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# Minimizing opioids after gender affirming orchiectomy – a multimodal pain pathway

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**Introduction:** To evaluate the effectiveness of a standardized multimodal pain pathway for gender affirming orchiectomy (GAO) in adequately addressing postoperative pain while reducing the prescribing of unnecessary opioids.

**Materials and methods:** A standardized discharge pain pathway for GAO +/- scrotectomy or testicular implants was implemented between May 2020 and March 2022. A retrospective analysis was performed on all consecutive patients who underwent GAO with a single surgeon. Patients answered five questions on postoperative pain management at their 3 week follow up.

**Results:** A total of 69 patients were included in the study. Mean age was 34.3 years (SD ± 10.5; IQR 26-39) with a mean body mass index (BMI) of 27.1 (SD ± 7.5; IQR 22.3-31). No patients were taking narcotics preoperatively.

Mean 4.7 tablets (SD ± 4.5; range 0-30) oxycodone tablets taken by GAO patients without concurrent procedures, with 33 patients (47.8%) taking fewer than 4 tablets. Thirteen patients (18.8%) required no narcotics. Four patients (5.8%) requested an additional narcotic prescription, none of whom underwent a concurrent procedure. There was no significant association between BMI and the number of oxycodone tablets taken. All patients used at least one recommended alternative therapy (acetaminophen, ibuprofen and ice packs) with 41 patients (59.4%) using all three.

**Conclusion:** Most patients achieved adequate postoperative pain control as requests for additional narcotic prescriptions were low. Almost half of patients used < 4 tablets, and all patients employed at least one alternative non-narcotic analgesic. Based on these findings, we plan to decrease the quantity of opioids on discharge.

**Key Words:** orchiectomy, gender-affirming surgery, scrotal surgery, pain pathways, multimodal pain

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## Introduction

Appropriate pain control is an important part of the recovery process after a surgical procedure to aid

mobility and accelerate the return to normal activities of daily living. Surgeons often manage pain with post-discharge opioid prescriptions to provide necessary analgesia. However, 67% of patients report having surplus opioids after urologic surgery, 91% of whom retained excess medications at home.<sup>1</sup>

Overprescribing narcotics creates potential risk for patients, with thousands of excess deaths attributed to misuse of prescription opioids, and persistent use at 1 year in 6% to 13% of patients given short term opioids for postoperative pain.<sup>2,3</sup> Patient families and

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communities are also at potential risk, with 71% of opioid abusers admitting to obtaining drugs through methods of diversion.<sup>4</sup> In general, opioid consumption is associated with the amount of opioid prescribed, and over-prescription may inherently lead to over-use.<sup>5</sup>

The American Urological Association recommends prescribing opioids only when necessary, using the lowest dose and potency to achieve analgesia.<sup>6</sup> In practice, there are individual, institutional, and geographic variations in postoperative pain pathways.<sup>7</sup> Building evidence for procedure-specific guidelines can help standardize practice and decrease the quantity of unused opioids for misuse or diversion.

Gender affirming simple orchiectomy (GAO) is a relatively low-risk outpatient surgery that can assist transfeminine and non-binary individuals in their transition. There is increasing desire among the transfeminine population for GAO as a bridge or alternative to vaginoplasty, particularly in the context of limited access to specialized centers for transgender surgery.<sup>8</sup>

There is limited literature on simple orchiectomy as a stand-alone procedure in a transgender surgical context, and to our knowledge no evidence-based guideline for postoperative pain management. We sought to evaluate the effectiveness of a standardized multimodal pain pathway for GAO in adequately addressing postoperative pain while reducing the prescribing of unnecessary pills.

## Materials and methods

This was an institutional review board approved study. We retrospectively evaluated 69 consecutive patients undergoing GAO by a single surgeon between May 2020 and March 2022. Bilateral orchiectomy was performed through a single, midline scrotal incision. The spermatic cord was transected at the level of the external inguinal ring and bupivacaine 0.5% was infiltrated subcutaneously along the incision at the time of incisional closure.

A standardized discharge pain pathway for GAO was created prior to initiation of this retrospective study as seen in Table 1. Patients with underlying liver dysfunction (e.g., cirrhosis) were excluded from receiving acetaminophen and those with underlying chronic kidney disease were excluded from receiving ibuprofen. In addition, all patients received a handout reviewing post-surgery expectations for pain and return to activity at their in-person consultation. The handout included a list of pain medications and administration instructions, including dosage and frequency. The initiation of this pathway coincided with the start of the surgeon’s practice. Therefore, there was no historical comparator available.

At their 3 week postoperative follow up, patients were asked five questions about their discharge pain management: the number of opioid pills prescribed postoperatively, number of opioids taken postoperatively, whether an additional opioid prescription was needed, what additional non-opioid pain strategies were used, and the most effective modality for controlling pain. Age, body mass index (BMI), and use of preoperative use of narcotics were also noted. We created BMI categories of underweight (BMI < 18.5), normal weight (BMI 18.5-24.9), overweight (BMI 25-29.9) and obese (BMI > 29.9). The Pearson’s chi squared test was used to identify significance between BMI and opioid use.

