




Management of accidental penile incarceration due to unusual masturbation practices

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ABSTRACT

Objective: We aimed to discuss the unusual masturbation practices performed by methods such as penile devices causing incarceration and its emergency management.

Material and methods: It is a retrospective study of cases who presented to the emergency department with penile incarceration by metallic and nonmetallic encircling objects from September 2015 to October 2020. The cases were analyzed for age, marital status, motive, type of object used, duration of incarceration, associated urinary retention, type of anesthesia used, methods of removal, complications of incarceration, and secondary procedures required to treat complications.

Results: A total of nine cases had paid emergency visit to our hospital for the past 4 years. The average age of the patients was 36.78 years. Unusual masturbation practices that underwent wrong were the common cause in most cases (77.7%). Most of cases presented after 24 hours of incident. All foreign bodies were removed under spinal anesthesia except one that was removed under penile block. Two cases (22.9%) required skin grafting and one (11.1%) underwent partial penectomy following the removal of encircling objects.

Conclusion: This study emphasizes that the penile incarceration because of unusual masturbation practices is rare as it is sparsely reported as only a few case reports in the literature. Most of the patients presented late because of the embarrassment associated with it. This emergency requires urgent intervention, and the method used to remove the foreign body depends on the resources available, duration of incarceration, grade of injury, and the type of foreign body.

Key words: Aspiration technique; incarceration of penis; metallic ring; string technique; unusual masturbation practices.

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Introduction

Penile incarceration is an unusual complication caused by metallic and nonmetallic encircling foreign bodies. The first case of penile strangulation was reported in 1755.¹ Dakin² reported the largest series of penile strangulation in the United States. Being an unusual clinical entity, it is reported in literature as single case reports in most of articles. The objects responsible for penile incarceration are usually metallic rings, plastic and glass bottles, iron pipe, ball-bearing, washers, nuts, and

rubber bands.^{3,4} The motive for placing an encircling object around penis can be an attempt to obtain sexual gratification, prolong erection, psychiatric disorders, and sometimes to control incontinence.^{5,6} These objects are usually placed over flaccid penis, and when erection occurs, they get trapped behind the glans because of engorgement and edema. The edema progresses making it impossible to remove the foreign body. It leads to a vicious circle of venous and lymphatic obstruction distal to encircling object and followed by arterial hypoperfusion that progresses to

ischemia and necrosis.⁷ Not every surgeon gets a chance to see this rare urological emergency during training. The aim of this study is to analyze the different methods to remove the foreign body and deal with the associated complications.

Material and Methods

This is a retrospective study of adult men who had presented with penile incarceration due to accidental penile strangulation by encircling objects to our hospital from September 2015 to October 2020. This study has been cleared by the ethical committee of the institute with IEC No 734U. An informed consent is obtained from all patients as per the institute protocol. The cases were analyzed for age, marital status, motive, type of object used, duration of incarceration, associated urinary retention, type of anesthesia used, methods of removal, complications of incarceration, and secondary procedures required to treat complications. Clinical history and findings of local examination like penile edema, color of skin, penile sensation, nature of the encircling object, and palpable bladder were recorded. Analgesic and prophylactic antibiotics and tetanus toxide were administered to the patients. Retention of urine relieved by either per urethral catheterization or suprapubic catheterization was noted. The encircling objects were removed by different techniques depending on severity of edema, duration of incarceration, and nature of the foreign body. Patients were observed in the postoperative period and complications if any noted and treated accordingly. All patients underwent psychiatric consultation to evaluate for any psychiatric illness.

