

CASE REPORT

Steroids, drugs and stuttering priapism; the rock-and-roll lifestyle of a 24-year-old man

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SUMMARY

The authors present a case of a 24-year-old, poorly controlled insulin-dependent type 1 diabetic Caucasian man who presented to the emergency department, with a painful erection of 36 h duration that had failed to resolve with conservative management. This was the patient's seventh priapism, with his most recent attendance 1 week previously for which he underwent a distal cavernosal shunt. He admitted to taking several recreational drugs, including marijuana and cocaine, during the preceding few days, in addition to the long-term use of the oral anabolic steroid oxandrolone. He had no family history of sickle cell disease or trait. On examination, a tensely erect penis was noted. A diagnosis of stuttering priapism was made and 750 mL of blood subsequently drained via a distal corporoglandular shunt resulting in successful detumescence.

BACKGROUND

There are no published reports of priapism among anabolic steroids users in the medical literature, and this case importantly documents this risk. Furthermore, this particular case emphasises the stuttering nature of priapism in cases of poor compliance and when recreational drugs are consumed in combination with anabolic steroids. Awareness of these dangers in young adult males is likely to be minimal or overlooked; often, there is an overriding fixation on body image, improved sporting ability and/or social inclusion.

By ensuring that medical professionals understand the importance of undertaking a comprehensive social and drug history, we hope that the aetiology of priapism can be addressed, and the dangers of recreational drugs reaffirmed in order to avoid the long-term risk of corporal fibrosis and impotence.

CASE PRESENTATION

A 24-year-old man presented to accident and emergency, following a 36 h history of a painful, non-resolving erection. The patient was otherwise well, with normal routine observations. Despite multiple attempts by the patient himself at reducing the erection with ice, exercise and ejaculation, detumescence was unsuccessful, prompting presentation to the emergency unit.

The patient had presented with priapism on six other occasions over the preceding year, with the most recent admission occurring 7 days prior. The patient had required drainage of previous erections

under both local and general anaesthetic, however, symptoms simply reoccurred following treatment.

The patient was a poorly compliant insulin-dependent type 1 diabetic and had self-administered Lantus and Novorapid since the age of 12 years. He was a very athletic man, undertaking vigorous exercise on a daily basis.

Recreational drug use was hesitantly admitted, with the patient stating intermittent use of cocaine, cannabis and anabolic steroid use since the age of 17 years. Of particular note on this occasion was the sustained use of the oral anabolic steroid oxandrolone for 2 months before his most recent episode of priapism. He was a non-smoker and drank alcohol socially on most weekends, and there was no significant family history worthy of note.

On examination, a tender, erect penis was noted with obvious bruising from previous drainage. Testicular and abdominal examination was unremarkable, and there was no history or sign of pelvic or spinal trauma. On the basis of the multiple previous episodes of symptoms of ischaemic priapism, a diagnosis of stuttering priapism was made.

INVESTIGATIONS

Priapism is a clinical diagnosis, and the cause should be confirmed by the blood gas analysis of blood aspirated from the corpus cavernosum. All routine admission blood tests were unremarkable.

Intracorporal blood gas analysis confirmed the acidotic, hypoxic and hypercarbic state of ischaemic priapism. A non-invasive alternative or supportive investigation in cases of doubt may include a colour duplex ultrasonogram of the cavernosal arteries, to differentiate between low-flow veno-occlusive (ischaemic) and high-flow (non-ischaemic) priapism where blood flow is assessed in the corpus cavernosum.

Other useful investigations may include urine toxicology to look for evidence of illicit drug use, and full haematological investigations for sickle cell patterns.

DIFFERENTIAL DIAGNOSIS

Priapism is clinically defined as an erection lasting beyond 4 h in the absence of sexual stimuli and/or desire. The condition is named after the Greek fertility God *Priapus*, who is often depicted with an oversized erect penis.

It is a medical emergency that requires immediate diagnosis and early detumescence to prevent corporal ischaemia that may lead to fibrosis and ultimately future erectile dysfunction. Owing to perceived embarrassment, patients often present late, making recognition and prompt treatment vital.



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Initial priority should be given to differentiating between the three important forms of priapism: ischaemic, non-ischaemic and stuttering (recurrent). The pathophysiology of stuttering priapism and ischaemic priapism are identical, however, the recurrence and intermittency of symptoms differentiates the two diagnoses.

