Case Report

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A metallic ring penile foreign body causing penile strangulation: a rare case report

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ABSTRACT

Strangulation of penis is a rare clinical entity, which requires urgent urological management to prevent its devastating outcomes. The treatment of penile strangulation is immediate decompression of the constricted penis to facilitate free blood flow. Many different techniques have been described in literature to remove the constricting penile foreign bodies, but there is no universally accepted technique. Each case needs individualized handling in removing the foreign body. The procedure should be done with as little discomfort to the patient as possible and under anesthesia. Here we present to you a case report on a rare case of a metallic ring penile foreign body causing penile strangulation.

Keywords: Penile foreign body, Metallic ring, Strangulation of penis

INTRODUCTION

Common causes of penile foreign body include autoerection and psychiatric disorders such as mental retardation and dementia. Penile foreign bodies usually present late because most patients feel guilty and delay seeking help, so a very careful medical history and a thorough physical examination are essential. Symptoms may range from penile swelling, pain, gangrene, lower abdominal pain, hematuria, pyuria or urinary retention. Definitive management includes complete removal of the foreign body. Owing to the association of psychiatric disorders, a thorough further evaluation is recommended to prevent future such episodes.

CASE REPORT

A 45 year-old male presented to our hospital with complaints of progressive pain and swelling over the penis. Detailed history revealed placement of 2 metallic rings over the root of the penis 6 hours ago for the purpose

of sexual gratification. Repeated attempts by the patient to remove the object had failed. A thorough physical examination revealed a grossly edematous penis. The base of the penile shaft was encircled by 2 metallic rings. There was small breach in the penile skin distal to the constricting rings. Scrotum and testes were normal.



Figure 1: A metallic ring foreign body is seen causing compression over the root of the penis and gross edema and swelling of the distal penis.

Gentle attempts to slip off the rings by application of lignocaine jelly and manual compression did not succeed. Metallic ring cutter was tried for cutting the metallic ring, but in vain. We used an IFT, rolled it over the penis, brought it proximal to the metallic ring and then slowly unwound it pushing the ring distally under anesthesia. After repeating this step multiple times, we were able to remove it completely intact, in toto.

After removal of the constricting rings, there was edema and hyperesthesia of penis and slight skin necrosis. There was no difficulty in micturition. The patient was treated with iv antibiotics and was discharged after 3 days in stable condition.

DISCUSSION

Penile strangulation by constricting devices is uncommon but a urological emergency. One of the common reasons for placement of these constricting devices around the penis is auto-eroticism.² The presence of these constricting devices results in a potential penile compartment syndrome with an initial obstruction of both venous and lymphatic outflow distal to the device followed by arterial inflow obstruction, ultimately leading to tissue ischemia and necrosis.³ The choice of object and the resulting clinical consequences are widely variable and therefore the treatment options have to be individualized as per the clinical scenario. Consequences of penile strangulation can be urethro-cutaneous fistula, penile skin necrosis, penile fibrosis, and complete gangrene of penis. A thorough history including duration of strangulation and physical examination to assess type and composition of the constricting object, local tissue temperature, color, sensation, edema, voiding difficulty and viability of affected tissues is vital before deciding upon the treatment.5

Grading scales for penile strangulation (penile injury grading system by Bhat et al)⁵

Grade I

Edema of distal penis. No evidence of skin ulceration or urethral injury.

Grade II

Distal edema, skin and urethral trauma, corpus spongiosum compression and decreased penile sensation.

Grade III

Skin and urethral trauma, no distal sensation.

Grade IV

Separation of corpus spongiosum, urethral fistula, corpus cavernosum compression, no distal sensation.

Grade V

Gangrene, necrosis, or complete amputation of distal penis.

High grade injuries have been reported to be higher with non-metallic objects as compared to metallic objects. The probable cause for this may lie in the fact that non-metallic objects are more elastic and can produce more severe constriction on the penis. The duration of incarceration plays an important role in the severity of the clinical presentation. The associated embarrassment is often the cause of delayed presentation with consequent sequelae.

