

Medical Education Series

Fracture Related Infection - Pilon Fracture

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Fracture Related Infection - Pilon Fracture

PATIENT HISTORY

A 35 year old fit and well female patient presented to the emergency department with 4 week old left ankle closed pilon fracture which was treated with internal fixation. She was treated initially with an external fixator and 4 days later underwent definitive open reduction and internal fixation of her fracture. Postoperative she had wound dehiscence and had grown Enterobacter in her wound, she was treated with IV antibiotics and a VAC dressing.

DIAGNOSIS

Radiographs of her ankle demonstrated malreduction and fracture gapping of the articular surface. Physical exam revealed a 4.5cm anterior pretibial wound with serosanguinous drainage and exposed anterior tibial tendon and hardware. Additionally, the patient had a stage 1/2 pressure wound to her heel.

CULTURE

Gentamicin Sensitive Enterobacter cloacae

TREATMENT PLAN

Reconstruction commenced with irrigation and debridement, removal of hardware, antibiotic cement beads and application of a uniplanar external fixator with wound vac. She subsequently underwent serial debridements with new antibiotic beads and VAC changes. Once the wound bed was clean, she then had a repeat ORIF with 10ml of CERAMENT® G with Gentamicin, followed by an anterolateral thigh (ALT) free flap by plastic surgery to cover the pretibial wound. Postoperatively, her fracture and free flap healed with no concern for continued infection.



Pre-op: Radiographs demonstrate prior ORIF to the distal tibia with malreduction. Distal tibia intra-articular fracture demonstrates diastasis with medial column collapse and varus alignment of the ankle. Fibula demonstrates prior ORIF with apex posterior malreduction.



Pre-op: Clinical examination of the left ankle upon initial presentation to the emergency department. There is a 4.5cm anterior pretibial wound with exposed anterior tibial tendon. Previous nylon sutures in place for fibula fixation. There is a stage 1/2 pressure wound to the heel.



Intra-op: Fluoro images after final reconstruction with CERAMENT G in place.



Post-op: 6 week post-op radiographs demonstrating healing and consolidation of the CERAMENT G.



Post-op: Three-month post-operative radiographs demonstrate bone remodelling, neutral alignment and intact hardware to the tibia. Vascular clips present.

Advancing Osteomyelitis Management

- Bone remodeling to promote and protect bone healing
- Local antibiotic elution that is safe, consistent and clinically significant¹



¹ Stravinskas et al. 'Pharmacokinetics of gentamicin eluted from a regenerating bone graft substitute - In vitro and clinical release studies'. Bone Joint Res. 2016; 5:427-435

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