

Clinical Outcomes of Screw Fixation for Ligamentous Injuries to the Ankle Syndesmosis in Athletes

Monique Chambers, MD, MSL, Joseph Kromka, BS, MaCalus Hogan, MD

Category: Sports

Keywords: Jones Fracture, Athletes, Screw Fixation

Introduction/Purpose: Injuries to the ankle syndesmosis are commonly seen in the general population as well as in athletes [1]. Literature is mixed on the effectiveness of the two fixation techniques – rigid screw and suspensory fixation [2]. Specifically, data is lacking in an athletic population. Hypothesis: We hypothesize that in patients treated with rigid screw fixation, athletes will have a higher incidence of hardware-associated pain, screw breakage, and screw removal compared to non-athletes.

Methods: This study was a retrospective review of a patients from eight orthopedic surgeons within the UPMC system. All patients underwent surgical stabilization of the ankle syndesmosis with a rigid screw. Exclusion criteria included age <15 years or >45 years, polytrauma, injury to the ankle articular surface, neurological impairment, chronic medical conditions, and other disabilities. Athlete status was assigned based on mention of participation in athletic activity at the high school level or higher in the electronic medical record. The incidence of hardware-associated pain, screw breakage, and screw removal in athletes vs. non-athletes were evaluated using chi-squared and fisher's exact tests.

Results: Fifty-five patients met the eligibility criteria. Of these patients, 21 athletes were identified with 34 being non-athletes. In terms of patient characteristics, the athlete group was 90% male, 48% right sided injury, and with an average age of 26.6 (SD 6.8). The non-athlete group was 59% male, 47% right sided injury, and with an average age of 33.6 (SD 6.6). Athletes were observed to have higher incidence of hardware-associated pain (6 (29%) vs. 6 (18%), $p=0.341$), screw breakage (8 (38%) vs. 8 (24%), $p=0.248$), and screw removal (19 (90%) vs. 23 (68%), $p=0.100$) compared to non-athletes in this study. However, only the comparison for screw removal approached statistical significance.

Conclusion: The results suggest that even in an age matched population, athletes may have higher incidence of screw removal. This study did not have sufficient power to demonstrate a statistical difference in hardware-associated pain or screw breakage, although these did occur at a higher rate in the athlete population. A larger study will be needed to demonstrate statistical significance. Nevertheless, these results suggest that it may make sense to use the suspensory fixation method in athletes in order to avoid a second surgery for hardware removal.

Foot & Ankle Orthopaedics, 2(3)
DOI: 10.1177/2473011417S000126
©The Author(s) 2017