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(CASE REPORT)

Priapism secondary to tamsulosin: A case report

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Abstract

Priapism is a rare urological emergency, characterized by prolonged erection unrelated to sexual stimulation, with a high risk of irreversible complications. We report the case of a 67-year-old patient, with no notable history, treated with tamsulosin 0.4 mg/day for benign prostatic hyperplasia. Three days after initiation of treatment, he presented with ischemic priapism persisting for more than 72 hours. Clinical examination and further investigations, including cavernous blood gases (pO_2 9.7 mmHg, pCO_2 89 mmHg) and Doppler ultrasound, confirmed low-flow priapism. Conservative treatments (intra-cavernosal ephedrine injections, aspiration) failed, necessitating multi-stage surgical management: Winter shunt, cavernospongiosus T-shunt, then proximal Quackels-type shunt, having allowed complete detumescence. The potential pathophysiological mechanism lies in the inhibition of sympathetic tone by tamsulosin, leading to excessive relaxation of cavernous smooth muscle. This case highlights the need for clinicians to recognize this rare but severe complication and to act swiftly to preserve erectile function. When prescribing alpha-blockers, it is essential to inform patients of this risk beforehand.

Keywords: Priapism; Tamsulosin; Priapism secondary; Medical treatment; LUTS

1. Introduction

Priapism, defined as a continuous erection of the penis without any sexual desire and with a duration of more than 4 h, was first described in 1845.

It can be divided into three subtypes: veno- occlusive (ischemic, low flow), intermittent (stuttering) and arterial (non-ischemic, high flow).

Induced priapism may appear as a side-effect of intracavernosal injection (papaverine, prostaglandin E, phentolamine or a combination thereof) or drug ingestion (antidepressants, alpha-adrenergic blockers, (4-8) marijuana,(9) androstenediol and sympathomimetic agents [both alpha- and beta-mimetic agents]; it can also occur as a result of heparin treatment or secondary to some other diseases, including leukemia, sickle cell anemia, perineal and penile trauma and abscess of the corpora cavernosa. Although differentiation of the forms of priapism might appear a straightforward task, the etiology remains unknown in about 50% of cases while, in the case of induced priapism, the cause is known to be iatrogenic.

When priapism is prolonged for more than 4---6 h, it may be accompanied by pain and represent a medical emergency requiring urgent treatment: if untreated, it may be followed by fibrosis of the corpora cavernosa and, ultimately, permanent impotence.

Here, we present a case report and review the literature concerning priapism secondary to tamsulosin treatment.

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2. Case report

A 67-year-old man, with no relevant medical or surgical history. and treatment of benign prostatic hyperplasia with tamsulosin 0.4 mg once daily for 3 days prior to his consultation , to the emergency room of our institution in February 2025 with a priapism of more than 72 hours . During the interview, the patient denied ingesting any other drugs or toxic substances and reported no intracavernous injections of drugs nor any previous pelvic or abdominal trauma. Physical exploration of the genitalia revealed a normal appearance and the absence of any relevant findings, with the exception of a fully erect penis and palpable fibrosis.

During the first observed episode of priapism, dated February 2025 and lasting approximately 72 hours, an intra-cavernous injection of a vasoconstrictor was performed (1 ml ephedrine in 9ml saline, repeated 3 times at 20-minute intervals) followed by aspiration of cavernous blood and irrigation of the corpora cavernosa with saline solution; A sample of cavernosal blood was sent to our laboratory and showed pO2 9.7 mmHg, pCO2 89 mmHg. Color Doppler ultrasound shown low-flow priapism, an abdominopelvic angioscan was performed with no abnormalities.

Finally, because of the persistent erection, a winter shunt (Figure 1) was carried out, with no success, followed by a T-shunt cavernospongiosus shunt (Figure 2), with no detumescence.

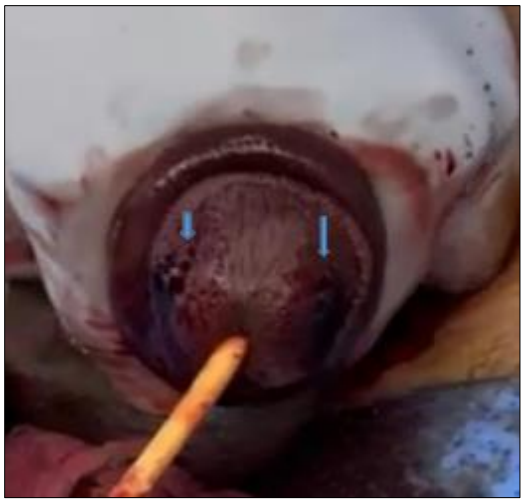

Figure 1: Winter shunt.

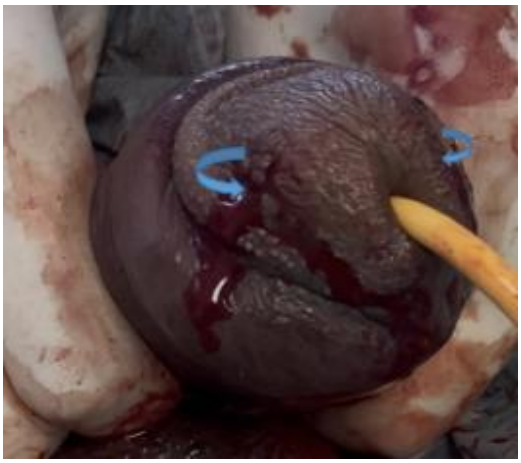

Figure 2: T-shunt cavernospongiosus shunt

This led to the use of a proximal Quakels-type shunt with lateral spongiocavernosal anastomosis via a perineal incision (Figure 3). This finally resulted in a detumescence of 70 percent on the first day and then in totality on the three days following the operation.

