

CERAMENT® G
with Gentamicin

CASE REPORT

Medical Education Series

Fracture Related Infection of the Tibia

Dr. Scott Sandilands, D.O.

HCA Florida Kendall Hospital

Level 1 Trauma Center

Miami, FL



FRACTURE RELATED INFECTION OF THE TIBIA

PATIENT HISTORY

A 46-year-old man sustained open Gustilo-Anderson IIIB tibial and fibular shaft fractures due to a motorcycle accident. Initial management at an outside hospital included I&D, intramedullary nailing of the right tibia, and primary closure of his medial tibial shaft open wound. 5 months after initial surgery, the patient developed a Fracture Related Infection and presented to the institution for further care.

DIAGNOSIS

Fracture related infection of the tibia with non-union.

TREATMENT

Patient presented with a grossly infected tibia with pus including in the intramedullary canal. Hardware was removed followed by irrigation and debridement of the tibial wound and intramedullary canal. A PMMA nail containing Tobramycin and Vancomycin was inserted into the canal. A second irrigation and debridement of the right tibia and intramedullary canal was performed followed by the injection of 20ccs of CERAMENT® G with Gentamicin directly into the intramedullary canal. A second PMMA Nail with Tobramycin and Vancomycin was also implanted. The soft tissue was covered with a gastrocnemius flap. Patient was treated with culture specific IV antibiotics for 6 weeks, followed by a 2-week antibiotic holiday. After the 2-week antibiotic holiday, the patient underwent flap elevation and right tibia open biopsy. The biopsies were all negative. 1 week later the patient underwent final reconstruction of his tibia. In this final procedure, the PMMA nail was removed and 10ccs of CERAMENT G was injected into the tibial canal using the Flow-FX™ 2-CAN®, and another 10ccs of CERAMENT G was injected into the area where osteomyelitis was seen on imaging. After a total of 20ccs of CERAMENT G was injected, a final intramedullary nail was placed in the area of concern.

HARDWARE

- Intramedullary Nail

OPTIONAL DELIVERY DEVICES

- Flow-FX™ 2-CAN®

CULTURES

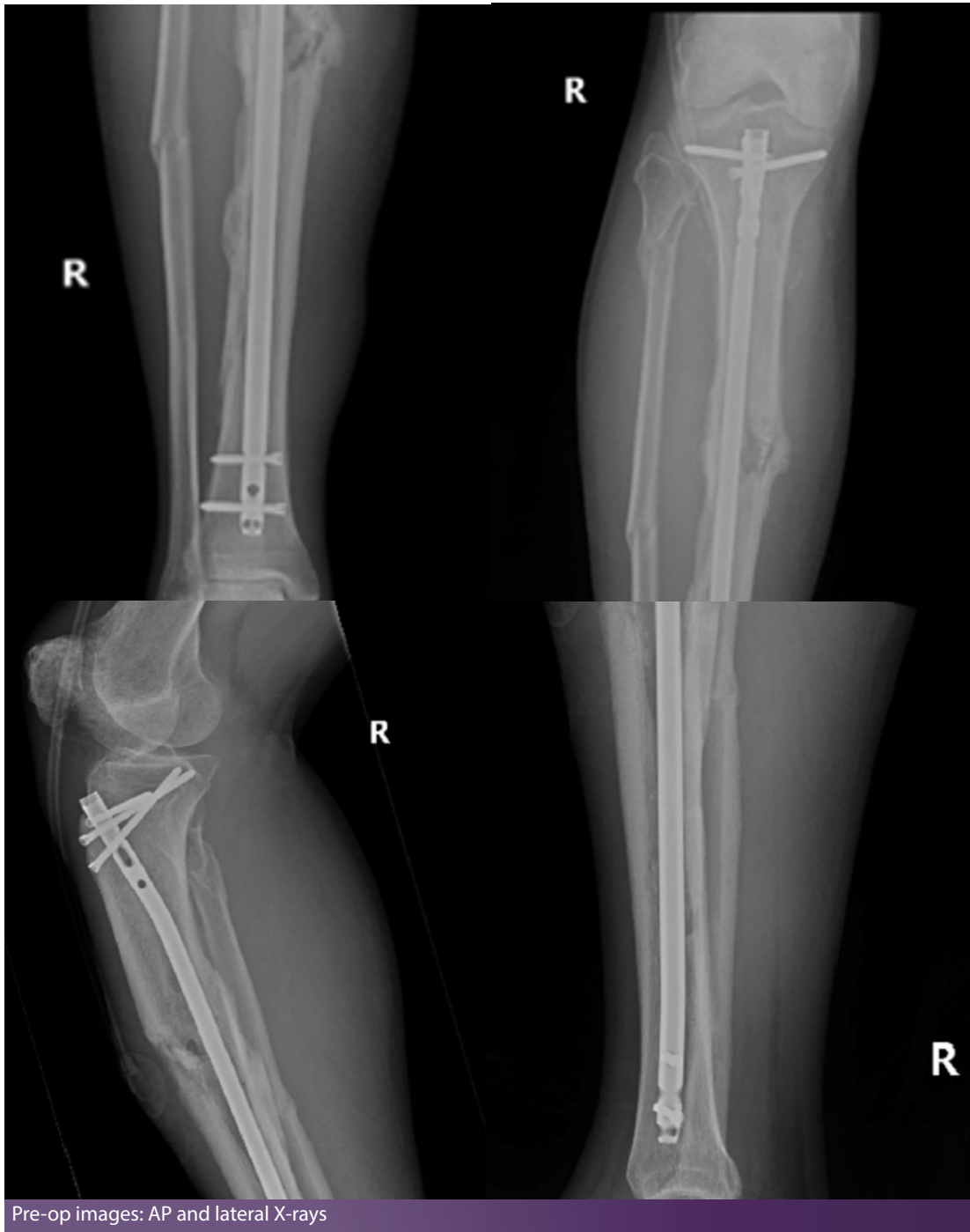
- Pseudomonas aeruginosa
- Proteus mirabilis

