



Technical Note

Resection osteotomy for calcaneus flattening after micro-surgical flap: technical note[☆]

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ABSTRACT

An open fracture of the calcaneus with loss of substance is a challenging injury and requires specialized care, involves high costs, and demands attention despite its lower incidence. The main complications are osteomyelitis, pressure ulcers, and fistulas, as well as pain conditions in the lateral, medial, and plantar regions. This is due to the wide loss of tissue and the change in anatomical conformation of the calcaneus in some cases. However, in cases of flattening of the calcaneus bone, these complications may be prevented or treated successfully. This technical note describes the resection osteotomy technique for calcaneus flattening to prevent and treat complications after micro-surgical flap in cases of open fracture or loss of substance.

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Osteotomia de ressecção para aplinamento do calcâneo após retalho microcirúrgico: nota técnica

RESUMO

A fratura exposta do calcâneo com perda de substância é uma lesão desafiadora, demanda cuidados especializados, envolve elevados custos e exige atenção, apesar de sua menor incidência. As principais complicações são osteomielite, úlceras de pressão, fistulas, além de quadros algícos nas regiões lateral, medial e plantar. Essa relação se deve à grande perda de tecido e à mudança da conformação anatômica do calcâneo em alguns casos. Porém, quando ocorre uma modelação do formato ósseo do calcâneo com seu aplinamento, essas complicações podem ser prevenidas ou tratadas com sucesso. O objetivo desta nota técnica é

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descrever a técnica de osteotomia de ressecção para aplainamento do calcâneo na prevenção e no tratamento de complicações após retalho microcirúrgico em casos de fratura exposta ou perda de substância.

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Introduction

Open fractures of the calcaneus classified as Gustilo and Anderson type III¹⁻⁴ are associated with short- and long-term complications. The main complications are infections, pain and fistulas or pressure ulcers in the topography of the lower calcaneal tuberosity, even after myocutaneous covering with vascularized flaps, which can be observed in up to one-third of cases.⁵⁻¹¹

This is due to the extensive tissue loss and to changes in the shape of the calcaneus in some cases. However, in cases of flattening of the calcaneus bone, these complications may be successfully prevented or treated.

The purpose of this note is to describe a resection osteotomy technique for calcaneus flattening, aiming to prevent and treat complications after microsurgical flap in cases of open fracture or tissue loss.

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The steps of the proposed surgery are:

- (1) Resection of ulcers and fistulas in the calcaneal region under the existing microsurgical flap; or preparation of the area for the flap that will be made (Fig. 1);
- (2) Resection osteotomy for calcaneus flattening in the posteroinferior tuberosity, avoiding areas of overpressure on the old or the new flap (Fig. 2);
- (3) Coverage with a microsurgical flap (Fig. 3).

Discussion

Open calcaneal fractures with loss of substance are challenging injuries that require specialized care, involve high costs,

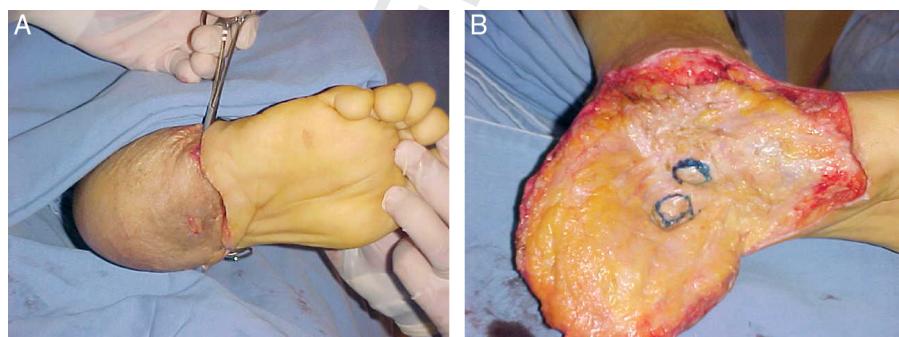


Fig. 1 – (A) Complication of calcaneal flap with plantar ulcer and fistula and (B) debridement of devitalized tissue and local preparation.

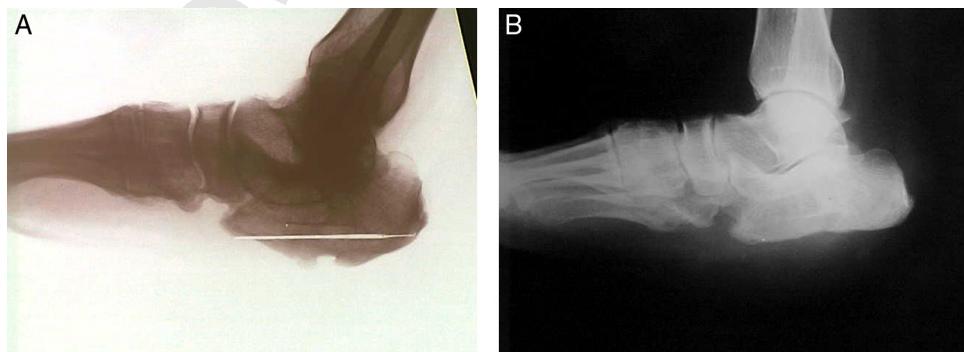


Fig. 2 – Lateral radiographs of the calcaneus. (A) Preoperative, with no evidence of osteomyelitis and areas of overpressure and (B) postoperative, highlighting the resection of the posteroinferior calcaneal tuberosity, correcting the deformities.

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