

Are Continuous Femoral Nerve Catheters Beneficial for Pain Management After Operative Fixation of Tibial Plateau Fractures? A Randomized Trial

Paul Tornetta III, MD¹; Margaret Cooke, MD²; Tyler Welch, MD³; Oleg Gusakov, MD¹

¹Boston Medical Center, Boston, Massachusetts, USA

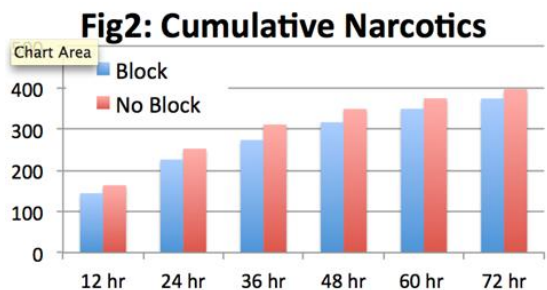
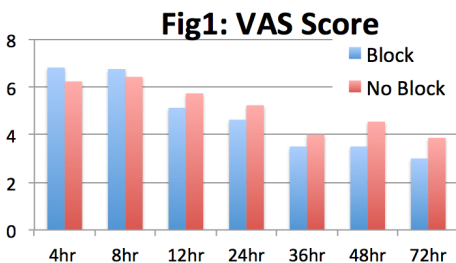
²Boston University Medical Center, Boston, Massachusetts, USA;

³Atlantic Orthopaedics & Sports Medicine, York, Maine, USA

Purpose: Continuous femoral and sciatic nerve blocks diminish pain and narcotic requirements after total knee arthroplasty. While sciatic block is contraindicated after plateau fractures in order to allow clinical evaluation of compartment syndrome, femoral nerve blocks may help in pain management as this block affects the anterior part of the knee. The purpose of this study was to determine whether a continuous femoral nerve block after open reduction and internal fixation of tibial plateau fractures would diminish visual analog scale (VAS) scores and/or systemic narcotic intake.

Methods: Adult patients with operatively treated tibial plateau fractures were randomized to either a control group (standard of care using an IV morphine patient-controlled analgesia [PCA]) or to the experimental group (a continuous infusion femoral nerve block [bupivacaine] in addition to the same PCA pump). The primary outcomes were pain and narcotic use. VAS pain scores were obtained at 4, 8, 12, 24, 36, 48, and 72 hours postoperatively and narcotic use was evaluated as morphine equivalents. Statistical analysis included Fisher's exact test for categorical variables and t tests for continuous variables.

Results: 42 patients were enrolled in this study. There were 21 women and 21 men aged 21-70 years (average, 49) with operatively treated tibial plateau fractures. 21 patients were randomized to receive a femoral nerve block with 5 crossovers for technical reasons. Accordingly, we analyzed 16 patients with femoral nerve blocks and 26 with standard care. There were no significant differences between the study groups regarding age, gender, or fracture type. There was no significant difference in VAS scores between the control and experimental group at any time point (Fig. 1). The total systemic morphine equivalent for the femoral block group and the control group was 375 and 397, respectively ($P = 0.76$, Fig. 2). Across groups, patients with bicondylar fractures tended to have higher VAS scores than those with unicondylar fractures and to use more narcotics although neither was statistically significant.



Conclusion: Femoral nerve blocks for postoperative pain management in tibial plateau fractures did not demonstrate an improvement in pain relief or narcotic use.

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.