

## Introduction

- There remains a paucity of information regarding the treatment outcomes of dislocation after total wrist arthroplasties (TWA)
- This study's purpose was to assess the outcomes of surgical and nonoperative treatment modalities for TWA dislocations
- Surgical options for treatment of a total wrist arthroplasty include closed reduction, soft tissue procedure, revision arthroplasty, or wrist arthrodesis

## Methods

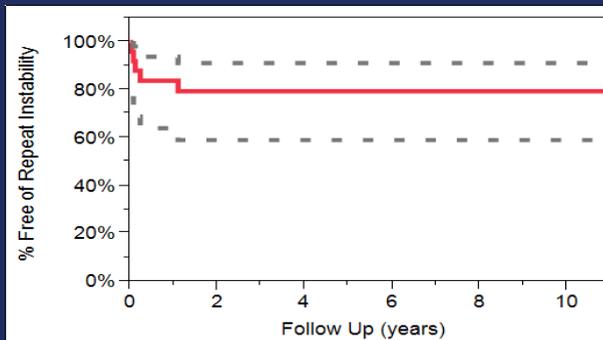
- Retrospective review of 38 cases of TWA dislocation out of 445 TWAs done over a 35 year period
- Mean age 56(35-74)
- 82% were female patients
- 36 dislocations in patients with Rheumatoid arthritis and 2 cases in those with OA/post-traumatic arthritis
- Analyzed dislocation treatment, subsequent procedures needed, pain scores, and range of motion at last follow-up

## Figure 1



AP and lateral imaging demonstrating a dislocated total wrist arthroplasty.

## Figure 2



## Results

- Of the 38 dislocations, initial treatments included 31 closed reduction and splinting, 4 conversions to total wrist arthrodesis, and 3 soft tissue stabilization procedures involving open reduction and capsular tightening.
- Every patient initially treated nonoperatively or with soft tissue stabilization procedures alone failed management and experienced recurrent instability
- 7 of these patients desired no further intervention, 22 patients treated nonoperatively and all 3 treated with soft tissue procedures eventually underwent revision TWA
- Ultimately, 6 patients underwent total wrist arthrodesis, while 25 underwent revision TWA
- All 6 patients who underwent arthrodesis did not require further interventions, with none or mild pain at a mean 1.8 years (1-4) postoperative follow-up
- Of the 25 revision TWAs, 5 (20%) experienced recurrent instability at a mean 3.6 months (1-14) postoperatively. At a mean follow-up 5 years (1-15), the 2 and 5 year survival-free of repeat instability after revision TWA for dislocation was 79% and 79%, respectively (Figure 2)
- No difference in repeat instability existed between the different implants utilized in the revision TWA ( $p=0.87$ ). While a higher rate of repeat instability after revision TWA existed compared to fusion, it was not statistically significant ( $p=0.12$ )

## Conclusions

- Treatment of TWA dislocation, while a rare event, is technically challenging, with high rates of repeat instability
- Nonoperative and soft tissue stabilization procedures fail to restore wrist articular stability.
- While revision arthroplasty leads to stable joints in 4 out of 5 patients, our series suggests arthrodesis as the most reliable definitive treatment option for these patients (figure 3)

## Figure 3



AP and lateral imaging demonstrating a total wrist arthroplasty that was converted to a wrist fusion