



KYOCERA Medical Technologies, Inc.

BIOCERA

FIBERS

The only biosynthetic scaffold with
electrospun microfiber construction

CASE STUDY 04

SURGEON PROFILE

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Patient Profile

History of Present Illness: A 60-year-old woman presented with severe pain in her right leg after sustaining a fall. She had previously undergone a total knee replacement on the same leg.

Diagnosis: Radiography of the patient's right leg (Figure 1) revealed a comminuted supracondylar femoral fracture.

Treatment

The patient underwent open reduction and internal fixation of the right supracondylar femur fracture. She received general anesthesia and an anterior lateral approach to the distal femur was used to extend through the subcutaneous tissue. A large tear and penetration of the major proximal bone fragment through the quadriceps tendon were evident; this opening allowed easy access to the femur.

The patient's prior total knee replacement was identified, and the arthrosis was removed. Severe comminution was observed at the anterior cortex of the area, just proximal to the total knee replacement. There was, however, a very large maintained bone attachment to the femoral knee implant, which allowed for application of a supracondylar distal plate. The patient's wounds were thoroughly irrigated and the fracture was reduced. A multi-hole, supracondylar plate was inserted into the surgical field, with multiple bicortical screws placed both proximally and distally; excellent position and alignment of the plate were confirmed.

The patient had a large defect in the anterior cortex of the supracondylar area. To ensure bone growth, 75 cc's of BioCera Fibers bone void filler were injected, and the comminuted pieces of bone were rearranged to cover the BioCera Fibers to foster the creation of new bone.

The wound was thoroughly irrigated and a Hemovac was placed. The incision was closed with #1 Ethibond, 0 Vicryl, and skin staples. Gauze and a light compression dressing were applied, and a long knee immobilizer was placed. The patient was returned to the recovery room in stable condition.

Case Study

Not approved by the FDA for the above indication.

Postoperative Course

Radiographic study obtained at 6-week follow-up demonstrated excellent bone growth, particularly in the area where BioCera Fibers were used (Figure 2).

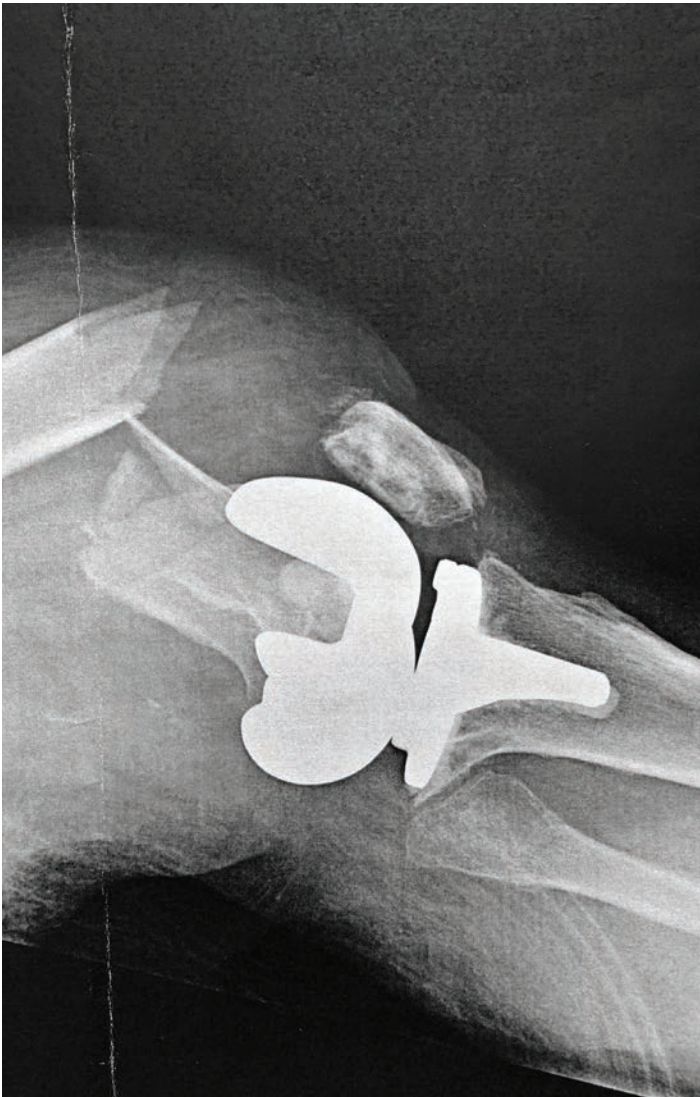


Figure 1. Preoperative radiograph demonstrates a comminuted supracondylar fracture of the right femur.



Figure 2. Postoperative radiograph shows robust growth of new bone at surgical site.



ELECTROSPUN MATRIX

Composed of β -TCP, CaCO₃, silicon and PLGA.
Contains 0.5% to 1% silicon by weight, which is
comparable to the level found in natural bone.



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