Routine Prescription of Opioids for Post-Vasectomy Pain Control Associated with Persistent Use

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Purpose: The AUA (American Urological Association) Position Statement on opioid use recommends using opioids only when necessary. We sought to determine if routine prescribing of opioids is necessary for pain control after vasectomy, and if an association exists with persistent use.

Materials and Methods: We retrospectively reviewed the charts of patients who underwent vasectomy in clinic between April 2017 and March 2018. Patients were stratified into 2 groups, including those initially prescribed opioids and those not receiving opioid prescriptions at the time of vasectomy. The initial pain medication regimen depended on the standard prescription practice of each provider. Encounters with a medical provider for scrotal pain within 30 days, subsequent opioid prescriptions and new persistent opioid prescriptions between 90 and 180 days were compared between the 2 groups using the Fisher exact test.

Results: Between April 2017 and March 2018 a total of 228 patients underwent clinic vasectomy as performed by 8 urologists. At the time of vasectomy 102 patients received opioid prescriptions and 126 received no opioid prescriptions. There was no statistically significant difference between the opioid and nonopioid groups in encounters for scrotal pain (12.7% vs 18.4%, p = 0.279). The incidence of new persistent opioid use was 7.8% in the opioid cohort compared to 1.5% in the nonopioid cohort (p = 0.046).

Conclusions: Opioids, which do not appear to be necessary in men who undergo vasectomy, were associated with persistent use in 7.8% of patients at 3 to 6 months. In the face of an opioid epidemic urologists should take action to limit over prescription of opioids after vasectomy.

Key Words: testis; vasectomy; analgesics, opioids; pain; prescription drug overuse
necessary, and to use the lowest dose possible for the shortest duration. Due to a lack of evidence it is unclear when post-procedure opioids are necessary. It has been suggested that procedure specific guidelines are needed to help address this serious issue of overprescription.

Vasectomy is one of the most common procedures performed by urologists. There is a vast array of pain control strategies following vasectomy, including over-the-counter analgesics, scrotal support, ice and prescription opioids. We sought to determine if routine prescribing of opioids would decrease the number of post-vasectomy encounters for scrotal pain, and if an association exists with persistent use.

MATERIALS AND METHODS
The protocol was reviewed by the Tripler Army Medical Center Determination Board and deemed to be a performance improvement project. Thus, it was exempt from Institutional Review Board approval.

We retrospectively reviewed the charts of all patients who underwent vasectomy in the Urology Clinic at Tripler Army Medical Center between April 2017 and March 2018. The procedure notes, telephone encounters, outpatient clinic visits and emergency room charts within 30 days of vasectomy were reviewed. The patient prescription and medication history was used to determine the initial post-vasectomy pain regimen and subsequent opioid prescriptions. We queried a statewide pharmacy database to identify all opioid prescriptions written in our military health system between 2008 and 2018 to identify patients in the study who had ever filled a prior opioid prescription.

The initial pain regimen depended on the long-standing standard opioid prescription practices of each provider. At our institution 8 providers performed vasectomy during the study period. Six providers do not prescribe opioids for patients undergoing vasectomy and 2 always prescribe opioid analgesics for post-procedure pain control. One of the 2 providers who prescribed opioids prescribed 5 oxycodone tablets for each patient and the other provider prescribed 20 oxycodone/acetaminophen tablets for each patient. During the study period the latter provider changed the practice pattern and decreased the number from 20 to 10 oxycodone/acetaminophen tablets. Patients at our clinic are randomly scheduled with providers based on next availability and not by patient selection of provider.

Baseline comorbidity data were collected, including prior scrotal/inguinal pathology or surgery, chronic pain disorders and behavioral health diagnoses. Patients were stratified into 2 groups, including those who initially received opioid prescriptions and those who did not receive opioid prescriptions at the time of vasectomy. Encounters with a medical provider for scrotal pain, subsequent opioid prescriptions within 30 days for scrotal pain and new persistent opioid use at 90 days were compared between the 2 groups using the Fisher exact test. New persistent opioid use was defined as at least 1 opioid prescription between 90 and 180 days from vasectomy in patients who did not fill an opioid prescription within the 90 days prior to vasectomy and who received an opioid prescription for pain control after vasectomy.

The presence of prior scrotal/inguinal pathology or surgery, chronic pain disorders, behavioral health diagnoses and prior opioid prescriptions were compared between the groups using the Fisher exact test. Statistical significance was considered at p < 0.05. The total number of opioid doses was summed in each group and we calculated the MME.

RESULTS
A total of 228 patients underwent vasectomy in clinic as performed by 8 urologists between April 2017 and March 2018. Of the patients 102 received an opioid containing prescription at the time of vasectomy and 126 received no opioid prescription at vasectomy.

