Case Study:

Use of the InFrame™ to Treat a Transverse Fracture to the 5th Proximal Phalanx

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Dr. Christopher S. Klifto, a graduate of Carnegie Mellon and Rutgers-Robert Wood Johnson Medical School, specializes in Orthopaedics and Hand and Upper Extremity specialities at NYU-Hospital for Joint Diseases. His expertise lies in treating upper extremity arthritic conditions including joint replacements. Currently, he leads the Shoulder and Elbow Surgery division at Durham VA and also practices at Duke Orthopaedics/North Carolina Orthopaedic Clinic.

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Case Presentation

Patient was a 32-year-old female who sustained a transverse, proximal third fracture to the proximal phalanx of her left small finger after a trip and fall. The incident happened 10 days prior to her wedding date so she desperately wanted a percutaneous approach that would heal quickly without any swelling or extramedullary hardware on her left hand which could detract from her wedding.

Postoperative Plan

Upon anatomic reduction, Dr. Klifto inserted the dual-diameter guide wire across the fracture site from the radial proximal cortex to the ulnar distal cortex under fluoroscopy to stabilize the fracture and accurately align the desired final implant position. Next, he used the depth gauge to determine that a 26 mm Micro Nail was needed for the 5th proximal phalanx. The larger diameter of the guide wire was used to push the guide wire distally until the smaller diameter was across the fracture. He then implanted the cannulated InFrame Micro Nail until bicortical purchase was achieved at both the ulnar distal and radial proximal ends for rotational stability. X-rays confirmed anatomic reduction. Total surgery time was approximately 20 minutes.

Operative Findings and Approach

Dr. Klifto initially proposed K-wire fixation with immobilization, however, the patient stated that she could not have wires protruding from her wedding ring hand during the ceremony. Dr. Klifto recently heard about InFrame and decided it might be a good solution due to the minimally invasive approach, intramedullary hardware, and stable fixation. The 2.0 mm diameter design and robust length offering would enable him to achieve canal-fill and bi-cortical purchase, respectively. InFrame also included an innovative dual diameter guidewire that helped facilitate precise and efficient placement by removing the need for reaming and allowing the implant to be inserted over the trailing end of the guidewire with ease.

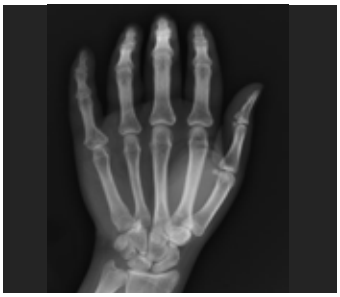
Follow-Up

Dr. Klifto achieved anatomic reduction and stable fixation with InFrame. At one week post-op, the patient had minimal swelling, no signs of infection, and full range of motion. On her wedding day, she was fully mobile and able to wear her wedding ring without issues.

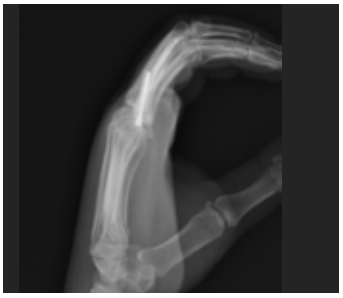
Discussion

The use of InFrame allowed Dr. Klifto to achieve his operative goals of using a minimally invasive approach without any extramedullary hardware, swelling, or pain. Dr. Klifto reported that the patient was ecstatic with her outcomes because her wedding and photographs moved forward as planned without any complications, which Dr. Klifto felt would have been difficult with other implants and surgical approaches.

Preoperative



Postoperative



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