

## Metallic Ring Used for Autoerotic Purpose Leading to Serious Strangulating Penile Injury and Its Management

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### ABSTRACT

Penile strangulation caused by rings is a rare but challenging problem that a surgeon may come across. Such ringed objects may be placed by perverted men with underlying psychiatric disturbances, or for erotic and autoerotic stimulation and masturbation. Misbelief that a ring application increases and prolongs an erection may also be the cause for such activity. Incarceration of such objects causes distal oedema, ischemia, and at times, gangrene. These injuries have been divided into 5 grades, with surgery being used for advanced grades (grade IV and V). We came across 1 such case with incarceration of a metallic ball-bearing ring around the penis, which we retrieved while preserving the vascularity as well as all of the vital penile tissues, including skin.

### INTRODUCTION

Penile strangulation from metallic and non-metallic objects has been reported since 1755. The largest series of such cases was reported by Dakin in 1948, with the presenting age between 15 to 56 years [1]. We describe 1 such case of penile strangulation caused by a ball-bearing ring and the technique of its retrieval from the penis.

### CASE HISTORY

A 37-year-old male presented to the emergency department of our hospital with incursion of a metallic ball-bearing ring over

the penis 5 days before presentation, hoping to obtain sexual pleasure but was followed by the inability to withdraw the ring. On examination, a metallic ring was found around the base of the penis. The penis, distal to his ring, was grossly edematous with some areas of discolorations near the base of the penis just distal to the ring (Figure 1). **There was no retention of urine and the patient was able to pass urine with some difficulty** (a grade II injury per the grading system by Pereira et al.).

### SURGICAL TECHNIQUE

Under general anesthesia, after aspirating the corporal tissues to reduce tumescence, multiple superficial punctures were

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Figure 1. Photograph showing metallic ring around the base of penis.

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Figure 2. The ring was slid over the penis by applying gentle traction over the skin from the proximal side of the ring while simultaneously pushing the skin under the ring.

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made over the edematous skin and pressure with a hot mop was applied to reduce the edema. The ring was then slid over the penis by applying gentle traction over the skin from the proximal side of the ring while simultaneously pushing the skin under the ring from its distal side using the blunt, flat, non-blade-bearing proximal end of a Bard Parker's knife handle (Figure 2). The ring could thus, very slowly, be moved over the penile shaft up to the distal penile region where the grossly edematous prepuce presented much difficulty in withdrawing the ring. This difficulty was overcome by applying a circumferential incision over the outer preputial skin, which was then unfolded over the inner preputial skin. The ring was finally slid over the prepuce using the same principle. The ring could thus be retrieved off the penis. The area of devitalized skin over the penile shaft was excised. A rim of the rolled-out prepuce was used to cover the distal defect and was sutured over the shaft of the penis using interrupted 3-0 vicryl sutures. Finally, the patient was catheterized without difficulty (Figure 3). Broad-spectrum, antibiotic coverage and regular dressings were done. About 60% uptake of the preputial skin was seen and the raw area over the penile shaft epithelized well in 3 weeks (Figure 4). The patient is progressing well, is under

follow-up with normal uroflometry patterns at 1 month and 6 months, and has preserved erectile function.

## DISCUSSION

A variety of objects, such as wedding rings, metal plumbing cuffs, bullrings, hammer heads, and plastic bottlenecks, have been reported in various literatures for erotic purposes, which have led to strangulation of the penis [2]. Times up until presentation ranged from 3 hours to 1 month [1]. The most commonly reported devices causing incarceration are metal rings. Patients who present after 72 hours are more likely to sustain higher-grade injuries as in our case. Pereira Arias JG et al. described the grading of penile incarceration and strangulation as follows [3]:

- Grade I: Edema of distal penis. No evidence of skin ulceration or urethral injury.
- Grade II: Injury to skin and constriction of corpus spongiosum but no evidence of urethral injury. Distal penile edema with decreased penile sensation is noted.
- Grade III: Injury to skin and urethra but no urethral fistula. Loss of distal sensation present.
- Grade IV: Complete division of corpus spongiosum leading

Figure 3. Postoperative photograph showing viable skin over the penile shaft, an unfolded prepuce covering the distal shaft, and a small raw area near the base.

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Figure 4. Postoperative photograph at 3 weeks showing well epithelised wounds over the penis shaft.

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to urethral fistula and constriction of corpus cavernosa with a loss of distal penile sensation.

- Grade V: Gangrene and necrosis, or complete amputation of distal penis.

Management of such a condition can be very difficult. Failure to remove such devices can lead to significant ischemia and the loss of tissue. Removal of the strangulating object can be done by the string technique and its variants, with or without aspiration of blood from the glans, by various cutting devices and surgery.

The string technique was first used by Bucy in 1968 to remove a metal ball-bearing device from an incarcerated penis. The technique of pulling out the ring with strings (string cord, umbilical tape) with glans drainage has been successfully employed for grades I to III injuries [1]. Other maneuvers, such as the aspiration technique utilizing multiple punctures of the distal penis with 18-gauge needles into the subcutaneous tissue to drain lymphs with subsequent decompression, have also been described [1]. For grade IV injuries, wide-tissue debridement and partial-thickness skin grafting may be done [4]. Partial or total amputation of the penis is done if gangrene of the penis sets in (grade V injuries).

Recently, a surgical technique called corporal aspiration, that employs a warm moist pack, dorsal slit, circumcoronal incision,

and the removal of edematous preputial skin, was described for such a case that allowed easy retrieval of the ring. This technique can be carried out for grade II and grade III injuries when other options have failed [5]. We used a similar technique with some modification in our case. As it was not possible to pull the proximal skin, additional force was applied from the distal aspect of the ring with the blunt end of a knife handle to facilitate the retrieval of the ring. The preputial skin was used to provide cover for the penile shaft-skin defects rather than discarding it. This type of preputial skin flap is thus a "random pattern" skin flap. Besides, even if such flaps do not survive, they should provide the best coverage of the wound and promote healing of the wound bed. It is a very well known fact that "skin is the best form of dressing." Long-term follow-up, including a micturating cysto-urethrogram (MCU), uroflowmetry for urethral stricture and sexual history, and a Doppler study for erectile function, has been recommended [5].

## CONCLUSION

Penile incarceration is a surgical emergency with potentially severe clinical consequences. Early intervention and patience during surgery may help in the preservation of penile skin and vascularity. This technique is a simple and effective method for

retrieving rings off the penis, requiring the minimum amount of instruments but with maximum penile-tissue preservation.

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