Peroneal Tendon Dislocation Associated with Intra-Articular Calcaneus Fractures

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Background: Peroneal tendon subluxations or dislocations (PTD) are often undetected and under-treated in the setting of intra-articular calcaneus fractures. Existing studies demonstrating an association of PTD with intra-articular calcaneus fractures are limited by small sample sizes and do not correlate PTD with fracture classification; therefore, offering little diagnostic or prognostic value. The goals of this study are to determine: (1) incidence of PTD associated with 24 intra-articular calcaneus fractures; (2) correlation of PTD with fracture classification; (3) association of PTD with heel width; and (4) the rate of missed radiographic diagnosis and lack of treatment of PTD.

Methods: A radiographic retrospective review of all calcaneus fractures presenting from 6/30/06 to 6/30/11 was performed at three institutions. Four hundred twenty-one intra-articular calcaneus fractures involving the posterior facet had CT imaging available for review. Fractures were 30 classified by the Essex-Lopresti and Sanders systems. The incidence of PTD was noted and correlated with fracture classification and heel width. Radiology reports and operative reports were reviewed to determine if PTD was identified and treated.

Results: There were 118 (28.0%) PTD cases out of a total 421 calcaneus fractures. PTD was significantly associated with joint depression fractures when compared to tongue-type fractures (p < 0.001). Increasing severity of fractures, based on Sanders classification, was associated with 36 PTD (p < 0.002). Among cases with PTD, the mean heel width on CT scan was significantly greater than cases without PTD (p = 0.003). Only 12 (10.2%) of the 118 PTD cases were identified in radiology reports. Sixty-five (55.1%) fractures with PTD were taken for fixation, however only seven (10.8%) of the 65 cases had the PTD surgically addressed.

Conclusion: Results of this radiographic analysis showed a 28% incidence of peroneal tendon displacement associated with intra-articular calcaneal fractures. Surgeons and radiologists are encouraged to be aware of this significant finding. Further research is required to determine the resultant morbidity from peroneal tendon dislocations associated with calcaneal fractures.

Level of Evidence: IV