

# Psychological Distress in Hip Arthroscopy Patients Affects Postoperative Pain Control

Michael Q. Potter, M.D., Grant S. Sun, B.S., Jennifer A. Fraser, M.D.,  
James T. Beckmann, M.D., Jeffrey D. Swenson, M.D., Travis G. Maak, M.D., and  
Stephen K. Aoki, M.D.

---

**Purpose:** To determine whether patients with higher levels of preoperative psychological distress more frequently use a postoperative fascia iliaca nerve block for pain control after hip arthroscopy, and to determine whether a fascia iliaca nerve block is an effective adjunct to multimodal oral and intravenous analgesia after hip arthroscopy. **Methods:** One hundred seven patients undergoing hip arthroscopy were prospectively enrolled. Before surgery, patients were administered the Distress Risk Assessment Method questionnaire to quantify their level of preoperative psychological distress. Postoperatively, patients with pain inadequately controlled by multimodal oral and intravenous analgesics could request and receive a fascia iliaca nerve block. Pain scores, opioid consumption, time in the post-anesthesia care unit (PACU), and postoperative complications were recorded for all patients. **Results:** Patients with normal Distress Risk Assessment Method scores requested fascia iliaca nerve blocks approximately half as frequently (18 of 50 [36%]) as patients in the at-risk category (28 of 47 [60%]) or distressed category (7 of 10 [70%]) ( $P = .02$ ). Patients with high levels of distress also received 40% more intraoperative opioid than patients with normal scores ( $P = .04$ ). In the study population as a whole, patients who received a fascia iliaca nerve block ( $n = 53$ ) had a higher initial visual analog scale (VAS) pain score in the PACU ( $7.2 \pm 0.3$  v  $5.5 \pm 0.4$ ,  $P = .001$ ) and showed greater improvement in the VAS pain score by PACU discharge ( $-4.3 \pm 0.2$  v  $-2.1 \pm 0.3$ ,  $P \leq .0001$ ) compared with patients who did not receive a block ( $n = 54$ ). **Conclusions:** Patients with higher levels of preoperative psychological distress more frequently requested a postoperative nerve block to achieve adequate pain control after hip arthroscopy. Patients receiving a block had greater improvement in VAS pain scores compared with patients managed with oral and intravenous analgesics alone. **Level of Evidence:** Level IV, case series.

---

**H**ip arthroscopy is performed with increasing frequency for a range of indications, including femoroacetabular impingement, labral tears, removal of loose bodies, chondral injuries, synovitis, and septic arthritis.<sup>1</sup> The increased prevalence of the procedure has increased interest in ensuring adequate analgesia postoperatively.<sup>2,3</sup> Multiple authors have suggested that

femoral nerve or lumbar plexus blockade with a local anesthetic may improve postoperative pain control when compared with oral and intravenous analgesia alone.<sup>4-7</sup> Two of these studies have used prospective randomization schemes to compare the intervention under consideration.<sup>5,6</sup> However, in clinical practice, most hip arthroscopy patients are not randomized to receive or not receive a nerve block; more typically, a block is offered if a patient's pain exceeds a certain threshold postoperatively. Alternatively, a block may be performed preoperatively, although not all patients have enough pain after surgery to warrant a block. In this context, it is important to understand the factors, including psychological distress, that may lead hip arthroscopy patients to select a nerve block postoperatively.

Patients with higher levels of psychological distress commonly report greater pain scores and inferior clinical outcomes compared with patients with normal levels of distress. In particular, increased psychological

---

*From the Departments of Orthopaedics (M.Q.P., J.T.B., T.G.M., S.K.A.) and Anesthesia (J.A.F., J.D.S.) and School of Medicine (G.S.S.), University of Utah, Salt Lake City, Utah, U.S.A.*

*The authors report the following potential conflict of interest or source of funding: S.K.A. is an educational consultant for Pivot Medical and ArthroCare.*

*Received April 18, 2013; accepted November 13, 2013.*

*Address correspondence to Stephen K. Aoki, M.D., Department of Orthopaedics, University of Utah, 590 Wakara Way, Salt Lake City, UT 84108, U.S.A. E-mail: [stephen.aoki@hsc.utah.edu](mailto:stephen.aoki@hsc.utah.edu)*

*© 2014 by the Arthroscopy Association of North America*

*0749-8063/13258/\$36.00*

*<http://dx.doi.org/10.1016/j.arthro.2013.11.010>*

distress predicts a poor response to therapy, increased self-perceived pain, and decreased self-perceived function in patients with chronic low-back pain,<sup>8</sup> upper-extremity musculoskeletal pain,<sup>9</sup> and surgical spine conditions.<sup>10-12</sup> On the basis of these findings, we believe it likely that distressed patients might report increased pain after hip arthroscopy and might more frequently require nerve blocks to achieve adequate analgesia postoperatively.

