CERAMENT® G
with Gentamicin

CASE REPORT

Medical Education Series

Staged Charcot Foot Reconstruction

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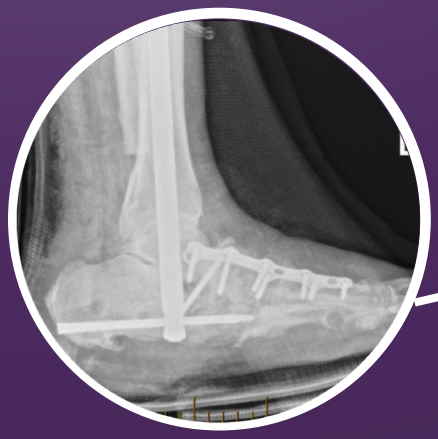


BONESUPPORT™

STAGED CHARCOT FOOT RECONSTRUCTION

PATIENT HISTORY

A 55 year old male presented with a background of uncontrolled type 2 diabetes, with a charcot foot and diabetic foot osteomyelitis. The foot had a long history of infection secondary to chronic non-healing diabetic foot ulcers. The patient had previously been managed with failed attempts at primary wound closure and using a Charcot Restraint Orthotic Walker boot. He additionally had serial debridements and failed skin grafts over many years.

DIAGNOSIS

Diabetic foot osteomyelitis and Charcot neuroarthropathy.

TREATMENT

The patient was required to have a HbA1c of <8.0% prior to surgery. Arterial doppler revealed triphasic waveforms with no hemodynamical significant stenosis.

The patient was advised that Charcot reconstruction would be staged:
Stage 1: Extensive wound debridement with washout, bone biopsies, percutaneous achilles lengthening, midfoot gigli saw osteotomy, application of multiplanar external fixator, wound vac application.
Stage 2: Weekly office visits for skin graft applications with wound vac changes over the course of 3 months. Note: long delay between stages was due to patient transportation issues and continued use of Ozempic.
Stage 3: Wound closure documented prior to last stage: Removal of external fixator , Tibiotalocalcaneal (TTC) arthrodesis, 10cc's of CERAMENT® G with Gentamicin injected into tibial canal using FlowFX™ 2-CAN® system and Medial column arthrodesis.

CULTURE

Wound culture: Acinetobacter Pittii (Treatment: Oral Bactrim DS for 14 days).
Bone pathology: Positive for osteomyelitis.

SYSTEMIC ANTIBIOTICS

IV Vancomycin and Cefepime for 3 days (Stage 1 was inpatient surgery).
Discharged home on Doxycycline 100mg oral, twice a day for four weeks.

HARDWARE

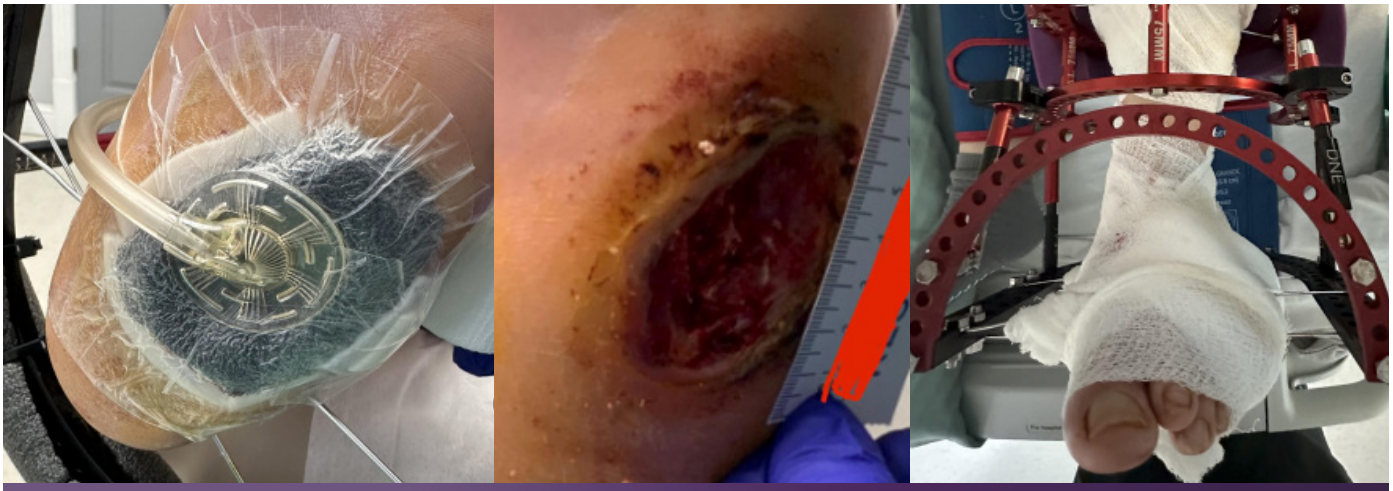
Stage 1: Enovis EF1 circular frame.
Stage 3: Enovis TTC Dynanail and Fusion Orthopedics medical column plate.

