The Influence of Obesity on the Outcome of Unicondylar Knee Arthroplasty

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Prior studies have raised concerns that obesity increases the risk of failure in unicondylar knee arthroplasty (UKA). The purpose of this study was to evaluate the influence of obesity on the outcome of UKA at a single institution. METHODS:

There were 4,973 primary cemented medial UKAs performed by 8 surgeons from 2000 through 2022 included in this cohort. The primary outcome measure was implant survivorship. Secondary outcomes included revision rates, reason for revision, and patient-reported outcome measures (PROMs). The mean age at surgery was 65.9 ±10.0 years (32.9-95.8), and 54.6% of patients were women. The mean follow-up for all UKAs was 5.1 years. Outcome comparisons were stratified by body mass index (BMI: under 30; 30-35; 35-40; over 40). RESULTS:

Using revision for any reason as an endpoint, 5-year implant survivorship ranged from 91.6% in the BMI over 45 group to 96.8% in the BMI under 30 group (P<.001). The most common reason for revision was progression of arthritis (which was the only reason for revision in the BMI over 45 group), followed by component loosening and infection. Preoperative KOOS, JR scores ranged from 40.5 to 54.7 and were significantly different between groups (P<.001), but similar 2 years postoperatively (74-81, p=.223).

DISCUSSION AND CONCLUSION: Over a long period of time with a large cohort of medial UKAs, obesity alone did not influence survivorship, with the BMI 40-45 group performing as well as the BMI under 30 group. KOOS, JR scores improved most in the heaviest groups. Progression of arthritis was the most common reason for revision in the high BMI groups.

Group	BMI <30 (N=2858)	BMI 30 to <35 (N=1279)	BMI 35 to <40 (N=543)	BMI 40 to <45 (N=213)	BMI >=45 (N=80)
5-year survivorship	96.8%	93.8%	94.1%	96.4%	91.6%
Revision Rate	3.6%	6.0%	7.2%	5.2%	5.0%
Infection Rate	0.31%	0.39%	0.55%	0.47%	0.00%
Knee Society	82.4±14.5	82.0±15.1	80.6±15.9	78.7±15.6	83.2±12.7
Score	[1847]	[802]	[325]	[124]	[37]
KOOS, JR	54.7±14.0	50.2±15.2	48.6±13.6	44.6±14.9	40.5±21.8
Preoperative	[368]	[183]	[92]	([42]	[13]
KOOS, JR	80.4±17.5	80.9±17.5	80.2±17.5	74.0±18.1	81.1±21.8
2-year	[330]	[183]	[69]	[34]	[7]
Change in KOOS, JR	25.7	30.7	31.6	29.4	40.6