Opioid Prescription and Refill Patterns Following Periacetabular Osteotomy: A Comparative Analysis of Postoperative Pain Control with an Epidural Catheter Versus Periarticular Injection

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INTRODUCTION: Periacetabular osteotomy (PAO) is commonly performed in young, opioid-naive patients. There is limited evidence to guide optimal perioperative anesthesia strategies that minimize opioid use while providing pain control. This study compares postoperative opioid prescription and refill rates between patients receiving an epidural catheter for postop pain control and those receiving a periarticular injection (PI) with local anesthetic during PAO.

METHODS: A total of 724 patients who underwent PAO between 2010 and 2022 were included, before and after the transition to PI in 2016. The mean age was 24.8 years and 86.5% were female. Patients were grouped by anesthesia type: epidural catheter (N=333) or PI (N=391). In the PI group, there were two subgroups receiving weight based ropivacaine, ketorolac and epinephrine or liposomal bupivacaine. The transition to PI coincided with an institutional reduction in the recommended number of opioid tablets prescribed at discharge. The primary outcomes were morphine milligram equivalents (MME) of opioid prescription at discharge, total opioid exposure (MME of discharge medications plus refills within 30 days), and opioid refill within 30 days. Patients were classified as opioid-exposed (opioid order between 8 and 90 days prior to the date of surgery) versus opioid-naïve. Demographics, comorbidities, and perioperative variables were compared using chi-square or Fisher's exact tests for categorical variables and Kruskal-Wallis tests for continuous variables.

RESULTS: Demographics, comorbidities, and baseline characteristics were not significantly different between the two groups. Length of stay was significantly shorter in the PI group (mean 2.2 ± 1.0 days) compared to the epidural group (3.4 ± 0.9 days; $P<.001$), while the final recorded pain score prior to discharge was slightly higher (mean 4.8 ± 1.9 vs. 4.0 ± 1.9; $P<.001$). Patients in the PI group had significantly lower discharge opioid prescriptions (median 313 MME, interquartile range [IQR] 225–388) and total opioid exposure (360, IQR 275–575) compared to those in the epidural group (discharge: 825, IQR 600–1000; total: 900, IQR 638–1100; both $P<.001$). The 30-day opioid refill rate was also higher in the PI group (34.0% vs. 19.2%; $P<.001$). Among PI subgroups, patients receiving ropivacaine had the lowest total opioid exposure (median 313, IQR 188–463 MME) compared to those receiving liposomal bupivacaine (388, IQR 300–600 MME; $P<.001$). This pattern of lower total opioid prescription but higher refill rate was observed in both opioid-naïve and opioid-exposed patients.

DISCUSSION AND CONCLUSION: Among patients undergoing PAO, the combination of a periarticular injection and decreased recommended number of discharge opioids was associated with significantly reduced opioids prescribed at discharge and in total compared to epidural catheter, yet had a higher incidence of early refills. These findings support the role of a PI with ropivacaine in opioid minimization strategies but highlight the need for tailored discharge planning to ensure adequate pain control.