

Total Hip Arthroplasty in the Outpatient Setting

What You Need to Know (Part 2)

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KEYWORDS

- Outpatient total joint arthroplasty • Total hip arthroplasty • Length of stay • Early discharge
- Spinal anesthesia • Rehabilitation

KEY POINTS

- General anesthesia is known to be associated with postoperative drowsiness and hypotension that might interfere with the fast-track protocols. General anesthesia, if used, will be done with sevoflurane and fentanyl in addition to peripheral nerve blocks.
- Intraoperative room efficiency may be optimized by minimizing staff turnover, traffic flow, and the size of the surgical team.
- Regional anesthesia allows for less narcotic administration, which has been associated with decreased postoperative nausea and hypotension.

INTRODUCTION

Outpatient total hip arthroplasty (THA) has become increasingly adopted by orthopedic surgeons and hospital systems across the nation. Over the past decade, orthopedic literature has trended toward reporting outpatient arthroplasty outcomes associated with enhanced recovery pathways (ERPs).^{1–6} Most outpatient THA studies often correlate higher-value care with standardized care pathways, improved discharge planning, minimally invasive techniques, and fast-track rehabilitation. Outpatient THA pathways have been reported as cost-effective and do not increase risk of peri- and postoperative complications.^{1–6}

This article is the second installment of understanding the components involved in creating and implementing a successful outpatient THA

pathway. This article reviews intraoperative factors involved in outpatient THA such as anesthesia and analgesia modalities, operative techniques, and intraoperative efficiency. Finally, it elaborates on postoperative considerations for outpatient THA including rehabilitation.

ANESTHESIA AND ANALGESIA MODALITIES

With growing emphasis on cost efficiency, optimizing anesthesia protocols has become essential to assure rapid rehabilitation and enable a minimally invasive outpatient approach to THA.

General Anesthesia

General anesthesia is known to be associated with postoperative drowsiness and hypotension

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that might interfere with the fast-track protocols. General anesthesia, if used, will be done with sevoflurane and fentanyl in addition to peripheral nerve blocks.⁷ Short-acting anesthetics such as propofol are always preferred.⁶ Most patients undergoing THA and included in an enhanced recovery protocol (ERP) were operated under regional anesthesia, and general anesthesia was only indicated when peripheral nerve block failed to assure complete muscle relaxation or optimal analgesia.⁶

Spinal Anesthesia

Regional anesthesia allows for less narcotic administration, which has been associated with decreased postoperative nausea and hypotension. Regional anesthesia was mostly preferred. Low-dose spinal anesthesia (12.5 mg of isobaric bupivacaine) will not interfere with patients stay in the postanesthesia care unit (PACU) after THA.

Perioperative Pain Management

Pain affects patient stay after elective THA.¹ An early initiation of preemptive oral analgesia protocol is essential to shorten length of stay (LOS). Multimodal methods have been described including systemic analgesia, local joint infiltration with local anesthetic, and peripheral nerve blocks.

Several types of systemic analgesia are offered to patients in the perioperative setting including acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs), opioids, and gabapentanoids. Acetaminophen is used widely in outpatient THA, either orally or intravenously.⁷ Multiple protocols have been described, 975 mg orally every 6 hours, or 2 g for preoperative premedication and then every 12 hours.^{7,8}

NSAIDs are also used as preemptive oral analgesics in addition to acetaminophen. Celebrex (cyclooxygenase-2-inhibitor) is commonly used with 400 mg given 1 hour prior to surgery and then postoperatively every 6 hours.⁶ For fast-track THA, opioids are used as a rescue analgesic method. Their prescription as requested depends either on visual analog scale (VAS) scores or on numeric rating scale (NRS) scores that range from 0 to 10, with 10 being the worst possible pain. Avoiding systemic opioids decreases incidence of potential LOS-prolonging side effects such as respiratory depression, sedation, urine retention, nausea, vomiting, and pruritus. Ondansetron is often administered preoperatively to anticipate possible postoperative nausea and vomiting. A second antiemetic dose is given in the PACU to reinforce its effect.⁶

As part of a multimodal regimen, studies suggest oxycodone 5 mg will be administered orally (VAS<4). After a reevaluation and if VAS is greater than 7, oxycodone 10 mg or morphine 2 to 4 mg intravenously will be given. If VAS ranges between 4 and 7, however, another 5 mg of oxycodone will be prescribed.

Gabapentinoids are also used for their opioid-sparing effects, and to avoid narcotics side effects such as nausea, vomiting, and urinary retention. Recently, gabapentin has been an integral part of the multimodal analgesia concept for its antiallodynic and antihyperalgesic effect. Tiippana and colleagues⁹ reported a 20% to 62% decrease in opioid consumption during the first 24 hours postoperatively when using a single dose of gabapentin. They also reported better pain control with gabapentinoids compared with placebo. Although there are no clear protocols on gabapentinoid administration, most studies used gabapentin or pregabalin 1 to 2 hours prior to surgery, and the doses ranged between 300 and 1200 mg with no additional side effects except minor sedation. A summary table of aforementioned medications is provided in [Table 1](#).

Locally Infiltrative Analgesics

Local analgesic infiltration in patients undergoing THA has been reported to decrease not only pain scores postoperatively but also opioid consumption compared with placebo.¹⁰ Different medications with different regimens have been used in local infiltration. Emerson and colleagues,¹¹ in a comparative study between standard bupivacaine wound infiltration and liposomal bupivacaine infiltration, reported that VAS scores were significantly lower in the liposomal group. Opioid doses along with total opioid consumption were also lower in the liposomal group. Local infiltration is a safe and simple method used as part of multimodal pain management following THA to decrease LOS and avoid opioid side effects. The conventional cocktails used in locally infiltrative injections usually contain 2 or more analgesic agents, such as opioids (eg, morphine, fentanyl, and codeine), NSAIDs (eg, diclofenac sodium, ibuprofen, and meloxicam), steroid hormones (eg, dexamethasone and betamethasone), and local anesthetics of amide derivatives (eg, bupivacaine and ropivacaine).

Peripheral Nerve Blocks

Peripheral nerve blocks have been described as part of fast-track surgery to promote early mobilization, rehabilitation, and decreased LOS. Ilfeld

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