Navicular Body Fractures – Surgical Treatment and Radiographic Results, Sanders R, Serrano R. *J Orthop Trauma* 2020;34: S38-S44

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Level of Evidence: 4

Reviewer:
Eyad Xoubi, PGY-II
Advocate Christ Medical Center

Navicular body fractures are uncommon; as they mainly occur due to a high energy crush or dislocation injury, usually with the foot in plantarflexed position. Understanding the injury patterns and outcomes after navicular body fractures are essential in treatment planning. Severe navicular body fractures are often associated with combination injuries involving other bones to the foot. The purpose of this study was to evaluate Schmid type 2 and type 3 fractures, reporting radiographic outcomes after surgical intervention:

Schmid Classification (2016)

Type I: Single fracture line to the body regardless of direction
Type II: Comminuted fracture with multiple fragments
Type III: Any fracture of the navicular with TN joint dislocation or involvement of talar head

The study consisted of a retrospective radiographic review in a 10-year period with at least 3 years of complete X-ray follow up. They found 18 Schmid Type II and 21 Schmid Type III fractures. Fractures were fixated utilizing isolated screws (10 patients), circumferential tension band plates with lag screws either in or outside of the plate (22 patients), lag screws and a straight medial plate (3 patients). TN fusion occurred in 4 patients (all were Type III fractures). Additional fixation may have been used secondary to combination injuries involving the other bones and joints in the foot.

They found that 12/18 (67%) Type II fractures healed without complications. Of the 6 complications, only 3 required further surgical intervention involving 1 revision and 2 TN fusions.

They found that only 3/21 (14%) Type III fractures healed. Four required a TN fusion at the time of initial procedure due to the severity of the injury. The remaining 14 (67%) had severe collapse, end stage post traumatic arthritis, and/or midfoot deformity in which 3 required a late triple arthrodesis.

It can be concluded that Type II fractures are significant injuries with damage to the TN joint but has good results with tension band plating fixation to prevent any lag screw loosening. Type III fractures are devastating injuries with poor outcomes following ORIF.
