LESSON OF THE MONTH

Challenging Preconceptions in the Management of the Ischaemic Heel

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Introduction

Many vascular surgeons treating ischaemic ulcers of the heel feel that, when necrosis extends to bone, the foot is unsalvageable, and a major lower limb amputation should be performed. We present a case report of a patient with a 12 cm infected tissue defect, with exposed tendon and bone, that challenges this assumption.

Case Report

A seventy-year-old diabetic woman presented with a fourteen-month duration of a painful ulcer on the right heel. She had been diabetic for ten years, and was a lifelong smoker. No neuropathy was present. There was no osteomyelitis on X-ray, however the white cell count was $20 \times 10^3$ mm$^3$, and she was pyrexial on admission. Arterial duplex scanning showed a right

Fig. 1. The foot after initial debridement.

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superficial femoral and external iliac artery occlusion. She was managed with bed rest and intravenous antibiotics. To revascularise the foot we performed right external iliac angioplasty and stenting, then a right common femoral to below knee popliteal reversed long saphenous vein graft. Postoperatively there was a patent posterior tibial artery, on both angiography and Doppler examination, which was inaudible preoperatively. Subsequently we performed debridement of the right heel soft tissues, achilles tendon and calcaneum, to bleeding cancellous bone (Fig. 1). Further debridement of necrotic tendon and calcaneum was performed four weeks later, and a Scotch cast boot was applied.

The pyrexia and leucocytosis resolved, the wound healed gradually (Fig. 2), and physiotherapy was commenced. The patient now mobilises independently with a frame (previously being wheelchair bound), having been discharged three months after admission. One year later the foot has healed completely. A small area of new ulceration on the sole has been successfully treated conservatively.

**Discussion**

Partial calcanectomy has been described before, although many vascular surgeons seem unwilling to undertake the procedure. It has been used in patients with and without peripheral vascular disease and diabetes, and in the management of fractures of the calcaneum.1–3

A recent review of patients with ischaemic heel ulceration found that by 6 months 73% of wounds had healed, with 10% of patients requiring a below knee amputation, concluding that at 3 years limb salvage rates approached 86%.1

We suggest that all patients with heel ulceration should be considered for active management with a combination of revascularisation, debridement, and pressure relief, although several procedures may be required with a prolonged hospital stay.

Posterior tibial artery patency is paramount for successful healing.4 Free tissue transfer should be considered which can be combined with a distal bypass procedure if necessary, in selected patients.5

**References**


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