

Causes and Risk Factors for Failed Same-Day Discharge after Total Joint Arthroplasty

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INTRODUCTION: Innovations in care and cost-cutting pressures in elective total knee arthroplasty (TKA) and total hip arthroplasty (THA) have produced a shift toward same-day discharge (SDD). Patient selection criteria and postoperative recovery pathways remain unstandardized and are barriers to maximizing successful SDD rates. The objectives of this study were to identify the most common causes and risk factors for failed SDD at our institution in order to understand how perioperative care can be improved for same day TKA and THA patients.

METHODS: Retrospective chart review was performed on patients undergoing primary TKA or THA who were preoperatively deemed to be SDD candidates from January 2021 to September 2022. Operations were performed by five surgeons at a single high volume arthroplasty center. The primary reason for SDD failure was recorded during the patient's postoperative course. Patient demographics, surgical details, and other risk factors were compared in a case-control format between successful and failed SDD cases. Comparisons were assessed via Fisher's exact test and Student's t-test with $\alpha = 0.05$.

RESULTS: A total of 763 patients were included, among which 85.3% (651/753) were successful SDDs. Failed SDD occurred in 16.8% (74/441) of TKA and 11.8% (38/322) of THA cases. Primary reasons for the 112 failed SDD cases included failure to clear physical therapy (33.0%, 37/112), postoperative hypotension (20.5%, 23/112), urinary retention (16.9%, 19/112), and nausea/vomiting (14.3%, 16/112). Overall, failed SDD cases were more likely to be older ($p = 0.04$), have prior opioid use ($p = 0.03$), undergo general anesthesia ($p < 0.01$), and have a longer surgical time ($p < 0.01$). Failed TKA SDD cases were more likely to have a longer surgical time ($p < 0.01$) and not receive a preoperative nerve block ($p < 0.01$). Failed THA SDD cases were more likely to be older ($p < 0.02$), undergo general anesthesia ($p < 0.01$), have longer surgical time ($p = 0.02$), have higher estimated blood loss ($p = 0.04$), and be a robotics-assisted case ($p = 0.01$). In terms of THA surgical approach, both the direct anterior and anterior-based muscle sparing approaches were associated with higher successful discharge rates ($p < 0.01$) when compared to the posterior and direct lateral approaches.

DISCUSSION AND CONCLUSION: SDD selection criteria and pathways continue to evolve, with multiple factors contributing to failed SDD. From the standpoint of perioperative management, implementation of spinal anesthesia for TKA or THA cases and preoperative nerve blocks for TKA cases can improve chances of successful SDD. Additionally, patients with a history of opioid use represent a population who should be carefully screened preoperatively given their higher risk of failed SDD. Moving forward, improving algorithms for patient selection and optimizing postoperative pathways to counteract common reasons for failed SDD can enhance our ability to select and guide patients to successful SDD.