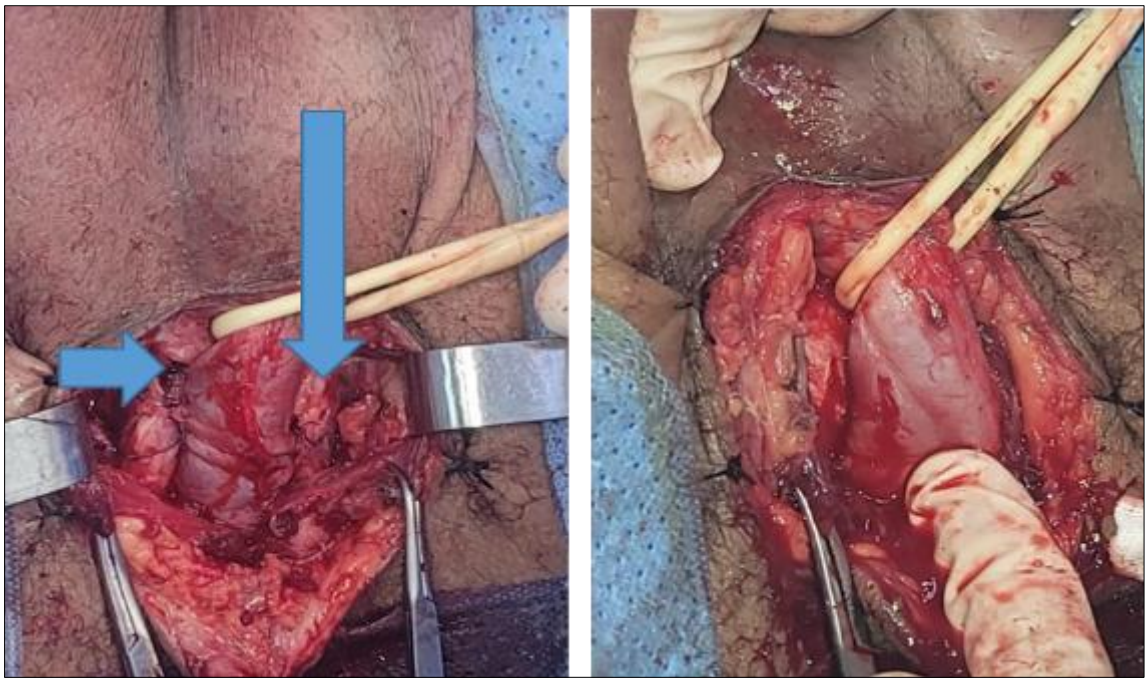

Figure 3 - 4: Proximal Quakels-type shunt with lateral spongiocavernosal anastomosis via a perineal incision

A full etiological work-up was carried out, including a complete blood count, serum protein and hemoglobin electrophoresis, fasting blood glucose and glycated hemoglobin, uric acid, which came back without any abnormality.

When reconstructing the course of the disease, the patient stated that this was his first episode of priapism after taking tamsulosin and that he had never had this kind of problem before. We decided to suspend medical treatment with tamsulosin (replaced by phytotherapy for his SLU) and, during the following 9 months of follow-up, the patient did not present any further episodes of priapism.

3. Discussion

It is described that alfa-blockers inhibitors such as tamsulosin has been used for provoke smooth muscle cells relaxation and, sometimes, it may have a role also in cavernous smooth cells.

Various modulators and transmitters have a role in the pathophysiology of erection, erectile dysfunction and priapism. It is also known that administration of mediators that inhibit contraction of penile cavernosal smooth muscle cells can give rise to secondary priapism. In rare instances, priapism has been reported in patients receiving alpha-adrenergic blockers such as prazosin, terazosin and doxazosin,(4) and a few articles have reported tamsulosin to be among the agents that may be involved in the pathogenesis of priapism.(6,8,10)

Tamsulosin is a subtype of the selective alpha- blockers (it is an antagonist of alpha-1- adrenoreceptors) that is effective in treating the symptoms of BPH and also appears to exert some pharmacological effect on smooth muscle cells of the corpora cavernosa.(6) The mechanism responsible for priapism is probably an alpha- adrenergic blockade which directly inhibits the sympathetic impulse of detumescence. (4,11). This drug is the only alpha-blocker for which a placebo-controlled study has proved a positive effect on overall sexual function.(11) In the described case, the temporal relation between ingestion of tamsulosin and manifestation of priapism strongly suggests a causal relationship.

Tamsulosin is a very commonly used drug that is now also available as a generic drug in many countries and has been used for a number of years to improve LUTS, usually in patients with associated obstructive symptoms.(12) As indicated by reports in the literature, we believe that priapism secondary to tamsulosin treatment is indeed a rare event but we nevertheless consider that patients should be advised about potential for priapism subsequent to ingestion of tamsulosin or similar agents.

4. Conclusion

Priapism secondary to tamsulosin treatment is a rare event that has seldom been reported in the literature. The mechanism of action is unclear, but the priapism may arise due to a pharmacological effect on smooth muscle cells of the corpora cavernosa. Despite the limited frequency of this pathological finding, patients should be advised about the possibility upon prescription of tamsulosin or similar agents.

In cases of priapism secondary to medical treatment, interruption of treatment will avoid further events.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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