Tamsulosin-Induced Priapism: Report of Two Cases and Review of Literature

Usama Khater, MD, Ranjith Ramasamy, MD, and Hemendra N. Shah, MD, MCh

Abstract

Background: Tamsulosin is a widely used drug in urology practice in treating lower urinary tract symptoms of benign prostatic hyperplasia, distal ureteral stones, and ureteral stent-related symptoms. Ischemic priapism is a rare but serious adverse effect of tamsulosin. We report two cases of tamsulosin-induced priapism and reviewed available literature citing priapism as a complication of tamsulosin. We also reviewed the U.S. Food and Drug Administration Adverse Event Reporting System (FAERS) database to identify reported cases of tamsulosin-induced priapism.

Case Presentation: First patient was a 61-year-old African American male with paraplegia of 30-year duration. He developed priapism after taking first dose of tamsulosin for lower urinary tract symptoms. He presented with 18 hours of painful erection and was treated with aspiration and irrigation, followed by phenylephrine injection. The patient maintained potency after treatment. The second patient was a 24-year-old male who received tamsulosin in the emergency department as medical expulsive therapy for 11 mm distal ureteral stone. Since he had intractable pain, he underwent emergency primary ureteroscopy with laser lithotripsy as definitive treatment of his ureteral calculus. He developed intraoperative priapism that subsided postoperatively. However, he was discharged with tamsulosin to reduce stent-related urinary symptoms. He returned back to the emergency department after 3 days with persistent priapism for 3 days and needed penoscrotal corporeal decompression to treat his priapism. At 6 weeks follow-up visit, the patient has lost his potency. Although there were only 4 case reports on review of the literature, we were able to identify 46 cases reported in the U.S. FAERS database.

Conclusion: Priapism can be an adverse reaction to tamsulosin. Providers and patients should be aware about this complication to ensure early seeking of management to avoid devastating outcomes, particularly in young patients when tamsulosin is given as medical expulsive therapy for ureteral stone and stent-related symptoms.

Keywords: tamsulosin, BPH, ureteral stone, priapism, ureteral stent

Introduction and Background

TAMSULOSIN IS A SELECTIVE ALPHA BLOCKER widely used in urologic practice in the treatment of lower urinary tract symptoms caused by benign prostatic hyperplasia (BPH), distal ureteral stones, and ureteral stent-related symptoms. We present a case report of two patients who developed ischemic priapism after taking tamsulosin. The aim of this article is to highlight this rare but serious adverse effect of tamsulosin and to gain insights into its management options. We also review available literature citing priapism as a complication of tamsulosin and the U.S. Food and Drug Administration Adverse

Event Reporting System (FAERS) database to identify reported cases of tamsulosin-induced priapism.¹

Presentation of Cases

Case 1

A 61-year-old African American male with medical history of hypertension and paraplegia secondary to gunshot injury of the spine 30 years ago presented to the emergency room with a painful erection that had persisted for 18 hours. He had bothersome lower urinary tract symptoms with an International Prostate Symptom Score of 22. The patient

had an obstructed uroflow with a postvoid residue of 92 mL and prostate volume of 45 g on transabdominal ultrasonography. He had taken tamsulosin 0.4 mg at bedtime and had noticed erection the following morning. The patient had normal baseline erectile function. There was no history of any hematologic diseases including sickle cell disease and trait or recent pelvic trauma. Upon physical examination, he had rigid tender erection and soft glans.

The patient was treated with aspiration and irrigation, followed by phenylephrine injection. After injecting 100 µg of phenylephrine, his penis returned to a flaccid nonpainful status. At 3-month follow-up, the patient had regained his baseline erectile function.

Case 2

A 24-year-old male patient presented to the emergency department complaining of left flank pain secondary to 11 mm left distal ureteral stone. He was placed on tamsulosin for medical expulsive therapy by the emergency medicine physician. There was no medical history of hematologic disorders; illicit drugs use; or pelvic, perineal, or genital trauma. Since he continued to have persistent severe flank pain even after 12 hours of conservative management, he underwent primary ureteroscopy and laser lithotripsy. However, immediately after the patient received intravenous propofol, he developed a rigid erection. The erection persisted through the entire procedure despite deepening the level of anesthesia. Ureteroscopy was uneventful and atraumatic, and postoperatively, in the recovery unit, the penis had become flaccid. After an uneventful overnight stay in the hospital, the patient was discharged on tamsulosin 0.4 mg to aid in relieving stent-related lower urinary tract symptoms.

The patient returned to the emergency room on the night of postoperative day 3 with a painful erection persistent for 3 days. He was compliant with the tamsulosin prescribed to

him and had taken three pills after discharge. Upon examination, the penile shaft of the patient was erect, rigid, and the glans was soft. The management progressed in a step-wise manner following the American Urological Association guidelines. We started with aspiration, irrigation, and then gave intracorporeal injections of phenylephrine. The patient received 1000 µg of phenylephrine with no response. After failure of nonsurgical management, the patient was taken to the operating room for a penoscrotal corporeal decompression. After the procedure, the penis remained semirigid for an additional 4 days. During postoperative follow-up at 6 weeks, the patient reported complete loss of potency.

