

Editorial Commentary: Hip Arthroscopists Can Reduce Postoperative Opioid Use



Ashley Disantis, P.T., O.C.S., and RobRoy Martin, P.T., Ph.D., C.S.C.S.

Abstract: Despite the harrowing opioid crisis in the United States, the use of opioids to combat musculoskeletal pain continues to be widespread. In the setting of hip arthroscopy, approximately one-third of patients are on opioids while awaiting surgery to address the pain that results from femoracetabular impingement syndrome. In addition, the use of opioids to address pain postoperatively is common practice. With the rapid rise of hip arthroscopy in the United States, it is paramount that other modes of pain relief are promoted by surgeons in conjunction with allied health professionals, such as physical therapists. In fact, early physical therapy has been shown to decrease the use of postoperative opioids by 10%. The use of complementary and alternative therapies should be common practice in the in the orthopaedic setting to assist in reducing the number of opioids used for both pre and postoperative pain management. While this may be a small piece of the opioid crisis puzzle, it is up to all of us in the medical community to do our part and change the direction of the current opioid crisis.

See related article on page 530

In the past 2 decades, there have been 470,000 opioid-related deaths in the United States, with 50,000 of these deaths occurring in 2019. Furthermore, the use of prescription opioids to combat chronic pain accounts for one-third of these deaths.¹ Despite the United States representing <5% of the world's population, 80% of the global opioid supply and 99% of the global hydrocodone supply is consumed in this country.² It also has been noted that opioid-naïve patients are at risk of chronic opioid dependence when undergoing surgery.³ With orthopaedic surgeons responsible for 8.8% of surgical cases, hip arthroscopists, along with the allied health professionals who assist with postoperative care, play a large role changing the path of the current epidemic.⁴ The study by Bloom, Kirby, Thompson, Baron, Chee, and Youm⁵ entitled "Acetaminophen Versus Percocet for Postoperative Pain in Hip Arthroscopy" is timely, given the movement toward reducing the use of opioids for postoperative

pain control. There is a growing need to identify appropriate nonpharmaceutical avenues for postoperative pain management and reverse the current opioid crisis in the United States, especially in those who are at a greater risk for relying on opioids.

Pain has been referred to as "the fifth vital sign" according to Dr. Mitchell Max.⁶ This increased recognition may have amplified patients' awareness and demand for immediate reduction in pain.^{6,7} In 1995, the Food and Drug Administration approved the use of Oxycontin as an appropriate nonaddictive medication for reducing pain.⁸ Furthermore, Purdue Pharmaceuticals heavily marketed its safe and effective use for pain relief.⁸ Prescription of this opioid became standard practice in orthopaedic offices, as they were unaware of the addictive properties. In 2020, Purdue Pharmaceuticals pled guilty to 3 criminal charges relating to fueling the opioid crisis, amounting to an 8.8-billion dollar settlement and the drug maker filing for bankruptcy. Research studies aimed at reducing the use of opioids for pain management in orthopaedic settings are paramount in putting an end to unnecessary use of opioids to manage musculoskeletal pain. The article by Bloom et al.⁵ adds to the current body of research to help reduce the use of opioids for pain relief in hip arthroscopy.

The use of hip arthroscopy targeting femoroacetabular impingement syndrome (FAIS) is one of

Duquesne University (A.D., R.M.) and University of Pittsburgh Medical Center (R.M.).

The authors report no conflicts of interest in the authorship and publication of this article. Full ICMJE author disclosure forms are available for this article online, as [supplementary material](#).

© 2020 by the Arthroscopy Association of North America
0749-8063/201821/\$36.00

<https://doi.org/10.1016/j.arthro.2020.11.035>

the most rapidly increasing orthopaedic surgeries to date.⁹ FAIS is a common cause of hip pain and disability in those with nonarthritic hip pain, with hip arthroscopy being successful in improving pain and function while producing high patient satisfaction.¹⁰⁻¹³ Of these patients awaiting arthroscopic surgery, approximately one-third are on opioids to address preoperative pain.^{14,15} The most important risk factor for prolonged opioid use is preoperative use.¹⁶ In addition, many postoperative protocols include the use of opioids to combat surgical pain. It is important to note the use of opioids in this population may continue beyond the immediate postoperative period.¹⁶⁻¹⁹ Many patients develop chronic pain because they undergo a prolonged workup, seeing multiple health care providers before an accurate diagnosis is made. With inaccurate diagnoses and inappropriate treatment interventions, both surgical and nonsurgical, these patients fail to find pain relief and are therefore more likely to require pain medications. This is not helped by the “quick-fix” nature of our society, as even with a timely diagnosis, pain medication may be seen as the path of least resistance compared with other interventions.

