

Do Local Anesthetic Arthroscopic Portal Injections Decrease Pain after Knee Arthroscopy

Background:

Knee arthroscopy is one of the most common orthopaedic procedures performed in the United States. With a continued trend towards performance driven outcomes that relies on patient satisfaction, it is of interest to the surgeon and of benefit to the patient to minimize pain after knee arthroscopy. Additionally in light of the current narcotic crisis in the United States, multimodal analgesia has become an area of focus during routine orthopaedic procedures. This includes local anesthetics like bupivacaine that have become a mainstay for targeted analgesia around surgical incisions. The purpose of this study was to evaluate the effect of local anesthetic during knee arthroscopy in improving postoperative pain.

Methods:

A prospective, randomized, controlled, non-blinded study was conducted. 277 consecutive patients undergoing simple knee arthroscopy by two fellowship trained surgeons were prospectively randomized to one of three groups which received either 20 cc of 0.5% Bupivacaine (group 1), 20 cc of 0.25% Bupivacaine (group 2), or 20 cc of normal saline (group 3). Baseline demographics including Lysholm Knee Scores were obtained. Pain was assessed using VAS scores preoperatively, 1 hour postoperatively, 4 hours, 24 hours, 48 hours, and at the 2 week follow up. A standardized number of narcotic pills were given in the form of 40 total pills of Hydrocodone-Acetaminophen 5-325 mg. Daily pill counts were self-reported by patients for the first week, and then the total number of pills consumed was recorded at the two week follow-up.

Results:

There was no difference in preoperative VAS scores amongst the 3 groups (3.0 vs 3.1 vs 3.5) ($P = 0.56$). There was a significant difference in VAS scores at 1 hour postoperatively between group 1 and 3 (3.1 vs 4.4) ($P = 0.013$) with a trend towards significance between group 2 and 3 (3.5 vs 4.4) ($P = 0.059$). There was a significant difference in VAS scores at 4 hours postoperatively between group 1 and 3 (2.9 vs 4.3) ($P = 0.001$) and between groups 2 and 3 (3.0 vs 4.3) ($P = 0.003$). There was a trend toward decreased narcotic use in the first 2 postoperative days but the overall number of narcotic pills consumed was the same by 2 weeks postoperatively.

Conclusions:

Use of local anesthetic at the time of knee arthroscopy was found to result in a significant reduction in patient reported pain scores at 1 hour and 4 hours postoperatively in this prospective, randomized controlled study. These results suggest routine use of local anesthetic as a multimodal analgesic regimen is reasonable for routine knee arthroscopy.

Level of evidence: Level I, randomized controlled trial