Results

Upon analysis of the records, nine patients were identified who had been admitted to the emergency department with penile incarceration by foreign objects. The average age of patients was 36.78 years with five unmarried and four married patients. In most of patients, sexual gratification was the driving force behind the incident. Seven of the patients had used encircling

objects as masturbation tools, while one had used wedding ring to prolong his erection (Figure 1a-d). One of the patient with the age of 65 years had used metallic ring to control his incontinence (Table 1). The foreign bodies were identified as rings in five patients, pipe joint in two, plastic bottle, and a ball bearing, one in each. Most of patients presented after 48 hours of incident. Four patients had associated retention of urine with three of them had suprapubic catheterization done outside at presentation, and one had per urethral catheter placed for retention of urine. Different techniques were chosen to remove the foreign body depending on the severity of edema, duration of strangulation, and nature of the foreign body. One ring was removed under penile block by aspirating the edematous fluid and blood from glans and ring rolled down over glans. One ring was cut down by gigli saw. In rest of the cases, foreign bodies were removed intact by string technique under spinal anesthesia.

After cleaning and draping a tourniquet was applied on the shaft of penis proximal to foreign body to decrease blood flow to the penis. Then, 18G needle was used to make multiple pricks in glans, prepuce and shaft distal to the foreign body. Shaft was squeezed to flush out blood and edema. A 6Fr feeding tube was passed underneath the encircling object from distal to proximal side. The distal end of feeding tube was rolled over the distal shaft tightly and proximal end once pulled made the foreign body to roll over the encircled feeding tube (Figure 2a-d). Once the foreign body was removed, the proximal tourniquet was released and penile skin and glands observed for perfusion. Patients were observed in postoperative period. Two patients had skin necrosis that required skin grafting later because of late presentation (3.5 days). One patient who reported after 5 days had gangrene of penis and required partial penectomy.

Discussion

Penile incarceration by encircling objects is a rare but serious urological emergency with few reported cases in literature.¹ In adults, the most common reason for self-placement of these encircling objects is autoerotic practices, to prolong erection or accidental entrapment in unusual masturbation objects.⁸ In our study, it was sexual gratification by unusual masturbation practices that was most common driving force for strangulation. Many children with enuresis and adults with incontinence are worn with these objects to control incontinence.⁹ These objects are worn on the flaccid penis and get trapped because of secondary edema following prolonged entrapment. This is followed by the vicious circle of venous congestion and then arterial insufficiency leading to ischemia and necrosis of the

Main Points

- Penile incarceration is rare and mostly encountered as a complication of unusual masturbation practice.
- Delay in diagnosis is associated with complications.
- Most of the surgeons are not well versed with this surgical emergency.
- We highlight the modified string technique for the removal of encircling objects around penis.



Figure 1a-d.. (a) Penis trapped in wedding ring with suprapubic cystostomy done for retention of urine. (b) Penis trapped in metallic pipe joint. (c) Pipe joint removed intact with modified string technique. (d) Loss of epidermis following removal of pipe joint.

penis.⁷ Most of the cases present late because of the embarrassment associated with it.¹⁰ Most of the patients will try some form of treatment at home before finally giving up hope and reporting to the hospital. One of the patients actually presented after 5 days of incident. Duration of strangulation determines the severity of injury, and delayed presentation is a cause for severe injuries.⁵ Most of the patients have metallic encircling objects while reporting to hospital, reason being plastics and other devices are relatively easy to cut open at home. Retention of urine is an indirect indicator of severity of strangulation and can be relieved by per urethral catheterization or supra pubic catheterization in difficult cases.¹¹ Silberstein et al.⁸ reported retention in 19.6% of patients, but in our study, 44.45% of patients had retention of urine, and the reason may be the late

presentation. Few case reports recommend doppler study to document perfusion and viability of tissue, but it is not available all the time, and actually it will delay the primary treatment of the patient.

Silberstein et al.⁸ graded penile incarceration injuries into low-grade and high-grade injuries depending on the need of surgical intervention following the removal of foreign body. The reported incidence of high-grade injuries is 14.2%, while in our study, it was 33.34%. Two patients required skin grafting, while one had to undergo partial penectomy following the removal of foreign body. Various techniques had been described to remove the strangulating objects depending on the severity of injury, duration of strangulation, and nature of the

