salvage, however, the rate of successful limb salvage was similar to those of non-HEEL patients. This demonstrates the importance of proper revascularization procedures in managing these patients. With newer endoscopic procedures gaining popularity, patients who are not medically fit for an open procedure can now have a better chance at limb salvage. The limitations of this study include its retrospective nature and small sample size compared to the multiple variables that can affect the outcome of this patient population. In addition, there were also no standardized treatment protocol for the use of adjunctive modalities.