SYSTEMIC ANTIBIOTICS

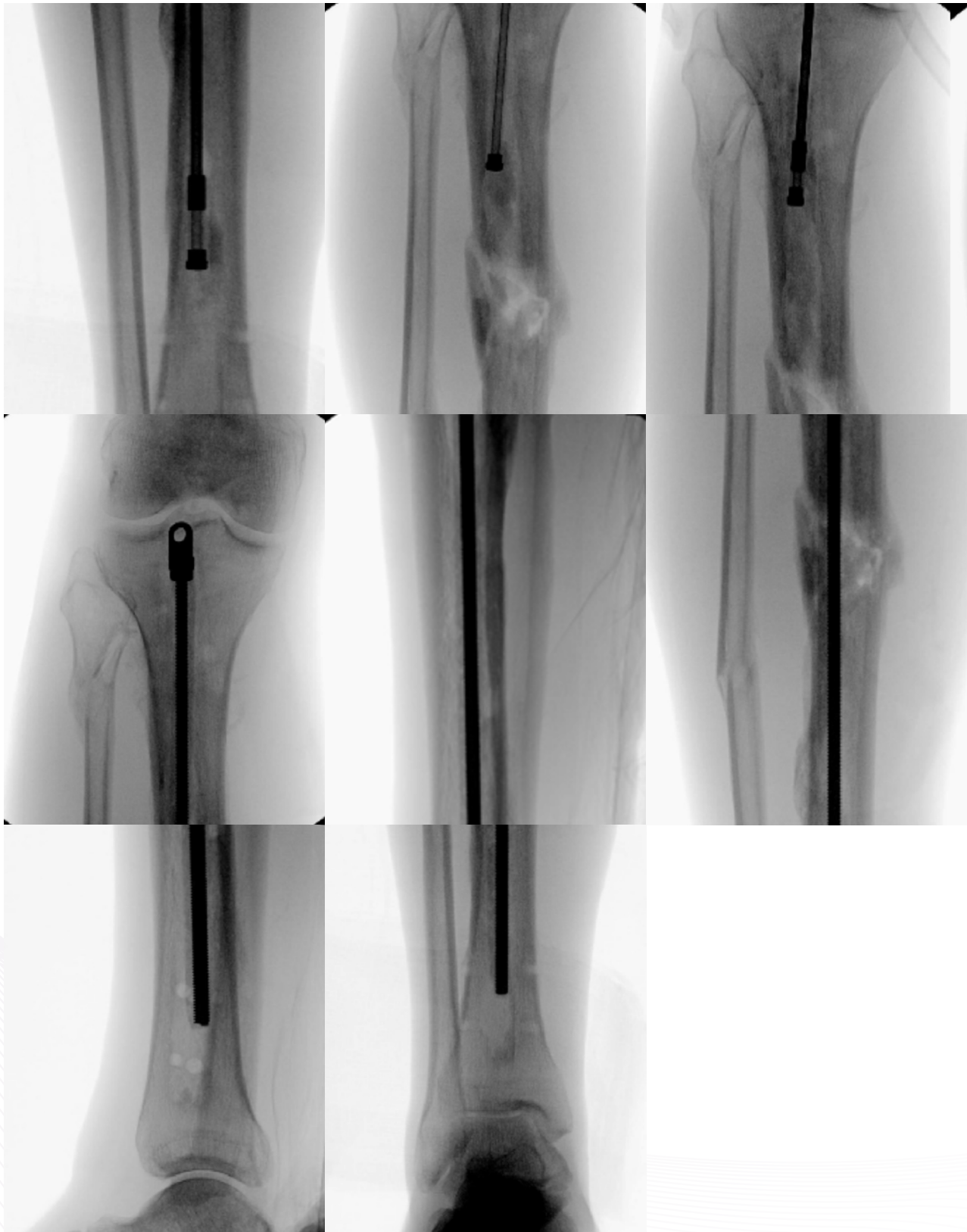
- Ertapenem for 6 weeks

OUTCOME

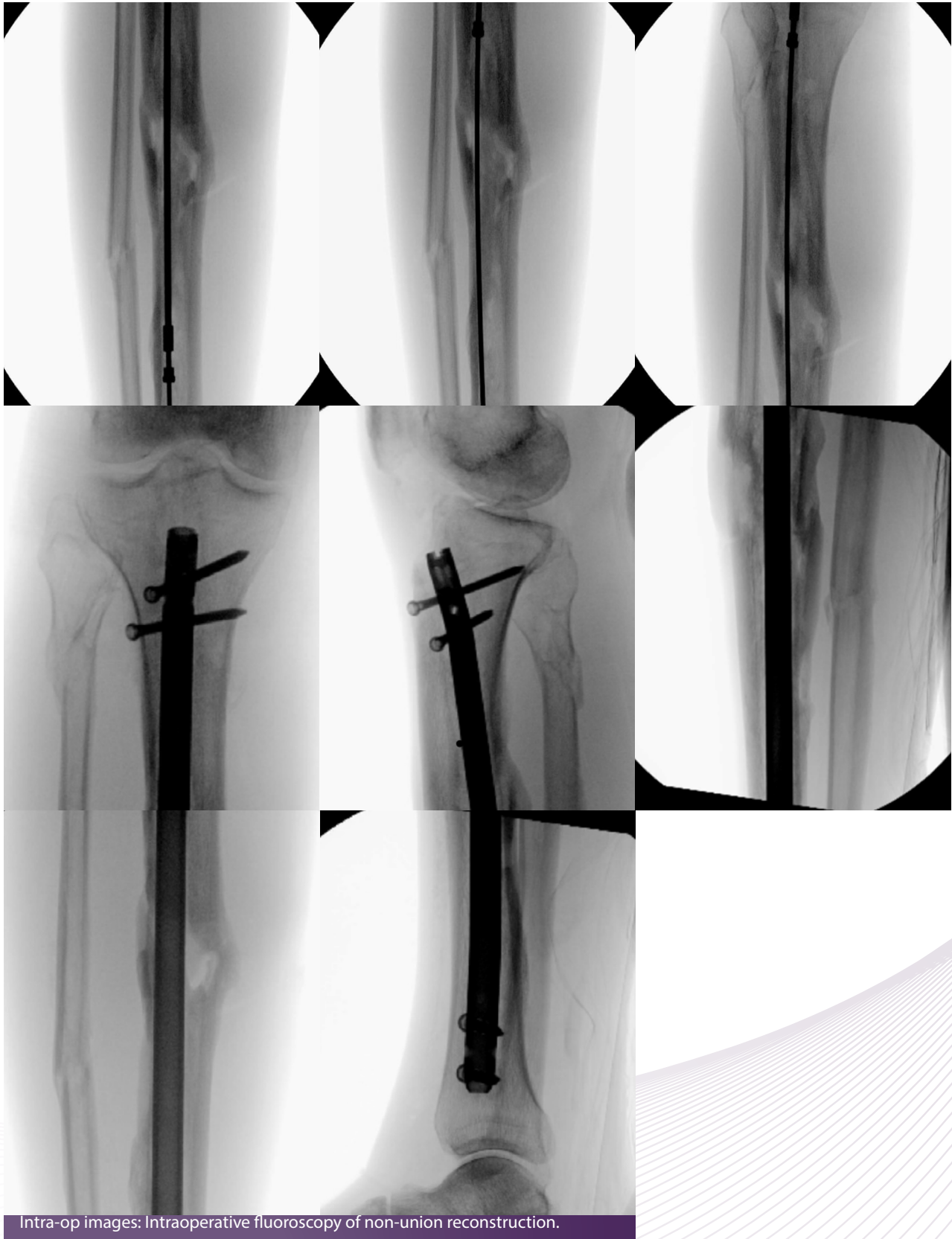
13 months post-operatively the patient is mobilizing well, and is back to his baseline function. He has returned to work and the gym.



