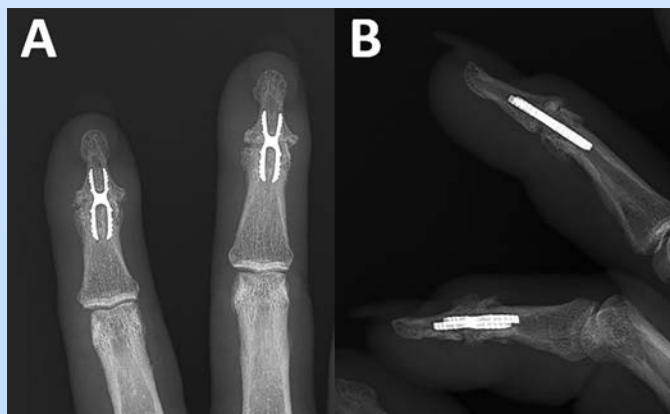


## ◆ Introduction and Objective

- Arthrodesis of the distal interphalangeal (DIP) joint of the fingers and interphalangeal (IP) joint of the thumb are common procedures for multiple diagnoses.
- The purpose of this study was to evaluate fusion rates and complications in patients who have been previously implanted with the X Fuse® Superelastic Implant.

## ◆ Methods

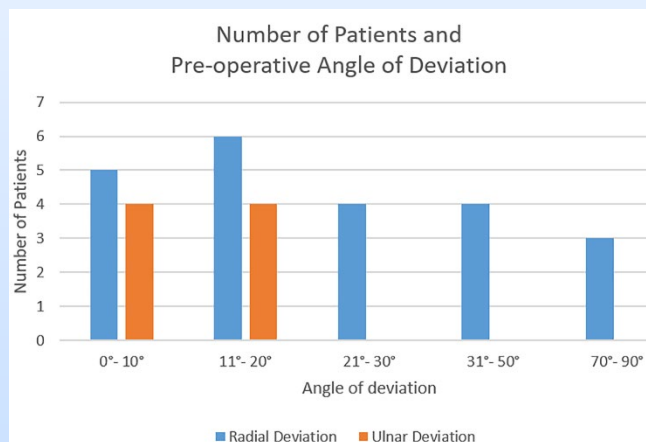
- From June 2013 - May 2019
- All patients who had a DIP and/or thumb IP joint fusion
- Data collected
  - gender
  - hand dominance
  - graft used
  - comorbidities
  - clinical recovery
  - absence of pain
  - functional use
  - implant type
- Pre- and post-operative radiographs were evaluated for angular deformity, post-operative correction of that deformity, bony consolidation, and tine cut-out.



A, B Postoperative anteroposterior and lateral images of the right hand demonstrate bone consolidation with the use of 0° angle standard size X Fuse implants in the index and long fingers.

## ◆ Results

- 53 patients (60 fingers)
- 43 females, 10 males
- Mean age 62.6 years (range 26-82)
- Surgical diagnoses
  - osteoarthritis (45)
  - rheumatoid arthritis (4)
  - psoriatic arthritis (1)
  - swan/mallet fingers (5)
  - trauma/fracture (3)
  - ulnar motor loss instability (2)



- Bone consolidation (defined as greater than or equal to 50% osseous bridging across the joint on plain radiographs) was observed in all but one patient at the average time of 9.7 weeks (range 4.1-17.6 weeks).

- All patients achieved appropriate correction of their pre-operative angulation except one that developed into a non-union.
- In this study, there was a 98% fusion rate, with only 1 (1.7%) nonunion, and minor complications were found in 21.7%, all of which resolved within the 90-day period, except cold sensitivity noted in 1 patient. There were no device-related adverse events or morbidity related to bone graft harvesting or the use of the demineralized bone graft.

## ◆ Conclusion

- The X Fuse® Superelastic Implant produced reliable fusions, with no implant prominence and a 1.7% (1/60) rate of hardware removal in our series.
- When compared with DIP fusions with Interosseous wiring, crossed K-wire or the Herbert screw, this device avoids the risks of soft tissue complications noted with other fusion techniques.