

Case Study

Use of the INnate™ Intramedullary Threaded Nail to Treat Open Left Distal Ulnar Shaft Fracture



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Dr. Dane Daley, a graduate of East Tennessee State University College of Medicine, completed a hand fellowship while at OrthoCarolina. He specializes in orthopedic and hand surgery.

Case Presentation

A 34-year-old right-hand dominant male presented status post gunshot injury to left wrist with open ballistic distal ulna shaft fracture with associated ulnar artery, ulnar nerve, multiple flexor tendon injuries, and soft-tissue wound. He was taken to the operating room that evening for surgical stabilization of the fracture and repair of the soft-tissue structures.

Preoperative Plan

Dane Daley, MD, elected for internal fixation of the distal ulna fracture with the INnate™ Intramedullary Threaded Nail given the soft-tissue injury, and the need for nerve and flexor tendon repairs.

Operative Findings and Approach

In the operating room, the fracture site was debrided and held in a reduced position while the guide wire was passed in a retrograde fashion through the ulnar head across the fracture site and into the ulnar shaft. This was performed with direct visualization through the gunshot wound and fluoroscopic guidance. The cannulated drill was then used over the K-wire, a size 4.5 mm x 75 mm INnate nail was selected and the threaded cannulated INnate was placed. The INnate nail was driven in until positioned beneath the articular surface, maintaining good purchase in subchondral bone. Proximal purchase was achieved with intracortical fit. The flexor tendons were then repaired at this time after skeletal stabilization and the ulnar nerve was tagged for later reconstruction allowing for evolution of the ballistic injury.

Follow-up

Postoperatively, he was splinted in a dorsal blocking short arm splint with occupational hand therapy at two weeks for flexor tendon rehabilitation. At approximately five weeks post injury, he was taken back to the operating room for ulnar nerve resection back to healthy nerve tissue and allograft nerve reconstruction. Postoperatively, he continued hand therapy with ongoing clinical follow-up. He healed uneventfully with 0/10 pain and full range of motion with ongoing observation for ulnar nerve recovery.

Preoperative



Postoperative



Six Months Postoperative Radiographs

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