There was no significant difference in mean age between the opioid and nonopioid groups (34.0 vs 34.7 years, p = 0.34). Overall 92% of the study patients were active duty United States military. In the opioid cohort of 102 patients 13 (12.7%) had prior scrotal/inguinal pathology or surgery, 26 (25.4%) had a chronic pain diagnosis, 31 (30.3%) had a behavioral health diagnosis and 43% had prior opioid prescriptions. In the nonopioid cohort of 126 patients 15 (11.9%) had prior scrotal/inguinal pathology or surgery, 28 (22.2%) had prior chronic pain disorders, 24 (19%) had behavioral health diagnoses and 40% had prior opioid prescriptions. There were no statistically significant differences in these comorbidity data between the groups (see table).

Of the 102 patients in the opioid cohort 13 (12.7%) had an encounter for pain within 30 days. Five of these patients (4.9%) telephoned a provider, 5 (4.9%) saw a provider as an outpatient and 3 (2.9%) went to the emergency room. In the nonopioid cohort of 126 patients 23 (18.4%) had an encounter for pain within 30 days. Six of these patients (4.8%) telephoned a provider, 10 (7.9%) saw a provider as an outpatient and 7 (5.6%) went to the emergency room. There was no statistically significant difference between the opioid and nonopioid groups in post-vasectomy encounters for pain (12.7% vs 18.4%, p = 0.279). This remained true when stratified by encounter type, including telephone encounters (4.9% vs 4.8% of patients, p = 1.00), clinic visits (4.9% vs 7.9%, p = 0.428) and emergency room visits (2.9% vs 5.6%, p = 0.279, see figure).

In the opioid cohort 2 patients (1.9%) received a subsequent opioid prescription compared to 12 (9.5%) in the nonopioid cohort, which was statistically significant (p = 0.024). Alarminglly 7.8% of patients in the opioid group had new persistent opioid use at 90 days compared to 1.5% in the nonopioid group, which
was also significant \( (p = 0.046, \text{see table}) \). In the opioid group 1,350 opioid doses were prescribed for a total of 10,005 MME. Of these doses 1,290 were prescribed at the time of vasectomy. In the nonopioid cohort 180 doses were prescribed within 30 days for a total of 1,375 MME.

**DISCUSSION**

Many patients receive the first exposure to opioids following surgery. No amount of opioids has been found safe or free from addiction risk. Recent data suggest that enough opioids for 1 day can result in long-term use.\(^1\) In our study routine opioid prescribing led to 7.8% of patients with new persistent opioid use at 3 to 6 months. This is consistent with other published reports showing a range of 6% to 10% at 90 days.\(^6-8\) Our study demonstrates that routine prescription of opioids after vasectomy would save approximately 6% of post-vasectomy encounters for scrotal pain but would lead to new persistent use in 7.8% of patients. This is an unacceptable trade-off. We hope that this finding will encourage urologists to use greater discretion when prescribing opioids.

We found that prescribing opioids at the time of vasectomy made no significant difference in the number of patients seeking medical care for scrotal pain within 30 days of the procedure. However, patients were treated differently depending on the initial post-vasectomy pain regimen. A higher number of those who did not receive opioids at vasectomy were prescribed opioids upon subsequent presentation for scrotal pain compared to patients who were initially prescribed opioids (9.5% vs 1.9%, \( p = 0.024 \)).

In our health system the emergency room is the only military pharmacy option after hours, which likely contributed to our high number of emergency room visits for scrotal pain. In patients who underwent penile, scrotal or subinguinal surgery Starks et al found a median use of 3 opioid pills.\(^9\) In our study the number of pills prescribed at vasectomy in the opioid cohort ranged from 5 to 20. Two patients who presented to the emergency room for scrotal pain received prescriptions for 40 opioid tablets. The average number of opioids prescribed in each group was 13. This suggests that patients in our study who received opioid prescriptions likely received far more than would be required for adequate pain control. The nonopioid group received 1,375 MME in a total of 180 doses, which is considerably less than the 10,005 MME and 1,350 doses of opioids in the opioid group.

Studies across multiple disciplines (urology, orthopedics, general surgery and dentistry) have

![Graph](image_url)

Return encounters for scrotal pain within 30 days did not differ significantly between opioid (blue bars) and nonopioid (orange bars) groups (each encounter category \( p > 0.05 \)). ER, emergency room.
shown that 42% to 71% of all prescribed opioids go unused. Extrapolating these data to our study would suggest that at least 567 to 959 pills could have gone unused. This is an alarming statistic which should encourage all providers to become better stewards of opioids to help limit excess opioids in the community.

