

Functional Outcomes and Complications Following Total Talus Replacement

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INTRODUCTION: Total talus replacement (TTR) is an emerging alternative for patients with talar avascular necrosis, nonunion, and trauma, preserving ankle motion compared to tibiotalar and subtalar fusion. However, data on failure rates, functional outcomes, and predictors of poor results remain limited. The purpose of this study is to evaluate functional outcomes, reoperation rates, and risk factors for complications following TTR.

METHODS: A retrospective review identified patients who underwent isolated elective total talus replacement between 2017 and 2023. Patients with total ankle arthroplasty or tibiotalar fusion were excluded. Demographic variables, including age, sex, BMI, and comorbidities, were recorded. Functional outcomes were assessed using Foot and Ankle Outcome Scores (FAOS), evaluating pain, symptoms, activities of daily living (ADL), sports/recreation, and quality of life (QOL). Complications, revision rates, and additional surgeries were analyzed.

RESULTS: Thirty-one patients underwent TTR, with a mean age of 41.6 ± 15.4 years and a mean follow-up of 1.7 ± 0.9 years. The majority were female (71.2%), and the mean BMI was 29.7 ± 7.0 . Diabetes was present in 12.9% of patients. Functional outcomes significantly improved across all FAOS domains (< 0.001). The FAOS Pain score increased from 42 ± 17.3 preoperatively to 75.3 ± 18.6 at their final follow-up. Similar improvements were seen in FAOS Symptoms (42 ± 19.1 to 66.4 ± 22.9), ADL (54.5 ± 23.5 to 84.3 ± 18.6), Sports/Recreation (26.8 ± 31.4 to 36.5 ± 28.4), and QOL (10.4 ± 14.5 to 42.8 ± 21.2). Revision surgery was required in 2 patients (6.4%), and 4 patients (12.9%) underwent additional procedures.

DISCUSSION AND CONCLUSION: Patients undergoing TTR demonstrated significant improvements in pain, symptoms, and functional outcomes, with high early implant survivorship. Total talar replacement can restore function and mobility in appropriately selected patients, offering a promising solution for those seeking to avoid fusion procedures.

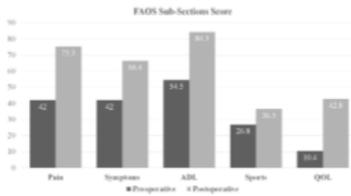


Table 1: Patient Demographics

Variable	Total Talus Group N=31 (%)
Age	41.6 ± 15.4
Gender	
Male	8 (25.8)
Female	23 (71.2)
BMI	29.7 ± 7.0
ASA Class	2 ± 0.7
Laterality	
Right	17 (54.8)
Left	14 (45.1)
Diabetes	4 (12.9)
Smoking	
No	30 (96.8)
Current	1 (3.3)
Latest Follow up	1.7 ± 0.9
Revision Surgery	2 (6.4)
Additional Surgeries	4 (12.9)
Prior surgeries	
0	15 (48.3)
1	9 (29.0)
2	5 (16.1)
3	2 (6.4)
Prior Talus ORIF	7 (22.5)

BMI: body mass index; ORIF: open reduction internal fixation

Table 2: FAOS Subsection Patient Reported Outcome Measures

FAOS Subsection	Pre-op Average	Post-op Average	Mean Δ	P-value
Pain	42 ± 17.3	75.3 ± 18.6	33.3	<0.001
Symptoms	42 ± 19.1	66.4 ± 22.9	24.4	0.009
ADL	54.5 ± 23.5	84.3 ± 18.6	29.8	<0.001
Sports/Rec	26.8 ± 31.4	36.5 ± 28.4	9.7	0.578
QOL	10.4 ± 14.5	42.8 ± 21.2	32.4	<0.001

Δ: increase of daily living; QOL: quality of life; P-values in bold indicate statistical significance < 0.001