Title: Efficacy of an opioid free pain control regimen in young patients undergoing arthroscopic labrum repairs: A randomized controlled trial

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Introduction: Glenoid labrum tears are common injuries seen in younger athletes. In the appropriately indicated patient, these tears are often repaired arthroscopically. Opioids have historically been the mainstay of postoperative analgesia in these patients[1], however the reliance on prescription opioids has contributed to the increase in opioid dependence and the evolving opioid epidemic[2]. Opioid misuse has become the leading cause of unintentional injury and death among adolescents in the United States, with data reflecting a 384% increase in opioid-only overdose deaths in this population between 1999 and 2018[3]. With a rapidly growing interest in non-opioid perioperative management for orthopedic procedures, this study aims to evaluate the analgesic effect of a non-opioid multimodal pain management regimen versus an opioid containing multimodal regimen on postoperative pain control in adolescents and young adults undergoing arthroscopic labral repair.

Material & Methods: A single-center, prospective, randomized controlled trial following CONSORT guidelines was conducted from February 2023 to April 2025 (Clinicaltrials.gov registration number NCT05974423). Opioid-naive patients between 15 and 25 years of age undergoing an arthroscopic labrum repair (CPT 29806 or 29807) were randomized into the standard postoperative pain protocol group (5 oxycodone 5 mg tablets 1 tablet every 6 hours as needed, acetaminophen 1000 mg every 8 hours, and ibuprofen 800 mg every 8 hours as needed) or the experimental non-opioid postoperative pain protocol group (acetaminophen 1000 mg every 8 hours and ibuprofen 800 mg every 8 hours as needed only). All patients received an interscalene nerve block. Demographics, comorbidities, daily morphine milligram equivalents (MME) consumed for 14 days following surgery, daily visual analog scale (VAS) pain scores for 14 days following surgery, and pain control satisfaction scores were collected.

Results: A total of 23 patients were included in this analysis, with 12 randomized to the experimental group and 11 randomized to the control group. Only 1 experimental patient requested oxycodone postoperatively. A total of 19 patients (82.6%) did not consume any postoperative opioids, including 11 (91.7%) in the experimental group and 8 (72.7%) in the control group. There were no statistically significant differences in mean daily MME consumption ($p > 0.05$), total MME consumption (experimental 6.1 (20.4) vs control 2.4 (4.8), $p = 0.38$), individual daily VAS pain scores ($p > 0.05$), or overall mean VAS pain scores ($p = 0.71$) between groups over the 14-day postoperative period. Satisfaction with pain control was also comparable, with no significant difference between cohorts ($p = 0.58$). After the 14-day postoperative period, the median response in both groups was “very satisfied,” reported by 87% ($n = 20$) of patients.

Discussion: This study found no significant differences in postoperative daily MME consumption, total MME use, VAS pain scores, or pain control satisfaction between young patients prescribed a non-opioid multimodal pain regimen and those prescribed oxycodone following arthroscopic labral repair. 82.6% of the patients did not require postoperative opioids, suggesting that opioids may not be necessary for effective postoperative pain control in this population. These findings support the viability of non-opioid regimens and may help shift prescribing practices, reducing opioid exposure among young adults and contributing to efforts to combat the opioid epidemic.

Level of Evidence: I

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References:

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