

Avulsion Fractures of the Calcaneal Tuberosity: A Single-Center Review of Outcomes and Complications

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Purpose: The purpose of this investigation was to determine the incidence of complications and reoperation after calcaneal tuberosity avulsion fractures, to describe experience with different fixation constructs, and to compare reoperation rates between tuberosity and tongue-type fractures of the calcaneus.

Methods: This was a retrospective study at a single Level I trauma center between 2001 and 2019, including patients with calcaneal tuberosity avulsion fractures compared to patients with calcaneal tongue-type fractures.

Results: 29 tuberosity fractures (23 operative and 6 nonoperative) and 37 tongue-type fractures (29 operative and 8 nonoperative) were treated during the study period. Treatment failure was more common in the tuberosity group (26% vs 7%, $P = 0.013$), as was secondary loss of reduction not requiring revision surgery (17% vs 0%, $P = 0.009$). Initial soft-tissue compromise was a risk factor for reoperation, but fragment size and displacement were not associated with reoperation in the tuberosity group. Elective removal of implant was more common in the tongue-type group (34% vs 9%, $P = 0.002$). Overall complication rate was similar between groups ($P = 0.082$).

Conclusion: Calcaneal tuberosity fractures have a significantly higher rate of revision surgery and loss of reduction compared to tongue-type calcaneal fractures, with similar rates of overall complication.

Comparison of Major Complications			
	Tuberosity	Tongue	p
Overall Reoperation	48%	55%	0.663
Treatment Failure	26%	7%	0.013
Soft Tissue Complication Only	13%	7%	0.028
Catastrophic Loss of Fixation	13%	0%	0.045
Secondary Loss of Reduction	17%	0%	0.009
Elective Removal of Hardware	9%	34%	0.002
Planned Staged Surgery	13%	14%	0.105