Discussion and Literature Review

In both the reported cases, priapism developed after taking the first dose of tamsulosin. The first patient developed priapism the morning after taking the first dose of 0.8 mg of tamsulosin. The second patient initially developed priapism after 8 hours of taking the first dose of 0.4 mg of tamsulosin in the operating room. He developed a priapism once again after 5 hours of taking the second dose of tamsulosin post-ureteroscopy. Although nonsurgical treatment was effective in the first case as the patient presented earlier, it was not in the second case. The failed outcome of the treatment of the second patient is consistent with the outcomes reported in the literature with similar scenarios: late presentation of priapism after taking tamsulosin and loss of potency.² In the literature, five cases of priapism after taking tamsulosin have been reported (Table 1).²⁻⁴ The mechanism that could explain development of priapism after taking tamsulosin is blockage of the sympathetic innervation that is responsible for penile detumescence. Most of the reported cases developed after the first dose of tamsulosin or during the first 2 weeks of treatment. In one reported case, priapism developed 2 years after starting tamsulosin.¹ The author attributed

TABLE 1. REVIEW OF THE LITERATURE: TAMSULOSIN-INDUCED PRIAPISM

SR. no.	Authors (year)	Indication of tamsulosin	Onset of priapism	Duration of priapism	Management	Outcome
1	Hammond et al. ³ (2014)	BPH	9 Days after interaction with boceprevir	3 days	Distal penile shunt after unsuccessful aspiration, irrigation, and PE injections	Slowly improving erection but not back to baseline
2	Spagnul et al. ⁴ (2011)	BPH	After 1 day	40 hours	Aspiration, irrigation, and adrenaline injections	Recovered erection and sexual function
3	Kilinc et al. ² (2009)	BPH	After 2 days	2 days	Proximal shunt	Complete detumescence. The patient was potent at 3 months of follow-up
4	Pahuja et al.* (2005)	BPH	After 2 weeks	28 hours	Aspiration, irrigation, and PE injections. Distal shunt	Failed to respond to medical treatment and distal shunt. Priapism persisted postoperatively
5	Dodds et al.* (2003)	BPH	After fourth dose	7 hours	Aspiration, irrigation, and phenylephrine	Responded well

*Described in Hammond et al.³

BPH, benign prostatic hyperplasia.

the late development of priapism to drug–drug interaction as the patient was started on boceprevir, a protease inhibitor used in treatment of hepatitis C virus.

Our cases highlight the importance of physician awareness and patient education regarding the remote possibility of priapism as a possible side effect of tamsulosin. The education will ensure that patients will seek early management and hence have better outcome. We reviewed the U.S. FAERS database, one of the largest pharmacovigilance databases collecting and providing data on drugs-related adverse events, for the relationship between priapism and tamsulosin. In the decade before June 30, 2019, 4038 cases of drug-related priapism were reported on the FAERS public dashboard. Out of these, 46 (1.1%) were reported solely because of tamsulosin. Of the 46 cases, 22 patients (48%) were in the age group between 18 and 64 years, 12 patients (26%) were between 65 and 85 year old, and 12 patients (26%) were unspecified.¹ In all cases reported in the literature, tamsulosin was taken for treating lower urinary tract symptoms secondary to BPH. There are no case reports of priapism developing after taking tamsulosin for medical expulsive therapy for ureteral stone. However, the FAERS database carries limitation related to spontaneous reporting, of these 46 cases, 30 (65%) of them were reported by medical professionals. This suggests significant underreporting of tamsulosin-related priapism in the medical literature.

Conclusion

Priapism can be an adverse reaction to tamsulosin. Providers and patients should be aware of this complication to ensure early management and to avoid devastating outcomes, particularly in young patients with excellent erectile function. Counseling should be provided, especially to young men, when tamsulosin is given off-label as medical expulsive therapy for ureteral stone and/or for treatment of stent-related symptoms.

Disclosure Statement

No competing financial interests exist.

Funding Information

No funding was received for this article.

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Address correspondence to:
Hemendra N. Shah, MD, MCh
Department of Urology
University of Miami Miller School of Medicine
1400 NW 10th Avenue
Miami, FL 33136
USA

E-mail: drhemendrashah@yahoo.co.in

Abbreviations Used

BPH = benign prostatic hyperplasia
FAERS = Food and Drug Administration Adverse
Event Reporting System

Cite this article as: Khater U, Ramasamy R, Shah HN (2020) Tamsulosin-induced priapism: report of two cases and review of literature, *Journal of Endourology Case Reports* 6:3, 174–176, DOI: 10.1089/cren.2019.0157.