

Treatment of Comminuted Navicular Fracture with Open Reduction Internal Fixation Augmented with Temporary Spanning Plate

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INTRODUCTION:

Comminuted fractures of the navicular may be associated with loss of integrity of medial column of the foot, which may result in gross instability and early osteoarthritis. Goal of treatment is to maintain the length and stability of medial column, and restore the anatomy without damaging the blood supply.

This case report presents the management of a comminuted navicular fracture through open reduction internal fixation augmented by a temporary spanning plate.

REPORT:

A 29 year-old lady sustained a comminuted navicular fracture following a motorvehicle accident. Radiographs and CT scan reveal it to be a Sangeorzan Type III fracture with impaction over the lateral navicular, with subluxation of talonavicular joint. There was also a posteromedial body talus fracture. Surgery was performed via a dorsomedial approach, fracture site was disimpacted with a distractor, articular alignment restored, and locking plate of navicular was performed with bone graft. In addition, a low profile 2.7mm locking plate was contoured and applied, spanning talonavicular and naviculocuneiform joints. At two months follow-up, navicular fracture had united and weightbearing was started. Removal of plate was done at four months. Patient recovered well subsequently.

This case report underscores the effectiveness of combining navicular plating with a temporary spanning plate to maintain the reduction at the fracture site via distraction, hence maintaining the medial column length, while awaiting union of navicular. Implants are removed after fracture healing.



Figure 1: Pre-operative lateral foot xray showed impaction of navicular



Figure 2: Intra-operative images showing restoration of height of navicular and spanning plate over medial column.

CONCLUSION:

Comminuted navicular fracture can be treated effectively through open reduction internal fixation augmented by a temporary spanning plate.

REFERENCES:

1. Schildhauer et al (2003). Temporary Bridge Plating of the Medial Column in Severe Midfoot Injuries. Journal of orthopaedic trauma. 17. 513-20. 10.1097/00005131-200308000-00007.