

Impact of Travel Distance on Primary Total Hip Arthroplasty

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INTRODUCTION:

Total hip arthroplasties (THA) are increasingly being performed at high-volume specialty centers, causing some patients to travel farther to receive care. Concerns remain that increased travel distance limits follow-up which may impact outcomes. The purpose of this study is to evaluate the impact of travel distance on patient reported outcomes (PROs).

METHODS:

Patients undergoing inpatient primary THA at a single center by one of three surgeons between 2017-2021 with a minimum of 90 days of follow-up were included. Only patients whose local and distant medical records were available were included. Patients who lived > 50 miles to operative location or follow-up were labeled as “travelers” and those < 50 miles were “locals”. Primary outcomes included change in PROs and rate of achieving MCID. A power analysis demonstrated a required sample size of 32 per group to achieve 80% power for PROs.

RESULTS:

A total of 413 patients were analyzed at a mean of 893.2 days postoperatively (range 92 to 2196 days) including 62 travelers and 351 locals. There were no differences in change in PROs as measured by VR-12 (travelers=12.0, locals=10.6, *p*=0.515), Hip Society Score (travelers=36.2, locals=36.6, *p*=0.930), or HOOS JR (travelers=32.8, locals=31.2, *p*=0.618). The two cohorts achieved MCID at similar rates as measured by VR-12 (travelers=70.7%, locals=67.4%, *p*=0.678), HHS (travelers=84.8%, locals 93.6%, *p*=0.086), and HOOS JR (travelers=83.0%, locals=88.4%, *p*=0.297). There was a low incidence of 90-day medical complications rates (travelers=1.6%, locals=2.3%, *p*=0.741), 90-day reoperations rates (travelers=1.6%, locals=1.7%, *p*=0.964), and 90-day readmission rates (travelers=1.6%, locals=4.0%, *p*=0.357).

DISCUSSION AND CONCLUSION:

Travelers did not demonstrate any difference in PROs relative to locals. The rate of 90-day complications were similar between groups. These data suggest that increased travel distance to treatment centers does not significantly impact outcomes following THA.

Table 1. Demographics of Travelers and Local Cohorts

	Travelers	Locals	p Value
Number			
Age (SD)	63.1 (13.4)	63.0 (13.1)	0.96
HOOS JR Pre-Op	31.4 (11.4)	31.1 (11.4)	0.73
Gender (%)			0.93
Male	30 (48.4%)	141 (40.2%)	
Female	32 (51.6%)	210 (59.8%)	
Race (%)			0.40
White	34 (54.8%)	141 (40.2%)	
Black	1 (1.6%)	10 (2.8%)	
Hispanic	1 (1.6%)	10 (2.8%)	
Other	26 (41.6%)	150 (42.2%)	
Insurance (%)			0.00
Medicare	31 (50.0%)	208 (59.3%)	
Medicaid	1 (1.6%)	10 (2.8%)	
Private	30 (48.4%)	141 (40.2%)	
Other	0 (0.0%)	1 (0.3%)	
Meaningful Score Pre-Op	11.0 (7.0)	11.0 (7.0)	0.93
Mean	11.0 (7.0)	11.0 (7.0)	
SD	7.0 (7.0)	7.0 (7.0)	
Median	11.0 (7.0)	11.0 (7.0)	
Interquartile Range	11.0 (7.0)	11.0 (7.0)	
Median (IQR)	11.0 (7.0)	11.0 (7.0)	

