

THE PREVALENCE OF PISOTRIQUETRAL ARTHRITIS IN THE SETTING OF SCAPHOLUNATE ADVANCED COLLAPSE

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Introduction

Pisotriquetral pain and subsequent pisiform excision following partial or total wrist fusion in patients with SLAC has been reported. Prior studies have not assessed the potential role of SLAC biomechanics on pisotriquetral osteoarthritis development preoperatively.

Purpose

To determine the prevalence and severity of PT OA in patients with SLAC as compared to a control population. We hypothesized that the prevalence and severity of PT OA would be higher among patients with SLAC wrist.

Methods

- MRI studies of 24 patients with SLAC wrist and 24 sex- and age-matched control patients were analyzed
- Patients with inflammatory arthritis, CPPD, and incomplete/atraumatic SLIL rupture were excluded from SLAC cohort.
- Patients with TCFF injury, ECU tendinopathy, or ulnar-sided wrist pain were excluded from control cohort
- Cartilage graded according to 4-category scale: normal (grade 1), superficial wear (grade 2), high grade wear including full thickness chondral loss up to 25% of a joint surface (grade 3), and full thickness chondral loss affecting greater than 25% of either joint surface (grade 4)
- Two-sided Z tests with pooled variance were performed to assess 1) incidence of PT OA [grades 3+4] 2) incidence of severe PT OA (grade 4 only)

Results

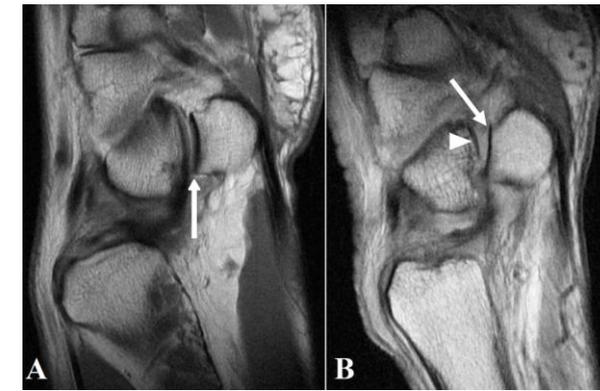
Control	SLAC
•Avg. control age: 60 yrs (40-76)	•Avg. age: 60 yrs (40-73)
•16 M/8 F	•16 M/8 F
•Incidence of G3+4: 37.5%	•Incidence of G3+4: 41.7%
•Incidence of G4: 4.2%	•Incidence of G4: 16.7%

Incidence of G3+4 in SLAC vs. Control: P = 0.768
Incidence of G4 in SLAC vs. Control: P = 0.678

Conclusion

We identified a 4-fold (but not statistically significant) increased prevalence of end-stage arthritis in patients with SLAC. A limitation of this study is its small cohort sizes. Power analyses suggest the small difference in arthritic prevalence observed between cohorts requires nearly 2000 patients to detect a significant difference in grades 3 + 4 ("arthritic") prevalence, and 240 patients to detect a significant difference in grade 4 ("severe PT OA") prevalence. However, given reports of symptomatic PT OA developed following 4CF, we recommend preoperative vigilance for PT pain in patients with SLAC, as well as future studies to better understand the etiology, progression, and identification of PT OA to counsel at-risk patients who may benefit from concurrent pisiform excision at the time of partial or total wrist arthrodesis.

Fig. 1



(A) MRI of normal articular cartilage at the PT joint (arrow) in a control wrist (B) MRI of the wrist in a SLAC wrist demonstrates extensively exposed bone and tilting of the pisiform suggestive of altered kinematics at the pisotriquetral joint (arrow).