The primary purpose of this study was to determine whether patients with higher levels of preoperative psychological distress more frequently use a fascia iliaca nerve block after hip arthroscopy. The secondary purpose was to evaluate whether a postoperative fascia iliaca nerve block is an effective adjunct to multimodal oral and intravenous analgesia after hip arthroscopy. We hypothesized that patients with higher levels of preoperative distress would more frequently request a nerve block to achieve adequate pain control postoperatively and that patients who received nerve blocks would show greater improvement in visual analog scale (VAS) pain scores than patients who did not receive blocks.

## Methods

Approval from our institutional review board was obtained before this study began. The inclusion criteria were patients aged 18 years or older who underwent hip arthroscopy for a primary complaint of hip pain. The exclusion criterion was an inability to complete the Distress Risk Assessment Method (DRAM) questionnaire or chronic use of opioid medications. One hundred fourteen consecutive patients scheduled for hip arthroscopy by a single orthopaedic surgeon were approached to participate in the study. Of these, 107 (94%) consented to participate and completed the DRAM questionnaire before the surgical procedure. The DRAM questionnaire is a 45-item patient questionnaire that combines the modified Zung Depression Scale and the Modified Somatic Perception Questionnaire. The modified Zung Depression Scale assesses depressive symptoms using statements such as "I feel hopeful about the future" or "I feel downhearted and sad," with patients indicating how often they feel the statement to be true. The Modified Somatic Perception Questionnaire asks patients to score how often they have somatic symptoms such as "feeling hot all over" or "muscles twitching or jumping." The scores on these 2 questionnaires are combined and used to stratify patients into normal, at-risk, and distressed groups, which represent increasing levels of depressive and somatic symptomatology.<sup>13</sup> The DRAM has been validated and shown to correlate with worsening psychological distress as measured by the more comprehensive Minnesota Multiphasic Personality Inventory.<sup>13,14</sup> It is presently used as a parsimonious method to stratify patients into groups of low, moderate, and high

psychological distress, which correspond to the normal, at-risk, and distressed designations, respectively. Patients completed a pen-and-paper questionnaire, which was then collected and sequestered by a study coordinator. The tests were scored by the same study coordinator. The treating surgeon and all others involved in providing patient care were blinded to the DRAM results. Patient enrollment began in October 2011 and concluded in November 2012.

One hour before surgery, patients received 1-time oral doses of pregabalin, 150 mg; celecoxib, 400 mg; and tapentadol, 100 mg. The possibility of a fascia iliaca nerve block was discussed, and patients gave informed consent to receive a block postoperatively if their pain control was inadequate. Hip arthroscopy was performed under a total intravenous general anesthetic using remifentanyl and propofol, with intravenous fentanyl administered during the procedure at the discretion of the anesthesiologist. The fentanyl dose was titrated to maintain a respiratory rate greater than 10 breaths per minute. Patients were admitted to the post-anesthesia care unit (PACU) postoperatively, and their pain levels were assessed with the VAS pain score. Patients who believed that their pain was inadequately controlled in the PACU had the option to request and receive a fascia iliaca nerve block. All patients, independent of block status, continued to receive oral and intravenous analgesics and were discharged from the PACU based on standard criteria. Three patients required admission overnight, in all cases for inadequate pain control.

Fascia iliaca nerve blocks were performed with a variable-frequency linear ultrasound transducer (GE Medical, Milwaukee, WI) under the supervision of specialty-trained regional anesthesiologists. By use of ultrasound guidance and an out-of-plane approach, a 22-gauge needle was positioned 1 cm lateral to the femoral nerve and deep to the fascia iliaca. Thirty milliliters of 0.25% preservative-free bupivacaine with 5 µg/mL of epinephrine was injected deep to the fascia iliaca and lateral to the femoral nerve. Expansion of the tissue plane and local anesthetic spread around the femoral nerve were visualized with ultrasound to confirm appropriate placement of the block (Fig 1).

Demographic data were collected for all patients and are reported in Tables 1 and 2. All surgical procedures were performed by a single surgeon, and the groups were similar with respect to surgical time and procedures performed. We recorded data on intraoperative opioid administration (morphine equivalents [MEQ] in milligrams), PACU opioid administration, admission and discharge VAS scores in the PACU, total time in the PACU, and admission status. Any postoperative cutaneous numbness was assessed and recorded at regularly scheduled clinic follow-up visits.

Download English Version:

<https://daneshyari.com/en/article/4043080>

Download Persian Version:

<https://daneshyari.com/article/4043080>

[Daneshyari.com](https://daneshyari.com)