

Surgical Case Study

Distal Fibula Fracture

Distal Fibula Fracture Treated with Flex-Thread Intramedullary Nail in Setting of Distal Tibial Pilon Injury

Case Report

The patient is a 24 y/o pleasant female who sustained an axial-loaded fall resulting in a type B intra-articular pilot fracture with associated fibular fracture (Fig.1). After extensive discussion with the patient and outlining risks versus benefits, decision was made to move forward with surgery in staged fashion secondary to significant edema. She was admitted to hospital and external fixation application was scheduled next morning to permit soft tissue stabilization and to obtain CT scan for fracture mapping for definitive reconstruction (Fig 2).

Surgical Technique

Patient was brought to OR 3 weeks later after seen in outpatient clinic weekly until soft tissue permitted. She was non-weight-bearing in external fixator during this time.

At time of definitive reconstruction, the patient was positioned supine with ipsilateral hip bump and leg elevated with blankets. Direction was first brought to the distal fibula where 2cm incision was created, fracture reduced, and guide wire inserted medial to distal tip of fibula and advanced after confirmation of placement via multiplanar image intensification.

The nail was clearly an appropriate choice as reconstruction of the distal tibia was warranted. The nail minimized soft tissue insult, but ensured anatomic length, rotation, and alignment of fibula to aid with realignment of distal tibial plafond.



Figure 1

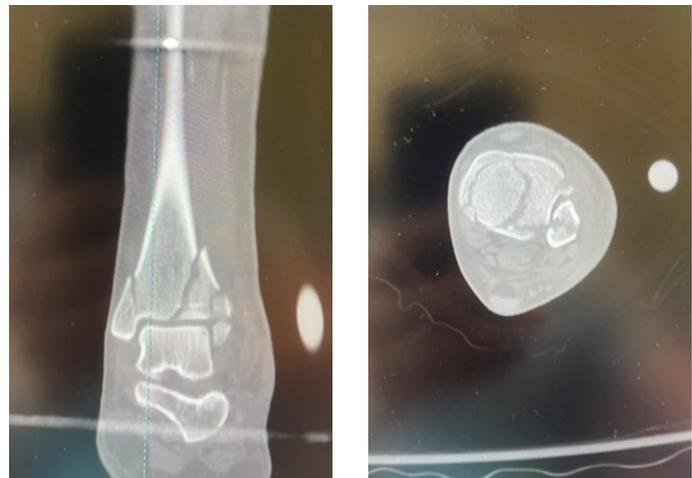


Figure 2



Surgical Technique *continued*

The surgeon began with 3.2mm drill followed by opening reamer; this provided operative flexibility if intra-operative conditions precluded further commitment to IM nail. A 3.5 x 130 IM Nail (Conventus Flower Flex-Thread®) was then chosen following observation of excellent endosteal resistance with 3.2mm drill. Distal interlocking screws were then placed through the targeting guide. The distal tibia was then addressed with an anterolateral and direct medial approach (Fig 3).

Postoperative Rehabilitation Protocol

Patient was non-weight-bearing for a total of 6 weeks. The first 2 weeks were in a posterior splint with sugar tong until suture removal at 2 weeks. Patient was then transitioned to a CAM boot at that time to allow passive ankle joint exercises. At 6 weeks following surgery, patient began progressive loading with physical therapy in CAM boot and at 10 weeks post-op transitioned fully to a Trilok ankle brace.

Follow-up Outcome

Post operatively, patient had expected post operative pain managed with multi modal pain control. At 3 months, patient had no pain and appropriately weight bearing in regular shoes with ankle brace. At 4 months, she was back to work full time as a teacher. Her 3-month films are seen in figure 4.

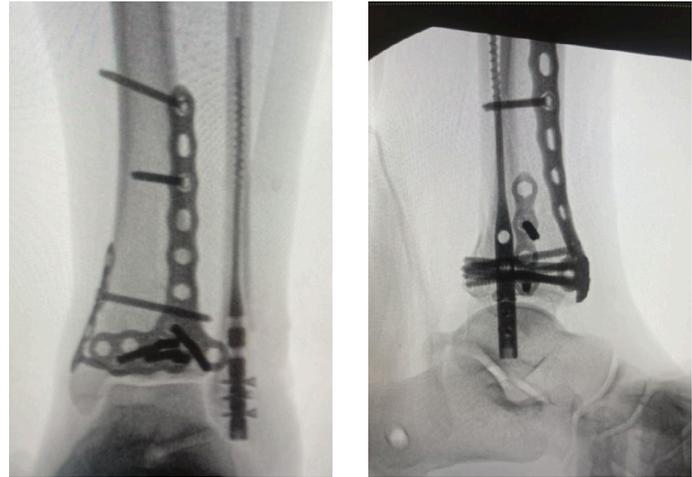


Figure 3

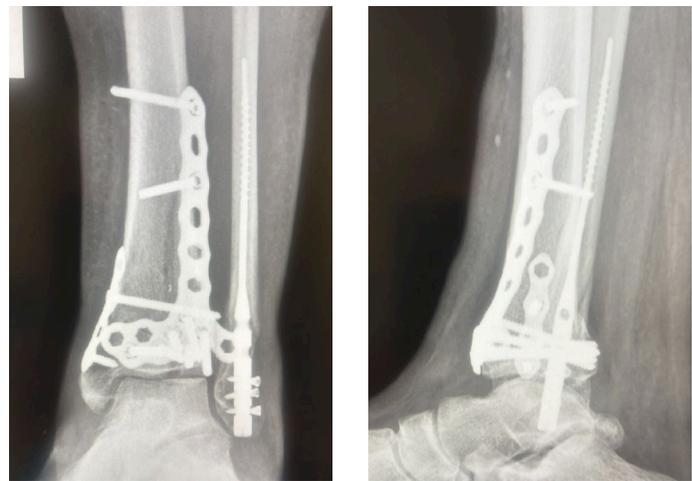


Figure 4

Summary

This case demonstrates clear advantages of the Flex-Thread Distal Fibula Nail System versus conventional plating. Mainly: (a) small incisions to avoid unnecessary soft tissue insult when distal tibial reconstruction warranted, (b) anatomic and stable mortise with no fibula shortening, (c) flexible design for easy placement conforming to patients' individual fibular anatomy, (d) secure fixation proximally with threads, and (e) distally with zero profile locking screws.



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