A study in patients who abused opioids revealed that 54.2% obtained the opioids from a friend or relative for free. Cabo et al reported that 72% of patients with leftover opiates after urological surgery kept the excess pills. These studies suggest that excess opioids are not properly discarded and they represent a risk of abuse by people other than the intended recipient. Although the opioid crisis is a complex problem, limiting opioids after vasectomy is a small but important way that urologists can help combat the opioid epidemic in our country.

Despite much research documenting and characterizing the opioid epidemic, little is known about optimal, procedure specific pain control. To our knowledge no other study has been done to evaluate the role of opioids in post-vasectomy pain control.

All providers at our institution use a multimodal approach to pain control in patients who undergo vasectomy. Patients are counseled to use acetaminophen, ibuprofen, scrotal support and ice. The results of this study suggest that this combination is not significantly improved by the addition of opioids. Although large randomized, controlled trials are optimal to guide clinical practice, it is unlikely that these trials will be completed. For this reason we urge providers to avoid routine use of opioids after vasectomy in an effort to decrease overprescription. Alternative pain medications and long-acting liposomal local anesthetics are potential targets of future investigations to help combat the opioid epidemic.

This study is limited by its retrospective nature. However, the pain medication regimen in each patient was dictated by the standard practice of each provider. At our clinic, where 8 providers perform vasectomy, the nature of scheduling patients for vasectomy is inherently random. This is supported by the similar demographic and comorbidity data between the groups. Additionally, there was no significant difference between the groups in the number of patients who had ever received an opioid prescription prior to vasectomy. This suggests that patients who may be seeking opioids did not self-select the opioid friendly providers. We believe that this limited but did not eliminate selection bias.

The only variation in prescribing practices during the study period involved 1 provider who decreased the number of prescribed oxycodone/acetaminophen tablets from 20 to 10. Because we could not account for patients who sought followup care outside the Department of Defense system, our study potentially underestimates subsequent opioid prescriptions and persistent use. However, given that 92% of our entire cohort was active duty military, it is unlikely that a significant number of our patients sought care outside the military system.

Despite the sample size of more than 200 participants, it is possible that our study was underpowered. Additionally, we could not determine whether persistent prescriptions equated to actual opioid dependence or abuse.

Finally, our study population consisted mostly of active duty United States military. Toblin et al reported higher rates of chronic pain and opioid use in this population than in the general population of the United States. This may limit the generalizability of this study, which was performed in a military health system.

**CONCLUSIONS**

Withholding opioids does not result in a higher number of encounters for post-vasectomy scrotal pain. Although opioids do not appear to be necessary in men who undergo vasectomy, we found persistent use in about 8% of patients at 3 to 6 months if opioids were prescribed. In the face of an opioid epidemic urologists should take action to limit prescribing opioids after vasectomy.

### REFERENCES


EDITORIAL COMMENTS

The opioid epidemic is now a commonplace topic in the health care system due to its nationwide impact on public health. It is important for all health care providers to determine if an opioid prescription is truly necessary for post-procedure pain management. While many urologists choose to recommend acetaminophen or ibuprofen for post-vasectomy pain management, there are still some providers who continue to prescribe opioids. The authors sought to determine if routine prescribing of opioids is required after routine vasectomy.

By performing a retrospective chart review of patients who underwent vasectomy in a 1-year period the authors were able to determine that there was no significant difference in encounters for post-vasectomy scrotal pain between those patients who were and were not prescribed opioids at the time of vasectomy. Furthermore, they noted a higher incidence of new persistent use of opioids in the cohort of men who received these prescriptions.

In this current era of opioid abuse physicians are seeking to decrease the prescription of unnecessary opioids for various procedures. The authors have demonstrated that vasectomy is one of those procedures that does not routinely require narcotic prescription pain medication.

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This report is a robust addition to the expanding literature surrounding opioid management in urology. Other papers have focused on inpatient and outpatient opiate prescribing following major and/or subspecialty surgeries.1–3 This study clarifies opioid prescribing following vasectomy, a bread-and-butter procedure for a great many urologists. The authors found no significant difference in the amount of scrotal pain followup encounters between patients who did or did not receive opiate prescriptions after vasectomy. More alarming was the finding of persistent opioid use 3 to 6 months following vasectomy in about 8% of patients who received an opiate prescription.

These results should reduce knee-jerk opioid prescriptions for post-vasectomy pain, which generally seems to respond well to nonsteroidal anti-inflammatories and multimodal analgesia. Our thoughtful surgical work must be accompanied by sensible administration of pain medications. Improving this process starts with research to advance our understanding of postoperative pain. We also need to learn how to deal with postoperative pain comprehensively and appropriately. The burgeoning consensus is that urologists need to be involved in solving the opiate crisis. The best outcomes for our patients and our communities depend in part on better pain management in our practices.

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REFERENCES