PATIENT POST-OPERATIVE TIMELINE

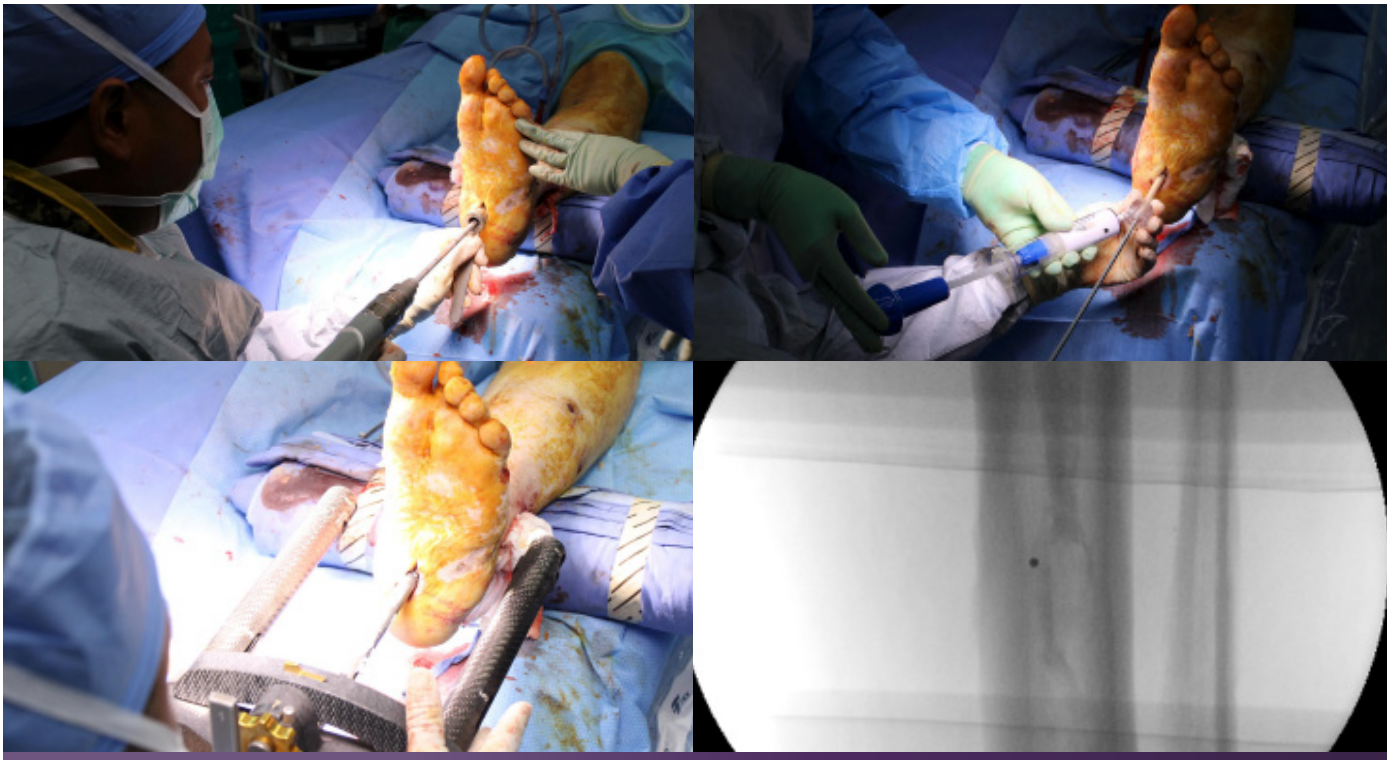
Subsequent wound cultures obtained in the office were negative. The patient will remain strict non-weight bearing for 6-8 weeks before transitioning to a protected weight bearing in CAM boot while beginning formal outpatient physical therapy. Patient will be fitted for a custom brace and DM shoe once transitioned to protected weight bearing. The goal is for the patient to be fully weight bearing with brace and DM shoe by 3 months post-op.