Silberstein et al. reported a higher incidence of high-grade injuries when patients presented after 72 hours as compared to patients presenting within 72 hours.6 In our case, patient presented within 6 hours and therefore was having low grade injuries. So, prompt removal of the constricting foreign body should be the primary objective of treatment.

Although various techniques for removal of the constricting objects have been reported, the widely variable clinical presentation precludes any single technique to be universally accepted. The choice of removal technique is dictated by size, type and composition of the object, duration of strangulation, grade of injury, experience of the surgeon and availability of the equipment.⁷ Methods described to remove the strangulating object include: manual removal by use of cutter, saws, drills, decompression by aspiration of blood or degloving incision around coronal glans and sequential compression, by using string technique in which a string such as thread, suture, umbilical tape, intravenous drip, Vaseline gauze is passed proximally beneath the ring, using remainder of the string bound tightly to the glans. The proximal end of the suture is lifted and unbound from the penis so that the encircling object is pushed gently over wrapped and molded penis.

The series of steps may need to be repeated several times before the object can be completely removed from the penis.⁸ Surgical technique by dorsal slit, removal of edematous prepucial skin or degloving with circumcoronal incision, retrieval of ring and subsequent approximation can be used in grade 2-3 injuries, concurrent or delayed skin grafting can be done if defect is large due to skin excision.

Advanced grade injuries can be treated with wide tissue debridement of devitalized tissue and partial thickness skin graft. Penile amputation with re-implantation using microsurgical technique for grade IV and V injuries has been suggested. In case of gangrene of penis partial or total amputation of penis can be done. Complications are directly related to duration and grade of incarceration, and include: urinary retention, urethral stricture, urethral fistula, skin ulceration, loss of penile sensation, priapism, gangrene of penile skin, subcutaneous tissue or complete

gangrene of penis.⁴ Long term follow-up with micturating cysto-urethrogram and uroflowmetry is necessary.

In most cases, close monitoring, prevention of infection, penile skin care and heparinization are sufficient to preserve the underlying tissues. Moreover, proper psychiatric evaluation for assessment of behavioral disorders is necessary in all patients to diagnose and manage any underlying cognitive impairment.⁴

Surgical procedure

Initially, we aspirated blood from the corpora cavernosa and decompressed the penis.



Figure 2: We aspirated blood from both the corpora cavernosa and decompressed the penis.



Figure 3: We passed an artery forceps beneath the metallic ring and tried to cut it using a saw/ring cutter.



Figure 4: We rolled an infant feeding tube over the penis and brought it proximal to the metallic ring, then slowly unwound it pushing the ring distally.

Then we passed an artery forceps below the metallic ring, and a metallic ring cutter (hack-saw) was tried to cut the ring, but failed.



Figure 5: We repeated this step multiple times, till finally we were able to bring the metallic ring out of the penis.

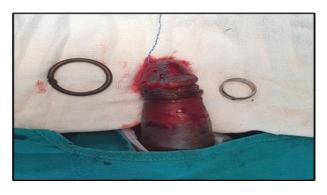


Figure 6: The immediate post-operative photograph showing both the metallic rings after they were brought out.

Hence, we took an infant feeding tube, rolled it over the penis and passed it proximal to the foreign body. Then we lifted it and slowly unwound the IFT, thereby pushing the metallic ring distally under anesthesia. We repeated this step multiple times, and finally we were able to remove the metallic ring from the penis intact, in toto.

Post-operative period

Regular cleaning and dressing was done for the penis. The skin over the penis healed well in 1-2 weeks. Post-operative period was uneventful.

CONCLUSION

Penile strangulation from constricting metallic objects is an uncommon urological emergency and requires prompt intervention to prevent complications. On the basis of published case reports, it is difficult to lay down strict guidelines about the correct procedure to be used in these cases. Each case is unique in presentation, owing to the variables involved, the type of object used, the duration of trauma, the individual anatomy, and the degree of tissue reaction to the insult. Based on the available resources, the

expertise of the treating surgeon and the condition of the affected organ, the management has to be individualized for each patient. The duration of injury is probably the single most important factor affecting the outcome of the treatment.

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