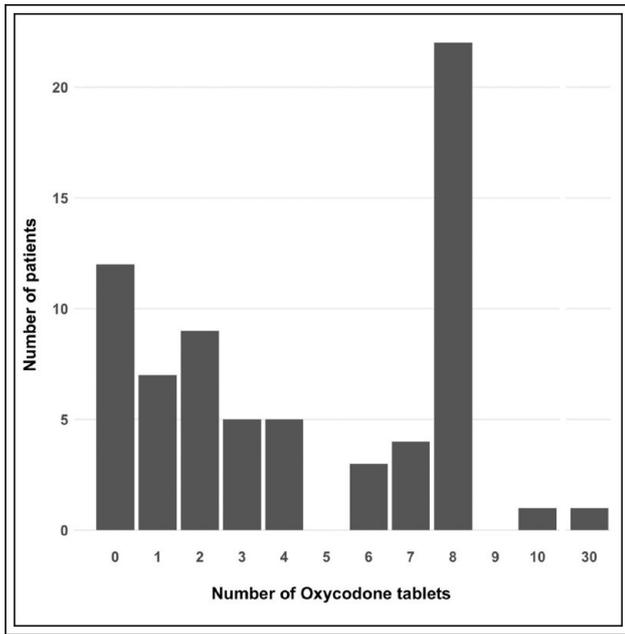
## Results

A total of 69 patients were included in the study. Of these, three patients underwent a concurrent procedure (n = 2 for scrotoectomy, n = 1 for testicular prostheses). The patient with testicular implants was prescribed 8 tablets of oxycodone 5 mg.

The mean age was 34.3 years (SD ± 10.5; IQR 26-39) with a mean BMI of 27.1 (SD ± 7.5; IQR 22.3-31). No patients were taking narcotics preoperatively. Sixty-eight patients were prescribed 8 tablets of oxycodone 5 mg, and 1 patient given 10 tablets. The mean number

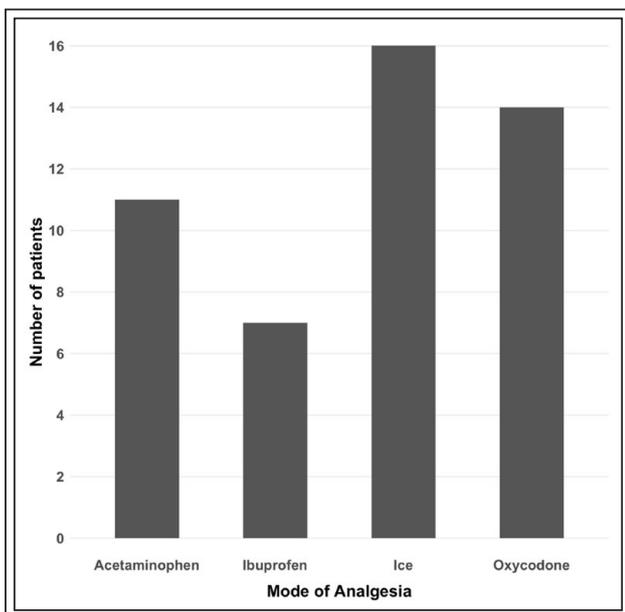
TABLE 1. Discharge pain pathway instructions

	Oxycodone 5 mg	Acetaminophen 650 mg	Ibuprofen 600 mg	Ice packs
Gender affirming orchiectomy +/- testicular implants	One tablet, every 6 hours as needed, 8-10 tablets total	One tablet, scheduled every 4 hours x 7 days	One tablet, every 8 hours as needed for 7 days	Apply every 4 hours as needed for 20 minutes at a time

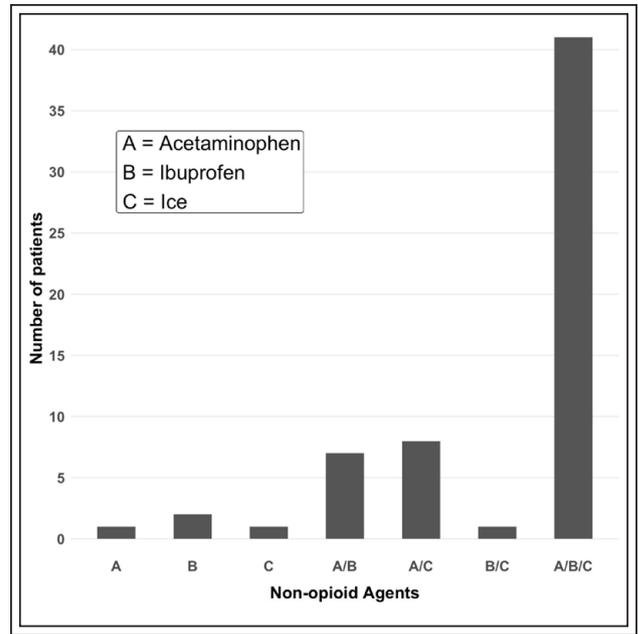


**Figure 1.** Distribution of total oxycodone tablets taken postoperatively.

of oxycodone tablets taken by GAO patients without concurrent procedures was 4.7 tablets (SD ± 4.5; range 0-30) with 33 patients (47.8%) taking fewer than 4 tablets. Thirteen of these patients (18.8%) required no narcotics, Figure 1. The distribution of oxycodone tablets used can be viewed in Figure 1. Four patients (5.8%) requested



