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Clinical and Radiographic Outcomes of Simultaneous Unilateral Basal Joint Arthroplasty and Scaphoidectomy with Four-Corner Fusion

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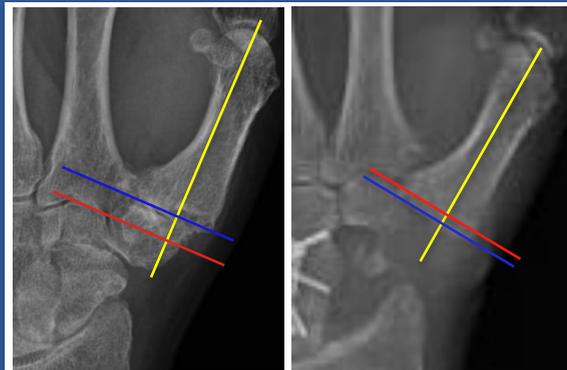
Introduction

- Basal joint arthritis of the thumb and wrist arthritis are frequently treated with surgical intervention upon failure of conservative management
- For patients with coexisting, symptomatic basal joint and wrist arthritis requiring surgical intervention, there is no current standard of care.
- It has become our practice to offer these patients basal joint arthroplasty in the form of ligament reconstruction and tendon interposition (LRTI) along with scaphoidectomy and four-corner fusion (FCF) at a single surgical intervention.
- A benefit of simultaneous procedures is less total immobilization time than a staged approach

Methods

- Retrospective review of 7 cases
- Reviewed:
 - Visual analog scale (VAS) pain scores
 - Time to mid-carpal fusion
 - 1st metacarpal subsidence (Fig. 1)
 - Wrist range of motion
 - Complications
 - Presence of 1,2 metacarpal pin

Figure 1



— Longitudinal axis of 1st metacarpal
— Most distal articular surface of 1st metacarpal base
— 2nd metacarpal-trapezoid joint

1st metacarpal subsidence referenced from the 2nd metacarpal-trapezoid joint

Results

- 7 wrists, 6 patients (4 female, 2 male)
- Follow-up: 12 ± 9 months
- Age at Surgery: 67 ± 12 yrs (51-81)
- Time to wrist fusion: 16 ± 8 wks
- VAS scores (Figure 2)
 - Pre-op: 8.3 ± 2.3
 - Post-op: 3.3 ± 2.6
- Wrist ROM
 - Extension: 35 ± 13 degrees
 - Flexion: 38 ± 15 degrees
- 1st metacarpal subsidence: 6.3 ± 2.5 mm
- 1,2 metacarpal pin placed in 4 of 7 patients
- Complications
 - Hardware removal for loose screw (n=2)
 - Extensor tenosynovitis requiring plate removal (n=1)

Conclusions

- Simultaneous LRTI and FCF results in decreased hand and wrist pain and preserves functional range of motion.
- First ray length is relatively preserved despite the absence of the scaphoid (Figure 3)
- Simultaneous unilateral basal joint arthroplasty and scaphoidectomy, four-corner fusion offers patients with wrist and basilar thumb arthritis an option for significant pain relief in a single surgical setting

Figure 2

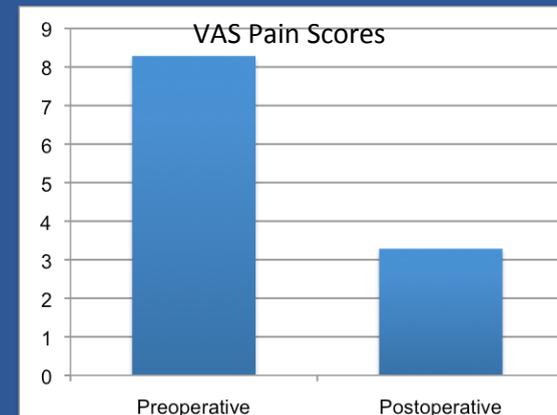


Figure 3



59 year old male 6 months status post trapezie-ctomy, LRTI and scaphoidectomy, four-corner fusion