In this case of stuttering priapism, a veno-occlusive cause was suspected—given the severe ischaemic pain, tender corpora and profuse penile rigidity—and confirmed with corporal blood gas analysis. This presentation differs from that of non-ischaemic priapism—where the penis is unlikely to be fully rigid and which is non-painful and most commonly caused by a trauma to the penis, pelvis or spine.

If suspected at initial presentation, other underlying causes of ischaemic priapism such as penile or prostatic malignancy, haematological malignancy and sickle cell anaemia, should be ruled out.

TREATMENT

Priapism should first be treated by conservative measures, which, if unsuccessful, as in this case, should be followed by surgical intervention in a stepwise fashion. Oral systemic therapy is not recommended in the treatment of ischaemic priapism.

Conservative approaches include the use of ice packs placed on the shaft of the penis, exercise (to increase heart rate and venous return), masturbation and sex. There is little data in the literature relating to the effectiveness of such conservative approaches, presumably as those individuals who obtain detumescence do not present to healthcare services.

Next in our case, in combination with a local anaesthetic dorsal penile block, aspiration of corporal blood with a 19 G needle failed to result in detumescence. Then, intracavernosal injection of phenylephrine (a highly selective α 1-adrenergic receptor agonist to cause vasoconstriction) at a concentration of 200 μ g/mL up to a total of 1 mg was attempted but failed. Owing to the β -mediated inotropic and chronotropic cardiac effects in cases of systemic absorption, intracavernosal injection of sympathomimetics should always be given in conjunction with heart rate, blood pressure and pulse oximetry monitoring.

Finally, a distal shunt successfully achieved detumescence by adoption of the Winter technique (performed under general anaesthetic), which diverts blood from the corpora cavernosa to the corpus spongiosum, using large-bore intravenous cannulae inserted bilaterally into the tips of the corporal bodies through the glans. Had this failed, then alternative distal shunts would have included the Ebbehøj (to form a communicating fistula using a scalpel) and Al-Ghorab (excision of the tips of the corpora using a scalpel) techniques. Should these have also failed, then proximal shunts, such as Quackels or Greyhack shunts, or insertion of a penile prosthesis, would have been sought at a supraregional andrology centre.

Following detumescence there was some residual rigidity at the base of the penis suggesting that irreversible corporal fibrosis had occurred. The patient was referred urgently to the supraregional andrology centre as an outpatient for consideration of penile prosthesis, and he was discharged on oral co-amoxiclav and bicalutamide to prevent physiological erections precipitating further priapism.

OUTCOME AND FOLLOW-UP

The patient was discharged pain-free and awaits an urgent specialist follow-up appointment for possible prosthetic intervention. Advice to cease use of anabolic steroids, cannabis and cocaine was well received, and the importance of good diabetic control was emphasised.

DISCUSSION

There are numerous case studies describing priapism in the literature, although most are based on individuals with predisposing haematological conditions such as sickle cell disease or following perineal trauma.^{1–4} Several pharmacological agents have been implicated in the development of the condition—in those with such predisposition—from psychotropic medications to anticoagulant therapy, and illicit drugs such as cocaine and marijuana.^{5–6}

Cases have described use of antiandrogenic agents to treat priapism successfully by blocking testosterone's adherence to androgen receptors, although these agents would not be suitable for all individuals.⁷ If detumescence cannot be obtained there is an increased risk of erectile dysfunction with implications on both physical and psychological well-being of the patient.⁸

Penile prosthesis as proposed in this case have been found to reduce corporal scarring and subsequent penile shrinkage and to reduce the length of time taken to regain sexual function and should be considered in all individuals with recurrent priapism.⁹

This case report describes the use of anabolic steroids as an aetiological factor leading to stuttering priapism. To the best of our knowledge, this is the only case documented where use of the anabolic steroid oxandrolone contributed to the occurrence of stuttering priapism.

Learning points

- ▶ Early identification and treatment of priapism is essential to ensure positive outcomes, with the aim of avoiding development of its physical and psychological consequences.
- ▶ Thorough drug and social history-taking, alongside clinical examination, can indicate recreational drugs as triggers for stuttering priapism, which may otherwise go unnoticed.
- ▶ Medical professionals should take every opportunity to inform steroid users of the risk of priapism, especially when steroids are taken in combination with recreational drugs. Ensuring these patients cease taking causative drugs promptly and safely can help to avoid stuttering priapism.

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