

Optimizing Outpatient Total Ankle Replacement from Clinic to Pain Management



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KEYWORDS

• Total ankle arthroplasty • Cost savings • Outpatient surgery • Joint replacement

KEY POINTS

- Recent health care policy changes, such as bundle payments and outcome-based reimbursement, aim to reduce costs by improving the efficiency with which healthcare is delivered. This must be done while ensuring excellent patient outcomes and satisfaction.
- Many orthopedic specialties have converted inpatient procedures with historically long admissions to “fast tracked” outpatient surgery without compromising patient safety, satisfaction, and outcomes. These “fast tracked” programs are multimodal and multidisciplinary and focus on preoperative, perioperative, and postoperative optimization and have been successful in significantly reducing length of stay in total hip arthroplasty and total knee arthroplasty patients.
- The ability to institute an effective outpatient total ankle program depends on appropriate patient selection, surgeon experience with total ankle replacement, addressing preoperative patient expectations, the involvement of an experienced multidisciplinary care team including experienced anesthesiologists, nurse navigators, recovery room nursing staff, and physical therapists, and most importantly, such a program requires complete institutional logistical support.

INTRODUCTION

End-stage ankle arthritis (ESAA) is a disabling condition with patient morbidity that approaches congestive heart failure and end-stage kidney disease.¹ Historically, the operative treatment gold standard for ESAA has been ankle arthrodesis. Although a significant percentage of patients experience pain relief and high functional outcomes, postoperative stiffness and adjacent joint arthritis can decrease patient satisfaction and postoperative function.^{2,3} Total ankle arthroplasty (TAA) was introduced in the 1970s^{4,5} and provided surgeons and patients with an alternative to

ankle arthrodesis when treating ESAA. TAA allows for increased range of motion at the tibiotalar joint, which leads to improved postoperative function.⁶ In addition, as a result of increased ankle motion, the rate of symptomatic adjacent joint arthrosis is potentially decreased. First-generation TAA implants were associated with high failure and complication rates in addition to inferior outcomes when compared with ankle arthrodesis,⁷ and as a result, TAA was not widely adopted. With time, both the surgical technique and the component design have greatly improved, and as a result, TAA has become an important surgical option in the management of ESAA⁷ and its

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popularity has grown accordingly: between 1998 and 2010, the use of TAA for ESAA has increased 7-fold.⁸

Over the last decade, the demand for health care cost accountability has grown significantly. Recent health care policy changes, such as bundle payments and outcome-based reimbursement, aim to reduce costs by improving the efficiency with which health care is delivered. Policy changes designed to improve cost savings must be implemented without compromising patient care, outcomes or satisfaction. A major area of potential cost savings is hospital admissions following surgical procedures. There is a mounting body of literature that has shown that by decreasing hospital length of stay (LOS), significant cost saving can be achieved.^{9–11} Currently, following TAA, patients are typically admitted for 1 to 3 days for pain control, physical therapy, and mobilization.^{8,12–14} Reducing this LOS to same day outpatient surgery would represent a significant avenue for cost savings. Although there currently is a lack of research specifically relating to foot and ankle surgery, there have been recent studies that have shown promise relating to outpatient foot and ankle surgery, and more specifically, TAA.^{14,15}

Outpatient TAA can be achieved by optimizing patient selection, surgeon experience, surgical technique, use of effective intraoperative pain management, and efficient communication and coordination with physical and occupational therapists. A study by Mulligan and Parekh¹⁴ compared complication, readmission, and reoperation rates between outpatient, overnight, and extended admissions following TAA. They also compared narcotic prescription refills and patient reported visual analogue scores (VAS) postoperatively. They found that outpatient and overnight patients had significantly less complications compared with extended stay patients without finding a difference in postoperative readmission, reoperation, pain scores, or narcotic prescription refills. A study by Gonzalez and colleagues,¹² looking at cost comparison between inpatient and outpatient TAA surgery, found cost savings of approximately 13.4% or \$2500 per outpatient case as well as a decrease in average LOS by 2.5 days. Of note, the investigators admitted this was likely a conservative estimate. These results have also been substantiated by significant cost savings in other total joint specialties.^{16–19} A study comparing outpatient and inpatient surgery in unicompartmental knee arthroplasty (UKA) found that the cost of outpatient UKA

was approximately 20 thousand dollars less per patient when compared with inpatient admissions.²⁰

Many orthopedic specialties have converted inpatient procedures with historically long admissions to “fast tracked” outpatient surgery without compromising patient safety, satisfaction, and outcomes.^{18,19} These “fast track” programs are multimodal and multidisciplinary and focus on preoperative, perioperative, and postoperative optimization and have been successful in significantly reducing LOS in total hip arthroplasty (THA) and total knee arthroplasty (TKA) patients.²¹ The success of the programs has been attributed to multidisciplinary care coordination, standardized perioperative protocols, discharge planning, and careful patient selection. Currently, certain high-volume centers are performing short-stay admission following TAA, but same day discharge is rarely done.¹⁴

PATIENT SELECTION

In TAA, like in all joint reconstructive procedures, a successful outcome depends on proper patient selection. Historically, the ideal TAA patient has been an older (>65), lower demand, and nonobese patient.^{22–24} However, recent reports have shown that patients undergoing TAA who are under the age of 50 can also expect excellent postoperative results.^{6,25} The surgical indications have dramatically changed over the last decade and will likely continue to expand. Following a thorough assessment of the patient and their suitability for TAA, patients can be stratified to inpatient, short stay, or outpatient surgery. This decision should include input from the patient and their family, the surgeon, the anesthesiologist, and preoperative medical consultants. There is a paucity of available data in the TAA literature to guide patient selection for outpatient TAA. There is currently no TAA-specific tool to predict which patients will be discharged on the same day; however, there have been various scoring-based strategies used in the THA and TKA literature.^{26,27} Patient suitability for outpatient TAA should include patient and family preference, the ability of the patient to care for themselves following discharge, medical comorbidities precluding fast track pathway, and the number of associated procedures that will be performed. A study looking at outpatient THA and TKA found that in preoperatively unselected patients, 15% of patients were able to be discharged home the same day; they also found that female sex and surgery later in the day increased the odds of

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