

The Need For Contralateral Total Knee Arthroplasty Depends On BMI

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Background

In most countries, the number of obese patients has been growing steadily for decades. Because of the strong correlation that exists between BMI and primary knee osteoarthritis, patients with high BMI frequently suffer from bilateral osteoarthritis and will be likely to require total knee arthroplasty (TKA) on both knees. This observation, although of major importance, has not been the subject of a dedicated study.

Objectives

The objective of this study was to determine the Incidence of contralateral TKA and time interval between the procedures as a function of BMI.

Study Design & Methods

We conducted a prospective cohort study in a large tertiary hospital including all primary TKA performed between April 1998 and March 2019. We compared the cumulative incidence of contralateral TKA in five different categories of BMI. We built Kaplan-Meier curves for all groups and compared unadjusted survival statistics using Log-rank test. We then used Cox regression to adjust for potential confounders (age, sex, diagnosis, ASA score and smoking status).

Results

A total of 5,400 primary TKAs in 4,508 patients were included (mean age 71.5 years, 68% women). Mean follow-up was 7.6 years. 897 (19.9%) patients had a normal weight at the time of surgery, 1,643 (36.4%) were overweight, 1,209 (26.8%) were obese class I, 531 (11.8%) were obese class II and 228 (5.1%) were obese class III. 1,247 (27.6%) of the patients were ASA 3 or more. 85.7% of patients underwent TKA for primary osteoarthritis. 22.3% patients had previous knee surgery. Cumulative incidence rate of contralateral TKA as a function of BMI and prevalence

at 1, 2, 5, 10 and 15 years was assessed. Normal weight and overweight patients have a similar cumulative incidence of contralateral TKA and about 1/3 of those will have bilateral TKA. Obese class I, II and III demonstrate a significantly increasing incidence of contralateral TKA (log-rank test p

Conclusions

We demonstrate a very strong influence of BMI on the incidence of contralateral TKA, where patients with a BMI ≥ 35 have more than a 40% chance of undergoing contralateral TKA during the ten years following the initial TKA. The probability to undergo contralateral TKA is 1.5 times higher in obese class II and almost twice as high in obese class III patients as compared to normal/overweight patients. This information is important for patients, surgeons and policy makers in order to establish future health needs required by obese patients.