

Primary Total Hip Arthroplasty in Morbidly Obese Patients at Ambulatory Surgery Centers: Is It Safe?

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INTRODUCTION:

In recent years, total hip arthroplasty (THA) has increasingly been performed at ambulatory surgery centers (ASCs), alongside a growing trend of THA in patients with higher BMI despite known risks. This study evaluated the safety of performing primary THA in morbidly obese patients within the ASC setting.

METHODS: We retrospectively identified 238 morbidly obese patients (182 with BMI 40-45 and 56 with BMI≥45) who underwent primary THA at an ASC between December 2017–December 2024 and matched to 212 controls with BMI<40. Demographics and 90-day outcomes including perioperative complications, readmissions, and reoperations were recorded. PJI and wound complications were excluded during analysis given their known association with high BMI across surgical settings. Outcomes were assessed using multivariate logistic regression adjusting for age, sex, and Charlson Comorbidity Index (CCI).

RESULTS: Morbidly obese patients were younger (57.5 vs 61.1 years), had higher mean CCI (2.4±1.6 vs 1.9±1.4), and longer follow-up (17.0 vs 9.7 months) than controls (all $P<0.003$). Comparable complication rates were observed in the BMI 40-45 ($n=7$, 3.8%) and BMI≥45 ($n=3$, 5.4%) groups compared to controls ($n=6$, 2.8%; $P=0.638$) including rates of periprosthetic fracture, GI complications, dislocation, and peripheral nerve injury (all $P>0.473$). Only one intraoperative complication (respiratory compromise) was reported in the entire cohort, occurring in the 40-45 BMI group. Readmissions, revisions or reoperations, and unplanned or emergency visits were similar (all $P>0.099$). We did not observe any cases of venous thromboembolism, stroke, or myocardial infarctions in any cohort.

DISCUSSION AND CONCLUSION: Apart from the known risks of PJI and wound complications, morbidly obese patients undergoing primary THA at ambulatory surgery centers demonstrate comparable 90-day outcomes including unplanned visits, readmissions, and reoperations compared to patients with BMI<40. These findings suggest primary THA may be safely performed in this population when appropriate measures are taken to minimize wound and infection related risks.

Table 1. Patient demographics.

(Mean ± SD)	BMI <40	BMI 40-45	BMI ≥ 45	P-value
Total (n=238)	182	56	0	
BMI	28.67 ± 4.74	42.02 ± 1.33	47.53 ± 2.30	<0.001
Age	61.13 ± 10.06	57.88 ± 7.94	56.21 ± 6.40	<0.001
Male sex (n, %)	110 (51.9%)	95 (52.2%)	34 (60.7%)	0.473
CCI score	1.99 ± 1.36	2.38 ± 1.59	2.48 ± 1.77	0.003
Final follow-up (Months)	9.66 ± 6.35	16.41 ± 15.99	19.32 ± 18.25	<0.001

Abbreviations: CCI, Charlson comorbidity index; BMI, body mass index; SD, standard deviation.

Table 2. Ninety-day complications.

Complication (n, %)	BMI <40 (n=182)	BMI 40-45 (n=56)	BMI ≥ 45 (n=0)	P-value
Any Complication	6 (3.3%)	3 (5.4%)	3 (5.4%)	0.638
Periprosthetic Fracture	1 (0.5%)	1 (1.8%)	1 (1.8%)	0.473
GI complications*	4 (2.2%)	1 (1.8%)	0	0.489
Dislocation	0	0	1 (1.8%)	–
Peripheral nerve palsy	1 (0.5%)	0	0	–
Intraoperative Complications	0	1 (1.8%)	0	–

Abbreviations: GI, gastrointestinal; PJI, periprosthetic joint infection; GI, gastrointestinal, ASC, ambulatory surgery center.
*Including GI perforation, bleed, ulcer, or severe colitis.

Table 3. Overall outcomes at 90 days.

(n, %)	BMI <40 (n=182)	BMI 40-45 (n=56)	BMI ≥ 45 (n=0)	P-value
Any Complication	6 (3.3%)	3 (5.4%)	3 (5.4%)	0.638
ED or unplanned visit	6 (3.3%)	6 (10.7%)	4 (7.3%)	0.204
Readmission	4 (2.2%)	3 (5.4%)	0	0.739
Revision/Reoperation	0	1 (1.8%)	0	0.099
Reason for revision/reoperation:				
Periprosthetic Fracture	0	1 (1.8%)	0	
Intraoperative respiratory compromise	0	1 (1.8%)	0	

Abbreviations: ED, emergency department; PJI, periprosthetic joint infection.

Table 4. Adjusted Odds of Complications Compared to BMI < 40, Controlling for Age, Sex, and CCI score.

Outcome	Odds Ratio	95% CI	P-value
Any Complication			
BMI < 40	–	–	–
BMI 40-45	1.36	0.42–4.41	0.605
BMI ≥ 45	2.07	0.46–9.32	0.344
ED Visit			
BMI < 40	–	–	–
BMI 40-45	1.22	0.33–4.51	0.760
BMI ≥ 45	1.83	0.32–10.50	0.495
Readmission			
BMI < 40	–	–	–
BMI 40-45	1.06	0.29–3.86	0.934
BMI ≥ 45	x	x	x
Revision/Reoperation			
BMI < 40	–	–	–
BMI 40-45	1.36	0.42–4.41	0.605
BMI ≥ 45	2.07	0.46–9.32	0.344