

Utilization of Antibiotic Collagen Sheet in an Open Calcaneal Fracture

¹Ibramsha MY; ¹Farahlina J ; ¹Mohd Iqbal HS; ¹Mohd Azhar A;

¹Orthopedic Department, Hospital Sultan Haji Ahmad Shah, Temerloh, Pahang, Malaysia.

INTRODUCTION:

Calcaneal fractures are uncommon, accounting for approximately 2%³ of the total number of fractures. Most fractures are associated with high velocity injury and poor soft tissue condition. All these predispose to the risk of deep infections and the risk of amputations. Subramaniam et al noted the use of antibiotic laden collagen sheet in open fractures reduced the occurrence of infection and leads to an uncomplicated union of fractures²

Open calcaneal fracture are rare but has the potential for serious complications. Wiersema¹ noted that open fractures of the calcaneum resulted in 9.6% superficial wound infection and 12.2 % deep infection. In their series, 5.2% of patients ended up with an amputation due to osteomyelitis or wound necrosis.

REPORT:

We report a case of a 35-year old man who was involved in a motor vehicle accident, he sustained an open calcaneal fracture over the foot and associated open right medial malleolus fracture.

The calcaneal fracture was a tongue type fracture with an open wound over the posterior aspect of the right heel with contamination of the injury. The patient underwent surgical debridement and screw fixation of the open calcaneal fracture at 20 hours post injury. Prior to closure of the wound, an antibiotic laden collagen sheet was inserted at the posterior heel area.

The patient completed a 7-day course of Cefuroxime and Gentamicin and was discharged well. Follow up to 6 months post op noted no incidence of deep or superficial infection and the patient was able to return to work.



Figure 1: Open wound showing calcaneal fracture



Figure 2: Post operative radiographs

CONCLUSION:

In our patient, we feel that antibiotic laden collagen sheet played a role in the prevention of a deep bone infection in open calcaneal fracture. However, prompt antibiotic therapy and emergency wound debridement and fracture stabilization must not be neglected in order to prevent any further morbidity and complications for the patient.

REFERENCES:

1. Wiersema B, Brokaw D, Weber T, et al. Complications Associated with Open Calcaneus Fractures. *Foot & Ankle International*. 2011;32(11):1052-1057.
2. Subramaniam, K. ., & Ahmad, . A. C. . (2018). Efficacy of Antibiotic Laden Collagen Sponge In Treating Open Fracture. *IIUM Medical Journal Malaysia*, 17(1).
3. Dhillon M.S., Bali K., Prabhakar S. Controversies in calcaneus fracture management: a systematic review of the literature. *Musculoskelet Surg*. 2011;95(3):171-181