ADDITIONAL DELIVERY DEVICES

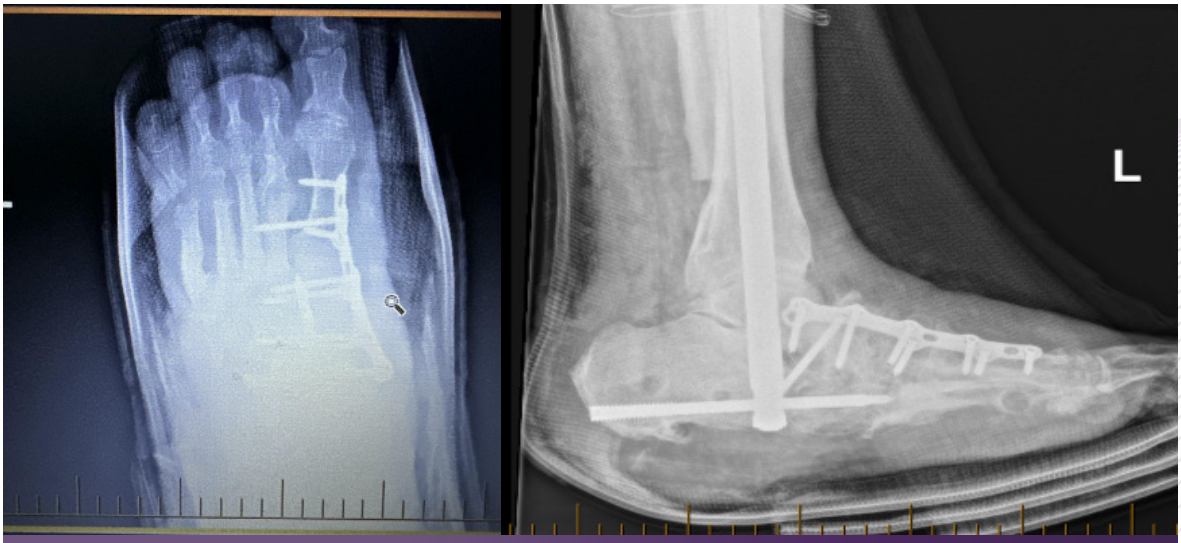
FlowFX 2-CAN



Pre-op images: Wound immediately after stage 1 (with and without wound vac).



Intra-op: Final stage of charcot reconstruction with TTC nail and utilization of 2-CAN to inject CERAMENT G into tibial canal and live fluroscopy of the injection of CERAMENT G.



Post-op: Images are immediately post-op showing TTC nail and medial column plate.

Advancing Osteomyelitis Management

- Bone remodeling to promote and protect bone healing[1]
- Local antibiotic elution that is safe, consistent and clinically significant[2]

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. 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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