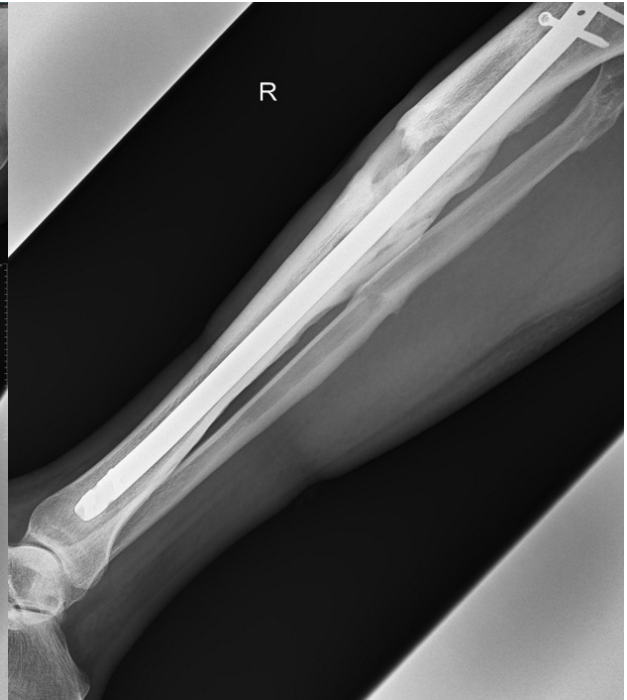
Pre-op images: AP and lateral X-rays



Intra-op images: Intraoperative fluoroscopy of second I&D with antibiotic PMMA nail.



Intra-op images: Intraoperative fluoroscopy of non-union reconstruction.



Post-op images: 1 year follow up; Patient remains pain-free without drainage and capable of full weight bearing with radiographic union of his tibia and has returned to work and the gym.

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. 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

TO ORDER

order@bonesupport.com



BONESUPPORT AB
Ideon Science Park,
Scheelevägen 19
SE-223 70 Lund, Sweden

BONESUPPORT, INC.,
117 Fourth Ave, Suite 202
Needham, MA 02494

T: +46 46 286 53 70
F: +46 46 286 53 71
E: info@bonesupport.com

T: +1.877.719.6718
E: us.sales@bonesupport.com
W: bonesupport.com



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