Table 2. Patient Reported Outcomes

	Travelers	Locals	p Value
VR-12			
Pre-Op	31.4 (13.4)	31.1 (13.1)	0.96
Post-Op	43.4 (13.4)	41.7 (13.1)	0.51
Change in Score	12.0 (13.4)	10.6 (13.1)	0.51
MCID	43.4 (13.4)	41.7 (13.1)	0.68
Mean (SD)	43.4 (13.4)	41.7 (13.1)	
SD	13.4 (13.4)	13.1 (13.1)	
Median	43.4 (13.4)	41.7 (13.1)	
Interquartile Range	43.4 (13.4)	41.7 (13.1)	
Median (IQR)	43.4 (13.4)	41.7 (13.1)	
HHS			
Pre-Op	31.4 (13.4)	31.1 (13.1)	0.96
Post-Op	43.4 (13.4)	41.7 (13.1)	0.09
Change in Score	12.0 (13.4)	10.6 (13.1)	0.09
MCID	43.4 (13.4)	41.7 (13.1)	0.09
Mean (SD)	43.4 (13.4)	41.7 (13.1)	
SD	13.4 (13.4)	13.1 (13.1)	
Median	43.4 (13.4)	41.7 (13.1)	
Interquartile Range	43.4 (13.4)	41.7 (13.1)	
Median (IQR)	43.4 (13.4)	41.7 (13.1)	
HOOS JR			
Pre-Op	31.4 (13.4)	31.1 (13.1)	0.96
Post-Op	43.4 (13.4)	41.7 (13.1)	0.30
Change in Score	12.0 (13.4)	10.6 (13.1)	0.30
MCID	43.4 (13.4)	41.7 (13.1)	0.30
Mean (SD)	43.4 (13.4)	41.7 (13.1)	
SD	13.4 (13.4)	13.1 (13.1)	
Median	43.4 (13.4)	41.7 (13.1)	
Interquartile Range	43.4 (13.4)	41.7 (13.1)	
Median (IQR)	43.4 (13.4)	41.7 (13.1)	

Table 3. 90-Day Medical Complications

	Travelers	Locals	p Value
Medical Complications			
Dislocation	1 (1.6%)	1 (0.3%)	0.74
Periprosthetic Infection	0 (0.0%)	0 (0.0%)	0.99
Deep Vein Thrombosis	0 (0.0%)	0 (0.0%)	0.99
Superficial Thrombophlebitis	0 (0.0%)	0 (0.0%)	0.99
Respiratory Complications	0 (0.0%)	0 (0.0%)	0.99
Cardiac Complications	0 (0.0%)	0 (0.0%)	0.99
Renal Complications	0 (0.0%)	0 (0.0%)	0.99
Neurological Complications	0 (0.0%)	0 (0.0%)	0.99
Other Complications	0 (0.0%)	0 (0.0%)	0.99
Total Complications	1 (1.6%)	1 (0.3%)	0.74

Table 4. 90-Day Reoperations

	Travelers	Locals	p Value
Reoperations			
Dislocation	1 (1.6%)	1 (0.3%)	0.74
Periprosthetic Infection	0 (0.0%)	0 (0.0%)	0.99
Deep Vein Thrombosis	0 (0.0%)	0 (0.0%)	0.99
Superficial Thrombophlebitis	0 (0.0%)	0 (0.0%)	0.99
Respiratory Complications	0 (0.0%)	0 (0.0%)	0.99
Cardiac Complications	0 (0.0%)	0 (0.0%)	0.99
Renal Complications	0 (0.0%)	0 (0.0%)	0.99
Neurological Complications	0 (0.0%)	0 (0.0%)	0.99
Other Complications	0 (0.0%)	0 (0.0%)	0.99
Total Reoperations	1 (1.6%)	1 (0.3%)	0.74

Table 5. 90-Day Readmissions

	Travelers	Locals	p Value
Readmissions			
Dislocation	1 (1.6%)	1 (0.3%)	0.74
Periprosthetic Infection	0 (0.0%)	0 (0.0%)	0.99
Deep Vein Thrombosis	0 (0.0%)	0 (0.0%)	0.99
Superficial Thrombophlebitis	0 (0.0%)	0 (0.0%)	0.99
Respiratory Complications	0 (0.0%)	0 (0.0%)	0.99
Cardiac Complications	0 (0.0%)	0 (0.0%)	0.99
Renal Complications	0 (0.0%)	0 (0.0%)	0.99
Neurological Complications	0 (0.0%)	0 (0.0%)	0.99
Other Complications	0 (0.0%)	0 (0.0%)	0.99
Total Readmissions	1 (1.6%)	1 (0.3%)	0.74