

The Patient's Age and American Society of Anesthesiologists Status are Reasonable Criteria for Deciding Whether to Perform Same-Day Bilateral Total Knee Arthroplasty

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Summary:

This study demonstrates that if patients are selected to undergo Same-day bilateral TKA based on age (<75 years) and ASA status (1 or 2), their risk for postoperative complication is similar to their risk of undergoing unilateral TKA. In addition, a one-week interval between Staged bilateral TKA procedures is an appropriate period of time

Abstract:

BACKGROUND

As a substantial proportion of patients with symptomatic bilateral knee joint disease require TKA for both knees, surgeons are often faced with choosing between 2 options, namely performing same-day bilateral TKA (SD BTKA) or staged bilateral TKA (St BTKA). However, there is a paucity of data regarding patient selection guidelines for SD BTKA. In addition, the optimal time interval between St BTKA procedures remains unknown. We sought to determine (1) whether identification of candidates for SD BTKA based on age and ASA classification was reasonable; (2) whether 1 week was the appropriate time interval between St BTKA procedures, and; identified (3) risk factors for postoperative complications occurring within 90 days after TKA.

METHODS

We retrospectively reviewed 2,086 TKAs (686 unilateral TKAs[UTKA], 519 SD BTKAs, and 181 one week-St BTKAs) records of 1,386 primary osteoarthritis patients, which performed between 2007 and 2013. We recorded patients demographics (age, sex, BMI), preoperative co-morbidities (DM, cardiovascular, neurologic, pulmonary, renal, and VTE, etc), ASA classifications and postoperative major (death, heart failure, myocardial ischemia, stroke, pulmonary embolism, deep wound infection requiring re-operation) and minor complications within 90 days after surgery. We divided patients into low risk group (< 75 year and ASA 1 or 2) or high risk group (= 75 year or ASA 3 or 4) based upon their age and ASA classification. We compared incidences of complications among unilateral TKA, one-stage BTKA and one-week staged BTKA group in overall patients group, and compared the incidence of complication between unilateral TKA and one-stage BTKA in low risk group, and those between unilateral TKA and one week-staged BTKA in high risk patients. Regression analysis was performed to identify risk factors for complication.

RESULTS

Overall, 165 complications had occurred (12%) in 2,086 TKAs. The highest overall incidence of complication was observed in SD BTKA (14%), followed by one-week St BTKA (13%) and UTKA (10%). (p=0.09) In the low risk group of UTKA and SD BTKA, whose age, sex and BMI were matched, no group differences in major (0.6% vs. 2%), minor (8% vs. 9%) and overall (8% vs. 11%) incidence of complications were observed. In addition, incidences of major (2% vs. 4%), minor (11% vs. 12%) and overall complications (13% vs. 15%) between UTKA and one-week St BTKA in high risk patients whose age, sex and BMI were matched were similar. Age (>75 years), ASA classification (more than 3), and other cardiovascular disease were identified as risk factors for complication.

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DISCUSSION & CONCLUSION

Incidence of complications following UTKA, SD BTKA and one-week St BTKA were comparable when patients were selected based upon their age and ASA classification. Age and ASA classification are reasonable guidelines for decision of simultaneous bilateral TKA, and one week seems to be an appropriate interval for St BTKA.