The study by Bloom et al.⁵ assessed whether a postoperative prescription of acetaminophen could reduce the consumption of narcotics following hip arthroscopy for FAIS. This randomized control trial compared 2 groups, a control group receiving the standard of care of 1-2 tablets of 285 mg/325 mg oxycodone–acetaminophen every 6 hours as needed and a treatment group receiving 650 mg acetaminophen every 6 hours for pain. If patients in the treatment group required more than 3 mg of acetaminophen in a 24-hour period, 5 mg of oxycodone would be prescribed. The results demonstrated no statistically significant difference between the number of narcotics used throughout the first postoperative week between the control and treatment groups, 6.325 pills and 5.688 pills respectively. In addition, there was no statistical difference between pain using a visual analog scale at 1-week postoperatively.

While this study highlights the fact that acetaminophen does not reduce the number of opioids needed for pain control following hip arthroscopy, the biggest take away is quantity of opioids prescribed to all patients seems to be much too high. The control group used on average 6 of the 28 tablets that were prescribed to them, leaving on average 22 tablets in the medicine cabinet or to be thrown away. Doesn't it seem like we are playing with fire by overprescribing these medications? A recent qualitative study by Dekker et al.²⁰ assessed patient and clinician incentives and barriers for opioid use and prescription in musculoskeletal illness. The authors reported patients felt opioids should be used with caution. In contrast, clinicians reported a tendency

to default to opioid use out of habit.²⁰ I think this is a case of “old habits die hard.” It is up to the medical providers to nip opioid use in the bud by heavily educating patient on other proven safe and effective modes for pain relief. This includes nonsteroidal anti-inflammatory drugs, cryotherapy, soft-tissue mobilization, massage, therapeutic exercise, meditation, acupuncture, and guided imagery. Many of these treatments are performed under the supervision of a physical therapist. In fact, the Centers for Disease Control and Prevention and the American College of Physicians recommend nonpharmacologic pain management as the first line of defense for musculoskeletal pain.^{21,22} Instead of prescribing the 28 tablets (or any amount for that matter) to patients, maybe we would be better served by determining patient characteristics that lead to increased use of these medications. In Bloom et al.,⁵ the number of tablets used ranged from 0 to 28 tablets. What characteristics make up the individuals who took zero tablets? What about those who took 28 tablets? If, as medical and allied health professionals, we can determine patient characteristics that lead to high usage of postoperative opioids, we could better serve these patients by setting their expectations on postoperative pain and offering different forms of nonpharmacological solutions to their pain. In addition, maybe there are coping mechanisms we could learn for those who took a lower number of the prescription and apply those techniques to similar patients.

There is a growing body of research supporting the use of complementary and alternative therapy to reduce postoperative pain. In regards to physical therapy, Sun et al.²³ found a 10% reduction in opioid use with early physical therapy in patients with musculoskeletal pain. This is consistent with our experience as we introduce physical therapy on postoperative day 1 after hip arthroscopy, incorporating early range of motion exercises. The biggest benefit to early physical therapy is that the patient must leave the house, which forces them to get up, dressed, and go to the clinic. To accomplish this, they must complete a sit-to-stand transfer, climb stairs, perform a car transfer, and ambulate, among other things. We find these activities are confidence boosters, showing patients that they do not need to spend a week on the couch. Early, controlled movement and functional activity is relatively pain-free and in fact encouraged. Many times during preoperative education with patients regarding postoperative physical therapy, we hear “there is no way I am getting on a bike the day after surgery.” This same patient tells us on postoperative day 1 “I thought this was a crazy idea but I feel much better!” Furthermore, we can teach simple passive range of motion exercises, such as pendulums, to caregivers to assist with the postoperative recovery. Pendulums are

commonly used by physical therapists in the early postoperative period to reduce joint stiffness and formation of adhesions in turn promoting healing and lowering the rate of complications.^{24,25} If patients understand that moving is going to be tolerable, shouldn't we assume they will rely less on opioids as they understand the pain will be manageable?

There will be outliers to this approach, for instance, those who required 28 tablets in the analyzed study during postoperative week 1. We have a responsibility as health care providers to identify risk factors to increased opioid use. Perhaps in this case we offer extensive preoperative and postoperative education as well as other complementary therapies. In a recent study, Ailts et al.²⁶ assessed if complementary alternative therapy interventions, including social influence theory, mobility, guided imagery, and tai chi-based breathing techniques, reduced the amount of oral morphine equivalents in patients following total joint-replacement surgery. The authors reported a significant reduction in use of oral morphine equivalents following complementary alternative therapy intervention, specifically the number of doses per day and the amount per administration.²⁶ This study supports the use of these therapies in postoperative pain management. These therapies are safer and like produce an overall reduce cost burden on the health care system.

It is up to all health care professionals in the orthopaedic setting to change the narrative by removing the stigma of complementary alternative therapy and educating patients on appropriate pain management strategies. We together can reduce the number of opioids used in a postoperative setting and offer other safe and effective avenues to patients. We can improve pain management further by determining those at risk for high levels of postoperative opioid use and offering them alternative interventions more effective for pain management.

