

CLINICAL ANALYSIS: CPNBS IMPROVE PATIENT SATISFACTION AFTER TOTAL JOINT REPLACEMENT

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INTRODUCTION

Pain relief plays a primary role in determining patient satisfaction after surgery. A surgeon may execute a flawless surgical procedure, but a painful or complicated recovery may diminish the overall patient experience. In a survey of 300 surgical patients, post-surgical pain was reported as the top concern prior to surgery. Of these patients, 75% reported moderate to extreme pain during the initial postoperative period.¹

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The subject of patient satisfaction is complex and may be correlated with factors other than a good outcome. Hamilton et al surveyed over 4,700 patients undergoing total hip or knee joint replacement over a four year period. Their study found high levels of overall patient satisfaction following total joint arthroplasty and determined that the most impactful factors were the degree to which patient expectations were met and they were satisfied with pain relief. Patient-reported outcome measures such as age, gender, and comorbidities did not impact satisfaction.²

In another study, Bourne and his colleagues also measured patient satisfaction after joint replacement surgery. They performed a cross-sectional study of 1,703 primary total knee arthroscopy (TKA) patients to determine whether advances in implant technology were associated with improved patient satisfaction. What they found is despite these advancements,

19% of patients were not satisfied with the outcome and satisfaction with pain relief varied from 70-84%. Patients who felt that their expectations were not met were at a ten times greater risk for dissatisfaction. A low one-year WOMAC score, preoperative pain at rest, and a postoperative complication requiring hospital readmission were also significant in predicting patient dissatisfaction after TKA.³

Effective surgical pain treatment involves a multimodal approach to diminish the intensity of acute pain. This approach offers improved postoperative pain control while minimizing the side effects associated with any one therapeutic option.^{4,5} Included in today's multimodal approach are continuous peripheral nerve blocks (CPNBs), which have enabled patients to benefit from non-narcotic postoperative pain control, reducing the need for opioids and their related complications. The impact is particularly evident in orthopedic surgery, where patients may achieve earlier mobilization and return to daily activities, in addition to shorter hospital stays with fewer complications.^{6,7,8}

Another benefit of CPNBs is greater patient satisfaction, which is especially important in today's healthcare environment. To better understand the effect that CPNBs have on patient satisfaction after TKA, this paper presents a review of the current associated literature.

REVIEW OF THE LITERATURE – PATIENT SATISFACTION CPNB vs Other Postoperative Pain Management Modalities after TKA

A 2014 Cochrane Systematic review evaluated the use of femoral nerve block (FNB), consisting of single shot and CPNB to other pain management therapies in TKA patients. The review demonstrated that patients

receiving FNB had greater satisfaction than those receiving IV PCA. Compared to epidurals, pain relief was similar, but patients with a FNB reported greater satisfaction than those with epidural therapy. The review also concluded that a continuous FNB provided more effective analgesia than single shot FNB.⁹ A randomized controlled trial (RCT) by Wu comparing continuous femoral nerve block (CFNB) with IV PCA had similar results. In this study of 60 TKA patients, patients in the CFNB group reported significantly greater satisfaction in addition to better pain relief, earlier mobilization, less opioids, and fewer opioid-related side effects.¹⁰

Another study consisting of 60 TKA patients compared patients receiving a 24 hour CFNB after discontinuation of the epidural to those treated only with opioid analgesics. Patients in the CFNB had significantly higher median satisfaction scores (9 vs 7) with their pain management treatment compared with those managed by oral opioids. An interesting finding at the one year follow-up of these patients was that patients in the CFNB group had undergone additional orthopedic procedures compared with the opioid only group. The authors concluded that a possible explanation for this was the patient's satisfaction with their initial surgery.¹¹

Over 700 patients receiving a CPNB for postoperative pain relief had significantly higher patient satisfaction scores compared to those with only a single shot (SS) block.

Bingham's meta-analysis and systematic review of orthopedic (including TKA) and breast procedures compared patients receiving a single shot block to those with CPNB. This review, which was comprised of over 700 patients and 21 RCT, determined that patients receiving a CPNB for postoperative pain relief had significantly higher patient satisfaction scores compared to those with only a single shot (SS) block. Other outcomes measured, including improved pain control, less opioid use, and decrease in nausea also significantly favored CPNB.¹²

Continuous Adductor Canal Blocks

The use of CFNB after TKA as described in some of the above papers has been routinely used and is superior to opioids as well as SS blocks. However, while a CFNB provides superior pain relief to opioids alone, this block also affects motor function. Consequently, femoral nerve blocks have been associated with femoral quadriceps muscle weakness and, in turn, a potential increased risk of falls.¹³

Advancement in regional anesthesia has resulted in techniques such as continuous adductor canal blocks (CACB) for ACL and TKA procedures. Unlike a femoral nerve block, the adductor canal block is predominately a sensory block, which preserves quadriceps muscle strength and improves ambulation ability without compromising pain control^{14,15,16} or patient satisfaction.^{14,15} There is growing evidence that a CACB is the optimal analgesic choice after TKA.^{16,17} Auyong also found that replacing CFNB with a CACB as part of an updated enhanced recovery after surgery (ERAS) pathway after TKA resulted in a significant decrease in length of stay, from 76.6 hours to 56.1 hours without an increase in readmission.¹⁸

CONCLUSION

It is evident from the studies reviewed that patient satisfaction after TKA is significantly enhanced with a multimodal regime incorporating CPNB analgesia. This approach provides effective pain relief with fewer side effects, contributing to an optimal postoperative patient experience.

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