CASE REPORT

Penile strangulation due to plastic bottle neck: a surgical emergency

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SUMMARY

Use of various metallic and non-metallic constricting objects on the external male genitalia for increasing sexual performance or because of autoerotic intentions is an unusual practice that can potentially lead to penile strangulation with severe consequences. Depending on the type of constricting material, emergency removal of such an object is a challenge. We report a case of a 45-year-old man who presented to our hospital with a hard plastic bottle neck at the base of his penis that led to penile strangulation. The constricting agent was successfully removed. The patient had an uneventful recovery.

BACKGROUND

Penile strangulation or entrapment is an unusual entity that requires urgent treatment due to its potential devastating complications. Prompt decompression and restoration of the penile circulation by emergency surgeons is necessary to avoid a fatal sequel. Several cases have been reported in the medical literature, with some describing serious injuries such as necrosis, gangrene and amputation of the penis.¹⁻⁵

Penile strangulation by use of various objects (eg, rings, rubber bands, metal rings, steel bearings, etc)¹⁻³ has been reported in the literature across all ages. In adults these constricting bands are placed deliberately by the person himself to influence blood circulation and thereby obtain prolonged erection and/or sexual pleasure.^{2,4} In children they are used instead to prevent enuresis and incontinence.⁵ We report a case in which a hard plastic bottle neck was used as a constricting device, which was successfully removed.

CASE PRESENTATION

A 45-year-old man presented to surgical emergency with a markedly swollen penis. He had placed his penis in a hard plastic bottle for masturbation and prolongation of sexual pleasure 18 h earlier. The bottle's neck trapped and constricted the base of his penis. He reported pain and swelling of the penis, which was dribbling urine. On local genital examination, gross oedema of the penis with the bottle neck around its base was detected (figure 1). There was no change in skin colouration or texture and no alteration of sensation.

TREATMENT

After an initial attempt at removal with a surgical blade was unsuccessful due to the thickness of the plastic, a pair of thick blade Mayo scissors was

utilised successfully. There was no damage to the penis at the strangulation site or on the distal section. The penis was cleaned with povidone-iodine solution, an antibiotic ointment was applied and the penis was dressed with glycerine gauze; a bandage was applied to reduce the oedema. This was followed by bladder catheterisation using a 16 Fr Foley catheter.

OUTCOME AND FOLLOW-UP

The penile oedema subsided 2 days later and the patient was discharged in satisfactory condition after catheter removal.

DISCUSSION

In 1755, Gauthier reported the first case of a foreign body externally applied to the penis.⁶ The magnitude of penile strangulation injuries range from simple penile engorgement to ulceration, necrosis, urinary fistula or even gangrene. A variety of metallic and non-metallic rings causing constriction to the external genitalia have been described in the literature across all ages.² The adult population frequently reports erotic or autoerotic goals when intentionally placing constricting devices.^{7,8} Paediatric patients may present with either accidental or intentional placement of a strangulating object, most commonly strands of hair, as a part of acquired constriction ring syndrome.⁵ The most often reported cause of children, or their guardians, intentionally placing hair around the penis is to prevent enuresis.

Bhat *et al*⁴ graded these injuries as follows.

- **GRADE I:** Oedema of distal penis. No evidence of skin ulceration or urethral injury.

Figure 1 Penile strangulation caused by plastic bottle neck.

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- ▶ GRADE II: Injury to skin and constriction of corpus spongiosum but no evidence of urethral injury. Distal penile oedema with decreased penile sensation.
- ▶ GRADE III: Injury to skin and urethra but no urethral fistula. Loss of distal penile sensation.
- ▶ GRADE IV: Complete division of corpus spongiosum leading to urethral fistula and constriction of corpus cavernosa with loss of distal penile sensation.
- ▶ GRADE V: Gangrene, necrosis or complete amputation of distal penis.

The severity of damage depends on the time interval between initiation of the foreign body causing anatomical and physiological disruption to the penile circulation and removal of the constricting device. Because each corpus cavernosum has an individual artery, and the thickness of Buck's fascia and corporal tissue resists pressure on the deep vessels, gangrene is an uncommon presentation.⁹ The superficial skin devoid of subcutaneous tissue is first to be affected. Besides local complications of penile strangulation, systemic complications include renal failure due to obstructive uropathy, etc.

Various methods have been described for removal of constricting devices. When choosing a method, the material to be removed, severity of penile injury and availability of tools must be taken into account.⁸ However, some settings may prove to be difficult for the following reasons: first, the penis may be extremely engorged, precluding any efforts to compress the penis manually to allow the foreign body to slip off with the

string method.¹⁰ Second, the foreign body (especially metallic) may be too hard to be severed by common surgical instruments. Third, the tools needed might not be universally available in a surgical emergency. Although using a saw or drill is a time-consuming process, there have been anecdotal reports of power driven cutting tools being employed with excellent results.^{8 11 12} However, if the penis is gangrenous, necrotic or other modalities have failed, surgical intervention in the form of degloving or amputation of the penis may be indicated, depending on the degree of tissue injury.

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Learning points

- ▶ Penile strangulation is a urological emergency with potentially severe clinical consequences, especially in the urethra and corpus cavernosa.
- ▶ The primary aim is to restore blood supply and micturition as soon as possible.
- ▶ Treatment is individualised depending on available resources and expertise.

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