

**Talonavicular Dislocations: A Bad Actor Made Worse Without Sufficient Fixation**

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**Background:** The talonavicular joint (TNJ) is critical to midfoot architecture; traumatic disruptions threaten arch integrity. We sought to explore TNJ injuries and understand if transient methods of stabilization after TNJ dislocations (TNDs) resulted in different radiographic and clinical outcomes when compared to more durable fixation methods.

**Methods:** Skeletally mature patients from 1 tertiary Level I trauma center surgically treated for traumatic TNDs between 2002 and 2022 were included. Demographics, treatment, radiographic and patient-reported outcomes (PROs) were recorded. Patients treated with temporary fixation methods (closed / open reduction ± transarticular pinning, Kirschner-wire removal at 6-8 weeks) were compared to those with durable fixation (bridge plating / primary arthrodesis). Primary outcome was reoperation. Secondary outcomes were radiographic arch measurements (Meary’s angle [MA], calcaneal inclination angle [CIA]) and PROMIS (Patient-Reported Outcomes Measurement Information System) measures of physical function, pain interference, and anxiety.

**Results:** 66 feet in 62 patients were included. Average follow-up was 2 years. Injuries manifested as pure dislocations (18) and fracture dislocations (44), 12 of which were Hawkins IV talar neck fracture dislocations (18%). Fixation groups were demographically similar. 42 patients underwent temporary fixation (64%). Nearly two-thirds required reoperation (with 32% fusion, 7% amputation). Injuries treated with transient fixation had higher reoperation rates (72.2% vs 47.6% P = 0.063) and required more fusions (42.1% vs 14.3%, P = 0.029); these findings were replicated when temporary fixation was utilized in TNJ reductions perceived to be unstable prior to fixation. Transient fixations also had higher mean change in MA postoperatively (-7.9° vs -1.1°, P = 0.006), and exhibited significantly different MA and CIA at final follow-up (7.8° vs -1.4°; 17.3° vs 21.3°, P<0.03). Fixation method had no significant association with PROMIS outcome scores.

**Conclusions:** TNDs are the result of high-energy mechanisms and have significant long-term sequelae. Fixation length and construct for these injuries should be carefully considered to avoid loss of normal arch and midfoot sag.

Table 1	n (%)
Patients/Foot	62/66 (94%)
Age at Injury (y)	37.9
Gender	
Females	15 (23%)
Laterality	
Right	34 (52%)
Bilateral	4 (6%)
BMI	31.0
Average CCI	0.5
Average Follow Up (y)	2.0
<b>Injury Details</b>	
Trauma Activation	42 (64%)
Open Injury	20 (30%)
<b>Mechanism</b>	
<b>High Energy</b>	<b>64 (97%)</b>
MVC	13 (20%)
Snow Sport	2 (3.0%)
ATV	3 (5%)
Fall from height	30 (46%)
MCC	11 (17%)
Crush	3 (5%)
Other	4 (6%)
<b>Fixation Type</b>	
Temporary	42 (64%)
Permanent	24 (36%)

POSTER ABSTRACTS

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device they wish to use in clinical practice.