Introduction

Implant survival has a significant impact on lower extremity morbidity and mortality for high risk for major amputations. Although there are many conservative treatment options, such as antibiotic cemented or non-cemented osteosynthesis or a heel osteotomy become chronic or resistant, more invasive management is required. The partial calcanectomy is a surgical option which can address pathology, and the option of a calcanectomy is most likely a good option in the presence of infection, soft tissue defect, and closure and closure under tension may worsen which patients at risk for further complications. The VCC Contour Calcanectomy (VCC) is an improved unipodcalve bony technique. The purpose of this paper is to describe the indications, contraindications, retrospective technique and postoperative management of the VCC in patients who present with heel ulcers (in the sagittal setting).

Perioperative Considerations and Contraindications

The primary indications for the VCC are patients with ulcers of the plantar and/or posterior heel secondary to diabetes, ischemia, infection, and factors influencing postoperative course. The VCC is reserved for those patients with significant heel ulcers and/or those complicated with OM or the calcaneus and/or those with non-diabetic foot disease, and those patients with minimal ambulation requirements, those who use their limbs to transfer, and non-ambulatory patients. Contraindications for this procedure include patients with a foot ulcer, midfoot or hindfoot pathology which decreases the likelihood for a functional outcome that may be better served with alternative treatments including the need for a proximal amputation.

A patient who presents with a heel ulcer is given a comprehensive evaluation aimed to stratify the patient’s risk into a low risk, medium risk, and high risk limb salvage patients. Typically, an aggressive surgical resection is indicated for those patients who have minimal ambulation requirements, those who use their limbs to transfer, and non-ambulatory patients. Contraindications for this procedure include patients with foot ulcers, midfoot or hindfoot pathology which decreases the likelihood for a functional outcome that may be better served with alternative treatments including the need for a proximal amputation.

Surgical Technique

The VCC technique involves four basic steps:

1. The vertical calcanectomy (long horizontal line) should be placed just inferior to the bisection (thick line). Figure 3 and 3a

2. The third osteotomy is made at 45 degrees parallel to the posterior facet of the subtalar joint on imaging. Figure 3b and 3c

3. Soft tissue closure without tension

Case Report

This is a 62-year-old male with past medical history of diabetes, dyslipidemia, periprosthetic vascular disease, and chronic bilateral heel ulcers (figure 2). He underwent his right heel debridement and a percutaneous tendo-Achilles lengthening before presenting to our institution with non-union healing at right heel, MRI with 50% signal change and hematoma size 6 x 7 cm. The culture was positive for Mycobacterium and at the time of his presentation, he underwent a hemi calcanectomy which was absolutely the local surgeon to meet medical and surgical interventions to address soft tissue infection and to avoid the osteomyelitis of the calcaneus as evident on x-ray. (Image 5a, 5b and 5c) Initial debridement lines included WDX of 10 and a temperature of 38 degrees Celsius. The patient underwent a reverse-flow vein-saphenous bypass, a vein, with pedicled iliac and posterior inferior artery. All other veins and veins were unremarkable. The patient underwent two debridements including initial partial resection of the calcaneus (figure 4a, 4b, 4c), and post-debridement cultures were obtained during each operation. Once post-debridement cultures were negative, the vertical calcanectomy was performed with weightbearing closed without tension (figure 5a and 5b). At the 16 month follow-up, the patient is ambulating in outpatient diabetic clinic with biopsy.

Literature Review/Discussion

Since the original operative technique was described by Guendels in 1961 (1) to treat heel ulcers complicated by OM or non-union healing at the heel, the literature on this surgical technique has been published. The calcanectomy procedure can be varied in function to assist with the improvement of edema and ulceration, and is often performed in a multi-disciplinary approach as an alternative to a below knee amputation. The calcanectomy procedure has been portrayed as a viable alternative to below knee amputation (2-4). Currently, however, the literature on the surgical technique for partial calcanectomy reports a wide degree of variance regarding healing rates, re-operation rates, major amputation rates and postoperative mobility. (5, 6).

The VCC technique as an alternative to the conventional partial calcanectomy is important. The degree of anterior involvement of the calcaneus can predictly guide the surgical aggressiveness of the resection. In our case, the calcanectomy was able to be extended lateral to the medullary canal of the calcaneus (9). The authors of this poster advocate this novel surgical technique as an alternative to the conventional partial calcanectomy procedure to achieve the same overall results. The authors of this poster advocate this novel surgical technique as an alternative to the conventional partial calcanectomy procedure to achieve the same overall results. The authors of this poster advocate this novel surgical technique as an alternative to the conventional partial calcanectomy procedure.

REFERENCES