

Complication Rate is Not Increased after Ambulatory Total Hip Arthroplasty in Comparison to Fast-Track Total Hip Arthroplasty: A Propensity-Matched Prospective Comparative Study

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INTRODUCTION:

Prolonged hospital stay is associated with higher patient morbidity and mortality, as well as high costs for the healthcare system. Therefore, the last decade saw a concerted effort to reduce length of stay, minimize cost, and improve efficacy, which resulted in various fast-track (FT), also called enhanced recovery after surgery, protocols for total hip arthroplasty (THA). Current evidence suggest that FT is efficient compared to conventional pathways. However, concerns remain with regard to safety of fast-track and especially ambulatory procedures. The purpose of this study was to compare outcomes of propensity-matched patients that received FT THA in ambulatory versus non-ambulatory settings, focusing on the occurrence of postoperative complications. The hypothesis was that 90-day postoperative complication rates of ambulatory FT THA would not be higher than after non-ambulatory FT THA.

METHODS:

This is a prospective study of consecutive patients that received FT THA at various rates of ambulatory and non-ambulatory surgery by 10 senior surgeons (10 centers). The decision between ambulatory and non-ambulatory surgery was made on a case-by-case basis depending on the surgeon and patient. All patients provided written informed consent for the use and publication of their data, and the study was approved by the institutional review board. All patients were prospectively followed until 90 days after surgery. Postoperative complications, readmissions, and reoperations were collected. The severity of the postoperative complications was assessed according to Clavien-Dindo. Patients completed Oxford Hip Score (OHS) at the latest follow up. The primary outcome was the postoperative complication rate within the first 90 days following surgery.

To compare ambulatory versus non-ambulatory FT THA, a propensity score based on age, sex, body mass index (BMI), and American Society of Anesthesiologists (ASA) score was developed using the "matchit" algorithm. The authors aimed for 1:2 (ambulatory:non-ambulatory) optimal propensity score matching (ratio, 1/2) without replacement, using logistic regression of the treatment on the covariates.

RESULTS:

A total of 140 cases of ambulatory FT THA were matched to 280 cases of non-ambulatory FT THA. Compared to non-ambulatory FT THA, patients scheduled for ambulatory FT THA had no significant differences in 90-day total postoperative complication rates (10.7% vs. 12.9%, $p=n.s.$). There was no difference in 90-day readmission rates and reoperation rates, in the severity of the postoperative complications, and in the time of occurrence of the postoperative complications between the two groups. There was no significant difference in the mean 90-days OHS score between patients that have ambulatory (42.6 ± 6.0 points) or non-ambulatory (42.3 ± 6.0 points) FT THA ($p=n.s.$).

DISCUSSION AND CONCLUSION:

These findings support the hypothesis that 90-days postoperative complication rates are similar for ambulatory versus non-ambulatory FT THA, and refute fears of some surgeons who might be reluctant to perform ambulatory THA due to greater risk of early postoperative complications that could be more difficult to manage after discharge.