**Figure 2.** Most effective patient-reported postoperative pain modality.



**Figure 3.** Non-narcotic pain modalities used after bilateral simple orchiectomy.

an additional narcotic prescription, none of whom underwent a concurrent procedure. Figure 2 shows the “most effective” patient reported therapies that were used postoperatively. Figure 3 characterizes the use of various non-narcotic pain combinations. All patients used at least one of the recommended alternative therapies with 41 patients (59.4%) using all three non-opioid therapies. In addition, four patients reported additional marijuana use. There was no significant association between BMI and the number of oxycodone tablets taken.

### Discussion

There is an ethical obligation to control postoperative pain and to minimize adverse effects of necessary pain management. However, achieving adequate pain control while avoiding overprescribing opioids is a challenge. In our retrospective study, we found that the overwhelming majority (> 90%) of patients who underwent GAO with the multimodal pain pathway did not seek an additional narcotic prescription. In addition, almost half of patients took fewer than 4 oxycodone tablets.

Despite the limited prescription, 47% of opioid pills went unused, and 63.7% of patients had excess oxycodone. These results are consistent with similar studies on opioid prescription for urologic and scrotal surgeries which found that 46%-60% of pills from filled opioid prescriptions went unused.<sup>9,10</sup>

In comparison, the most common scrotal surgery, vasectomy, has a wide range of opioid prescribing practices. In a 2020 survey, 51.5% of urologists routinely prescribed opioids for the procedure though 50.4% had no insight into the quantity used by patients.<sup>11</sup> A recent prospective study of patients receiving 15 oxycodone tablets after vasectomy produced results consistent with our own, showing 52% of patients using 5 or fewer tablets, 11.7% of patients requesting additional pain medications, and 24.7% using all available opioids.<sup>12</sup>

Of our patients 34.7% consumed all prescribed opioid pills, though the low rate of patients requesting an additional opioid prescription suggests discharge opioid prescriptions met or exceeded postoperative pain needs. Patients may have multiple reasons for taking all prescribed opioids and, unfortunately, we did not seek to understand patient motivations in this study. One reason cited through previous studies is that postoperative use of opioids is positively associated with the amount of opioid prescribed, implying that consumption may be driven by availability rather than pain levels or a specific procedure.<sup>9,13,14</sup> The results of our study do not qualify the differences in patient opioid use, and clarification of patient motivations for analgesics could further reduce consumption or help address under-treated pain.

Prior studies have shown that postoperative management following evidence-based guidelines with a combination of adjunct therapies leads to a reduction in opioid prescriptions and use without compromising adequate analgesia or patient satisfaction.<sup>5,13,15</sup> Efforts for establishing these guidelines are additionally important as physician-led initiatives, such as implementing a multi-modal pain pathway, lead to greater reductions in opioid use than systemic interventions, such as a prescription monitoring program.<sup>13</sup> An integral part of direct interventions is setting pre and postoperative expectations of pain management with clear instructions for how a patient can manage their postop pain. Ongoing establishment and refinement of pain pathways can improve non-opioid management while continuing to reduce the introduction of unnecessary opioids into communities.

With the results of similar studies in addition to our own findings, a reasonable next step would be to further reduce the quantity of post-discharge opioids for GAO, or attempt initial non-opioid postoperative management with opioids available as needed. A recent guide for transition-related orchiectomy noted adequate pain control for most patients with ice, supportive underwear, and acetaminophen or ibuprofen, prescribing a brief course of opioid

analgesia for a small but undefined subset of patients.<sup>16</sup> Similarly, a study on the impact of a transition from opioid to non-opioid analgesia in vasectomy showed removal of opioids led to no difference in the number of clinic phone calls, clinic visits, or ED visits, with only 4% of patients receiving an opioid prescription within 30 days of the procedure.<sup>17</sup> Finally, the multi-modal pain pathway and opioid prescription quantities used in this study may be used as a reference for similar scrotal surgeries without evidence-based guidelines, such as hydrocelectomy or spermatocelectomy.

Limitations of this study include patient recall bias, sample size, and the procedures taking place at a single institution with a single surgeon. We also do not have data on how the excess opioids were handled.

## Conclusion

A standardized pain pathway incorporating non-opioid analgesics and limited narcotics for GAO revealed that most patients achieved adequate postoperative pain control, evidenced by low requests for additional narcotic prescriptions. Almost half of patients used fewer than 4 tablets, and all patients employed at least one alternative non-narcotic analgesic for pain control. Based on these findings, we plan to continue emphasizing non-narcotic methods of analgesia and limiting discharge opioid prescriptions to 10 pills or fewer of oxycodone 5 mg. □

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