

Medical Education Series

Fracture Related Infection - Tri-malleolar Fracture

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Fracture Related Infection - Tri-malleolar Fracture

PATIENT HISTORY

A 70 year old male with a medical history of hypertension, presented 7 weeks post-operatively. He had an arthroscopy assisted, open reduction and internal fixation of his trimalleolar fracture with syndesmotic stabilisation. He reported increasing tenderness to the medial ankle, along with erythema and warmth over the previous week. The absence of signs of radiographic healing was observed with respect to the medial malleolus. Elevated WBC count and elevated inflammatory markers including ESR and CRP. No documented systemic signs and symptoms of sepsis.

DIAGNOSIS

Fracture related infection of the medial malleolus.

TREATMENT

Patient underwent irrigation and debridement of the former fracture site, with removal of metalwork. Intra-operative samples were taken for culture and pathology. The bone void was filled with CERAMENT® G with Gentamicin, and the fracture was fixed with an absorbable bio-composite screw.

HARDWARE

Ossio 4.0 Headless Bio-integrative Compression Screw.

CULTURE

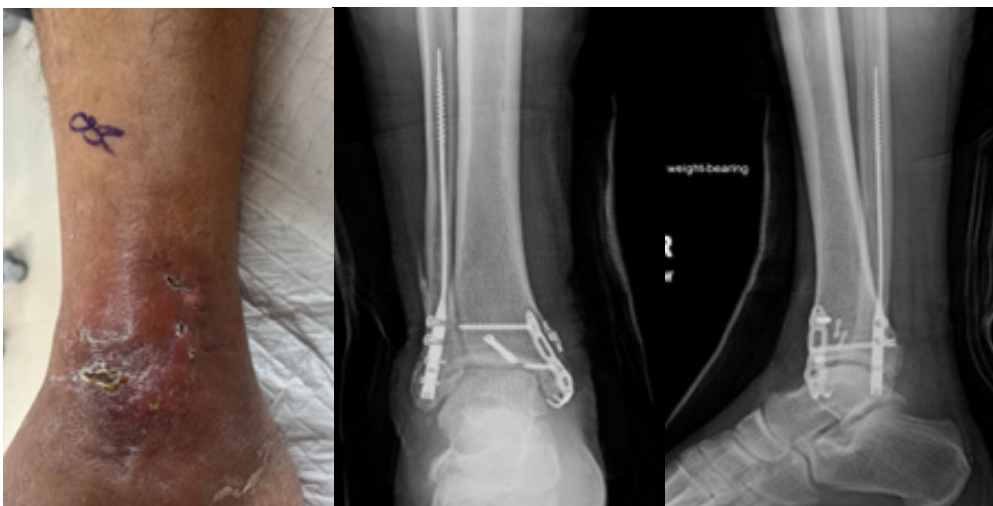
Multi-organisms, including MRSA (Methicillin-resistant Staph. aureus).

SYSTEMIC ANTIBIOTICS

Flagyl 500mg and Diflucan 200mg for 1 week. Daptomycin 600mg IV for 6 weeks.

OUTCOME

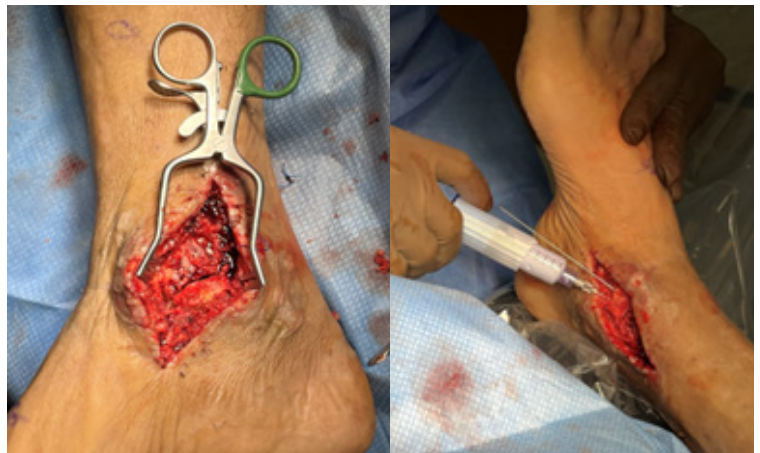
Medial malleolar union at 8 weeks postoperative, without recurrent infection. Painless weightbearing in an ankle brace recorded during formal physical therapy. Inflammatory markets included WBC count, ESR and CRP have returned to normal.



Pre-op: Infected former fracture site.



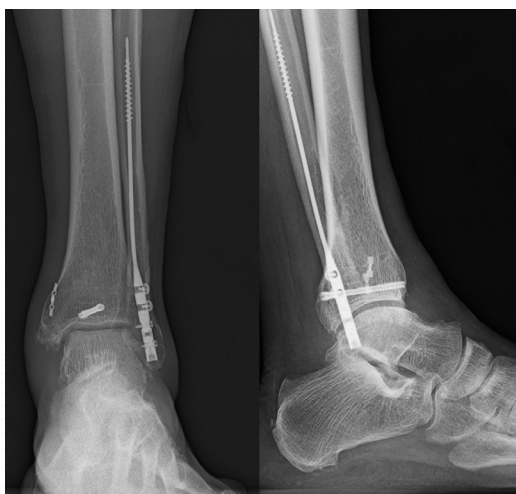
Intra-op: Bone void from hardware removal filled with CERAMENT G and insertion of absorbable screw.



Intra-op: Hardware removal and debridement of former fracture site.



Post-Op: 8 weeks. Medial malleolar union without recurrence of infection.



Post-Op: 6 month follow up patient is healed and void is fully remodeled.

Advancing Osteomyelitis Management

- Bone remodeling to promote and protect bone healing¹
- Local antibiotic elution that is safe, consistent and clinically significant²



1. Ferguson et al. 'Radiographic and Histological Analysis of a Synthetic Bone Graft Substitute Eluting Gentamicin in the Treatment of Chronic Osteomyelitis'. J. Bone Joint Infect. 2019; 4(2): 76-84.

2. Stravinskis 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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