SHORT REPORT

Low-flow priapism needs recognition and early correct treatment

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Low-flow priapism is a rare condition whereby there is a persistent, painful erection. The patient often presents late because of embarrassment. Failure to recognise this as an emergency and instigate immediate treatment may lead to cavernosal tissue ischaemia, fibrosis and subsequent long-term impotence. A case of low-flow priapism, that demonstrated a lack of urgency and understanding is discussed. An internet-based literature search provided a treatment regimen with resolution of tumescence.

A 63-year-old man with a history of prazosin-treated hypertension presented to the emergency department with a persistent erection. He was in severe pain and had tried cold showers and serial masturbation for up to 10 h at home to avoid hospitalisation. On clinical examination, he had hard, tumescent corpora with a flaccid glans, which is characteristic of priapism.¹ Abdominal and testicular examination was unremarkable. The surgical team on call were inexperienced with priapism and were unsuccessful in contacting the consultant urologist. An internet-based literature search was performed in the emergency department and a review article¹ was found that suggested a management plan.

Lignocaine (1%) without epinephrine was instilled along the corpora and a large-bore venflon was inserted directly into the body of the corpus, ensuring that the placement was well away from the urethra (fig 1). A total of 30 ml of congealed blood was aspirated with only partial resolution of tumescence. Second-line management included infusion of phenylephrine (an α agonist) through the same venflon at a concentration of 20 μ g/ml. After four serial infusions of 10 ml aliquots, detumescence was achieved and the priapism resolved. The next day, there was much bruising but no recurrence of symptoms and the gentleman was discharged home. The general practitioner was contacted with advice to stop prazosin. A 4-week follow-up appointment showed that the gentleman

was making good progress, with some degree of sexual function.

DISCUSSION

Priapism is a rare condition defined as a "... pathological condition of penile erection that persists beyond or is unrelated to sexual stimulation ...".² When priapism occurs, there is congestion of the corpora cavernosae leading to tumescence with sparing of the glans and corpus spongiosum. If not treated as an emergency, long-term impotence may result.³

Priapism can be classified by penile blood flow into low flow or high flow.⁴ Low flow is the most prevalent and occurs as a result of venous outflow obstruction leading to tumescence. Blood stagnates in the sinusoids of the corpora cavernosae and as the PO_2 falls, the resultant acidosis leads to fibrosis and eventual impotence.³ This may occur within 12 h,² hence the urgency in treatment.

Aetiology varies, but includes drugs (in particular prazosin), substance misuse (ecstasy, cocaine and Viagra), malignancy and haematological conditions. Most cases, however, are idiopathic. High flow is much less common and is usually secondary to trauma. Here the outflow remains patent; thus, dynamic equilibrium soon occurs and the resultant erect penis is not painful. Acidosis is not a feature and so fibrosis (and impotence) is rare.² This needs prompt treatment, but is not regarded as an emergency because of the reversible element.

Sickle cell-related priapism forms a separate but important group whose treatment involves hydration, analgesia, oxygen and possible exchange transfusion.

Management must begin with basic life support (as necessary), history, examination and special investigations. History is important in distinguishing between the two types (table 1). A detailed drug history is essential. At this point, it is important to inform the patient about the long-term risk of impotence and that it is the condition, not the treatment, that may ultimately cause sexual dysfunction. Documentation of this conversation is imperative.¹ Examination must include looking for hepatosplenomegaly and lymphadenopathy, along with a detailed examination of the genitalia. Special investigations may include a sickle test, urinary drug screen and cavernosal blood spectrometry. Figure 2 shows an algorithm for emergency management.¹

Figure 1 Diagram of where to aspirate.¹

Table 1 Features of priapism³

Low flow	High flow
Painful	Painless
Rigid erection with sparing of glans	Soft erection
Sexually inactive	Sexually active
Often presents within hours	Long history
No history of trauma	Often history of trauma
Ischaemic corpora	Well-oxygenated corpora

Figure 2 Management of low-flow priapism.

CONCLUSION

Low-flow priapism must be taken seriously. Education of junior hospital staff about its management will be of enormous value

to the patient, as this will reduce any delays in treatment, especially in today's culture of cross covering of surgical specialties. It must be treated as an emergency within 12 h of onset, and this will often mandate treatment in the emergency department, especially if urology is off-site. In most departments, there is access to the internet, and this must be borne in mind as an information resource at times when the clinical solution is not immediately apparent. Hopefully, this case report will help in the education process.

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REFERENCES

- 1 **Bell S**. Priapism—a review of aetiology and management. <http://www.baeta.co.uk/BAETALIBRARY/ctr/Priapism.pdf>.
- 2 **Walsh PC**. *Campbell's urology*, 8th edn. Philadelphia: Saunders, 2002, 1610–4, 1661–3.
- 3 **Paulter SE**, Brock GB. Priapism: from priapus to the present time. *Urol Clin N Am* 2001;**28**:391–403.
- 4 **Lue TF**, Hellstrom WCG, Mcacinch JW, *et al*. Priapism: a refined approach to diagnosis and treatment. *J Urol* 1986;**136**:104–8.