References

1. Volkow ND, McLellan AT. Opioid abuse in chronic pain—misconceptions and mitigation strategies. *N Engl J Med* 2016;374:1253-1263.
2. Manchikanti L, Singh A. Therapeutic opioids: A ten-year perspective on the complexities and complications of the escalating use, abuse, and nonmedical use of opioids. *Pain Physician* 2008;11:S63-88 (2 suppl).
3. Sun EC, Darnall BD, Baker LC, Mackey S. Incidence of and risk factors for chronic opioid use among opioid-naïve patients in the postoperative period. *JAMA Intern Med* 2016;176:1286-1293.
4. Schoenfeld AJ, Jiang W, Chaudhary MA, Scully RE, Koehlmoos T, Haider AH. Sustained prescription opioid use among previously opioid-naïve patients insured through TRICARE (2006-2014). *JAMA Surg* 2017;152:1175-1176.
5. Bloom DA, Kirby D, Thompson K, Baron SL, Chee C, Youm T. Acetaminophen versus Percocet for postoperative pain in hip arthroscopy. *Arthroscopy* 2021;37:530-536.
6. Max MB. Improving outcomes of analgesic treatment: Is education enough? *Ann Intern Med* 1990;113:885-889.
7. Baker DW. History of The Joint Commission's Pain Standards: Lessons for today's prescription opioid epidemic. *JAMA* 2017;317:1117-1118.
8. Van Zee A. The promotion and marketing of oxycontin: Commercial triumph, public health tragedy. *Am J Public Health* 2009;99:221-227.
9. Kemp JL, Collins NJ, Roos EM, Crossley KM. Psychometric properties of patient-reported outcome measures for hip arthroscopic surgery. *Am J Sports Med* 2013;41:2065-2073.
10. Chambers CC, Zhang AL. Outcomes for surgical treatment of femoroacetabular impingement in adults. *Curr Rev Musculoskelet Med* 2019:271-280.
11. Jamil M, Dandachli W, Noordin S, Witt J. Hip arthroscopy: Indications, outcomes and complications. *Int J Surg* 2018;54:341-344.
12. Philippon MJ, Briggs KK, Yen YM, Kuppersmith DA. Outcomes following hip arthroscopy for femoroacetabular impingement with associated chondrolabral dysfunction: Minimum two-year follow-up. *J Bone Joint Surg Br* 2009;91:16-23.
13. Robertson WJ, Kadrmaz WR, Kelly BT. Arthroscopic management of labral tears in the hip: A systematic review of the literature. *Clin Orthop Relat Res* 2007;455:88-92.
14. Frank JM, Harris JD, Erickson BJ, et al. Prevalence of femoroacetabular impingement imaging findings in asymptomatic volunteers: A systematic review. *Arthroscopy* 2015;31:1199-1204.
15. Harris JD. Editorial commentary: Hip preservation and opioids. *Arthroscopy* 2020;36:1608-1611.
16. Westermann RW, Mather RC 3rd, Bedard NA, et al. Prescription opioid use before and after hip arthroscopy: A caution to prescribers. *Arthroscopy* 2019;35:453-460.
17. Anciano Granadillo V, Cancienne JM, Gwathmey FW, Werner BC. Perioperative opioid analgesics and hip arthroscopy: Trends, risk factors for prolonged use, and complications. *Arthroscopy* 2018;34:2359-2367.
18. Jacobs CA, Hawk GS, Jochimsen KN, et al. Depression and anxiety are associated with increased health care costs and opioid use for patients with femoroacetabular impingement undergoing hip arthroscopy: Analysis of a claims database. *Arthroscopy* 2020;36:745-750.
19. Mancuso CA, Wentzel CH, Kersten SM, Kelly BT. Patients' expectations of hip preservation surgery: A survey study. *Arthroscopy* 2019;35:1809-1816.
20. Dekker AE, Kleiss I, Batra N, et al. Patient and clinician incentives and barriers for opioid use for musculoskeletal disorders a qualitative study on opioid use in musculoskeletal setting. *J Orthop* 2020;22:184-189.
21. Qaseem A, Wilt TJ, McLean RM, Forciea MA, Clinical Guidelines Committee of the American College of Physicians. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline

- From the American College of Physicians. *Ann Intern Med* 2017;166:514-530.
22. Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. *MMWR Recomm Rep* 2016;65:1-49.
 23. Sun E, Moshfegh J, Rishel CA, Cook CE, Goode AP, George SZ. Association of early physical therapy with long-term opioid use among opioid-naive patients with musculoskeletal pain. *JAMA Netw Open* 2018;1:e185909.
 24. Sauber R, Saborio G, Nickel BM, Kivlan BR, Christoforetti JJ. Pendulum exercises after hip arthroscopy: A video technique. *Arthrosc Tech* 2016;5:e897-e900.
 25. Willimon SC, Briggs KK, Philippon MJ. Intra-articular adhesions following hip arthroscopy: A risk factor analysis. *Knee Surg Sports Traumatol Arthrosc* 2014;22:822-825.
 26. Ailts I, Bell M, Blankespoor M, et al. Biopsychosocial pain management and its effect on postoperative opioid use. *S D Med* 2020;73:198-201.