Polytrauma Case Review

Kore Fiber® Evaluated in Distal Femur Fracture

Joshua Napora, MD

Case Highlights

- 22-year-old male
- Motor vehicle accident polytrauma
- RIA bone and Kore Fiber used to treat left distal femur fracture
- Time to union was ~3 months

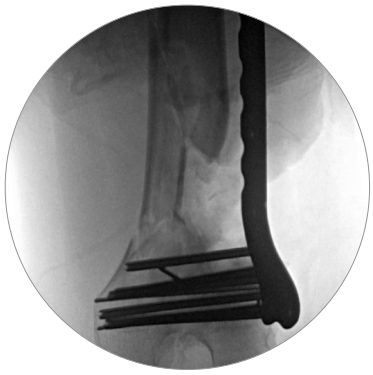
Clinical Presentation

A 22-year-old healthy male presented with polytrauma due to a motor vehicle accident. A large distal femur fracture required biological augmentation. This case study evaluated the radiographic and clinical outcomes of an aseptically processed 100% demineralized bone fiber (DBF), Kore Fiber (processed by MTF Biologics®, Edison, NJ; distributed by Kolosis BIO™, Salt Lake City, UT), to augment the treatment of the large distal femur fracture. Preclinical evaluation of DBF demonstrated enhanced osteoconductivity compared to traditional particulate DBM due to the unique fiber architecture.[1] Moreover, a recent pre-clinical study evaluated the osteoinductive properties of Kore Fiber compared to other commercial DBMs. Kore Fiber consistently formed bone in an athymic ectopic mouse model.[2] This case study was conducted to determine the effect of this tissue-form on clinical and radiographic outcomes.

Surgical Procedure

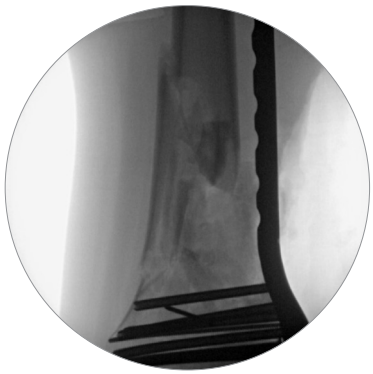
The patient's left distal femur fracture was treated with open reduction internal fixation. A Masquelet technique (temporary cement spacer with antibiotic beads followed by staged bone grafting) was used. After removal of the antibiotic beads, 30cc of harvested reamer irrigation aspirate (RIA) bone graft from the contralateral leg was mixed with 30cc of Kore Fiber.

Initial Debridement



Bone Void at Definitive Fixation

Masquelet with PMMA



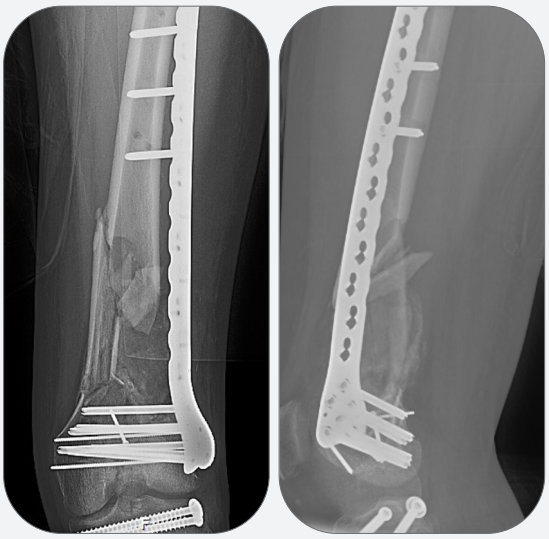
PMMA Spacer Removed & RIA Bone Graft with Kore Fiber Added to Defect

Clinical Outcome

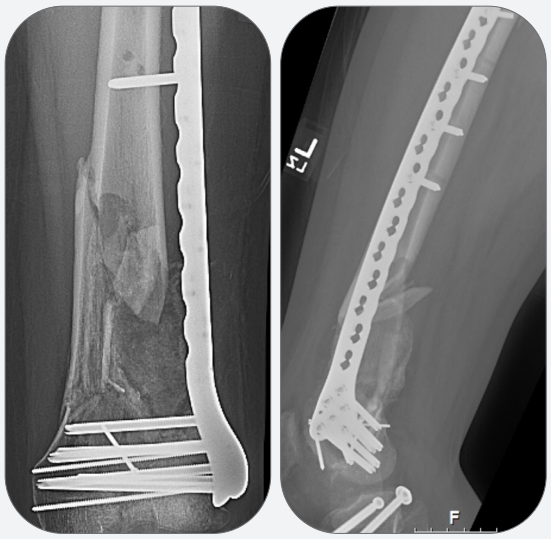
The patient was instructed to be non-weight bearing for three months. He was not compliant with physical therapy, which resulted in stiffness and restricted range of motion. He underwent two manipulations under anesthesia over the next several months. By final follow-up at 10 months, the patient reported no pain and had 0-110 range of motion on the left side.

Radiographic Outcome

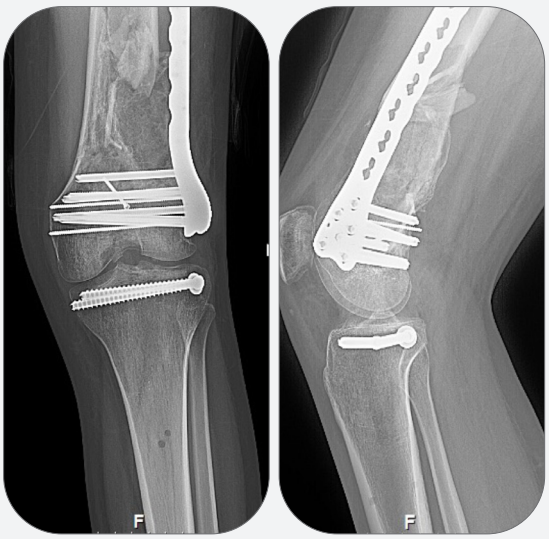
6 Weeks



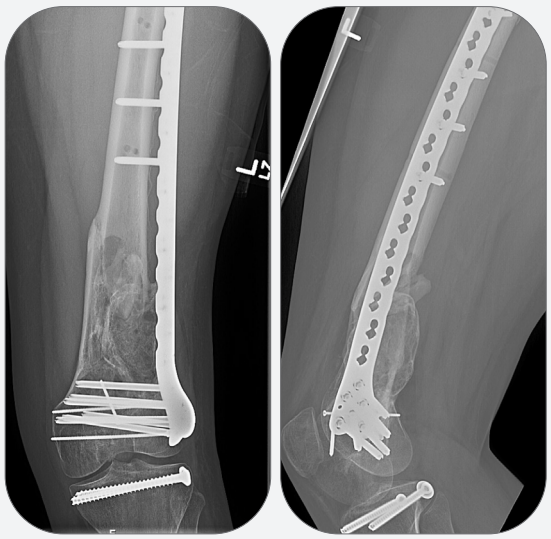
3 Months



5 Months



10 Months



References

1. Martin et al. 1999 SPINE
2. McAllister M, Semler E. MTF Biologics 2020 White Paper.