Table 1. Demographic Profile and Outcome

S. No.	Age in Years	Marital Status	Nature of Encircling Object	Motive	Duration of Incarceration	Retention of Urine	Grade of Injury	Removal Technique	Complication
1	37	Married	Metallic ring	Unusual masturbation	3 days	No	Low grade	Cutting by gigli saw	Nil
2	38	Married	Metallic ring	Prolong erection	4 days	Yes	High grade	String technique	Skin necrosis
3	29	Unmarried	Metallic ball bearing	Unusual masturbation	3 days	No	Low grade	String technique	Nil
4	65	Married	Metallic ring	Control of urinary incontinence	24 hours	No	Low grade	Aspiration	Nil
5	25	Unmarried	Metallic pipe joint	Unusual masturbation	3 days	Yes	High grade	String technique	Skin necrosis
6	27	Unmarried	Plastic bottle	Unusual masturbation	4 days	No	Low grade	String technique	Nil
7	33	Unmarried	Metallic pipe joint	Unusual masturbation	48 hours	Yes	Low grade	String technique	Nil
8	36	Unmarried	Metallic ring	Unusual masturbation	24 hours	No	Low grade	String technique	Nil
9	41	Married	Metallic ring	Unusual masturbation	5 days	Yes	High grade	String technique	Gangrene

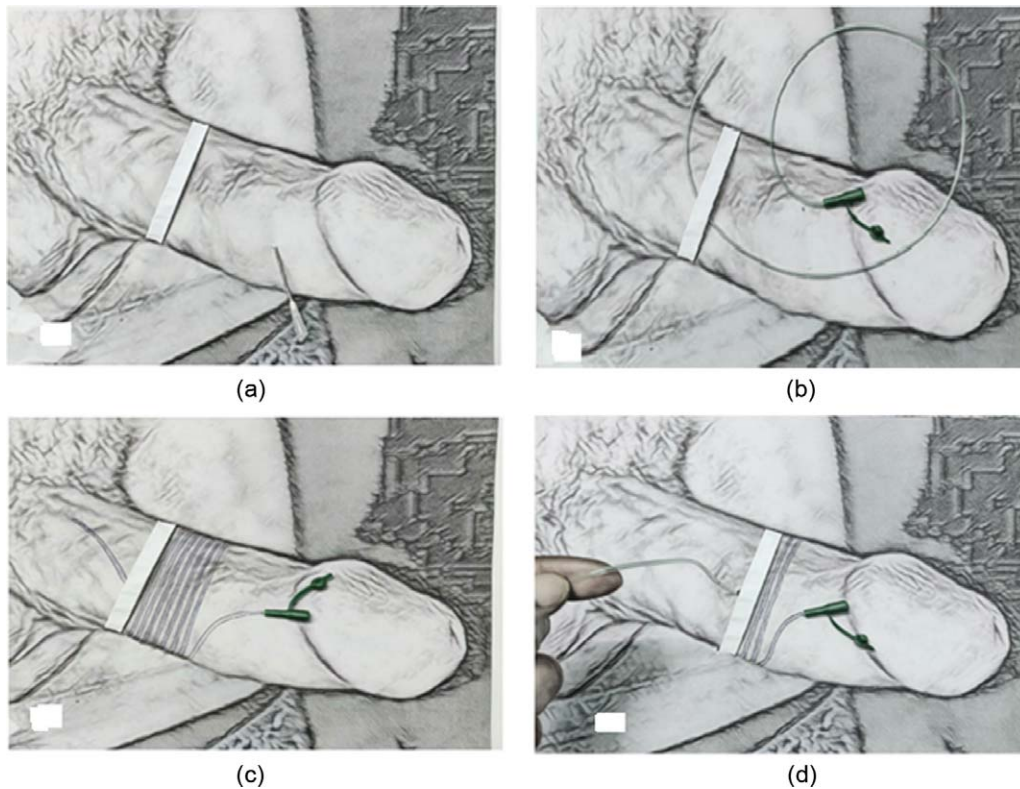


Figure 2. a-d. (a) Step 1—aspiration of fluid. (b) Step 2—passing 6Fr feeding tube underneath the encircling object. (c) Step 3—coiling the feeding tube over the edematous part. (d) Step 4—pulling the proximal end of feeding tube to make the object roll over the coiled feeding tube.

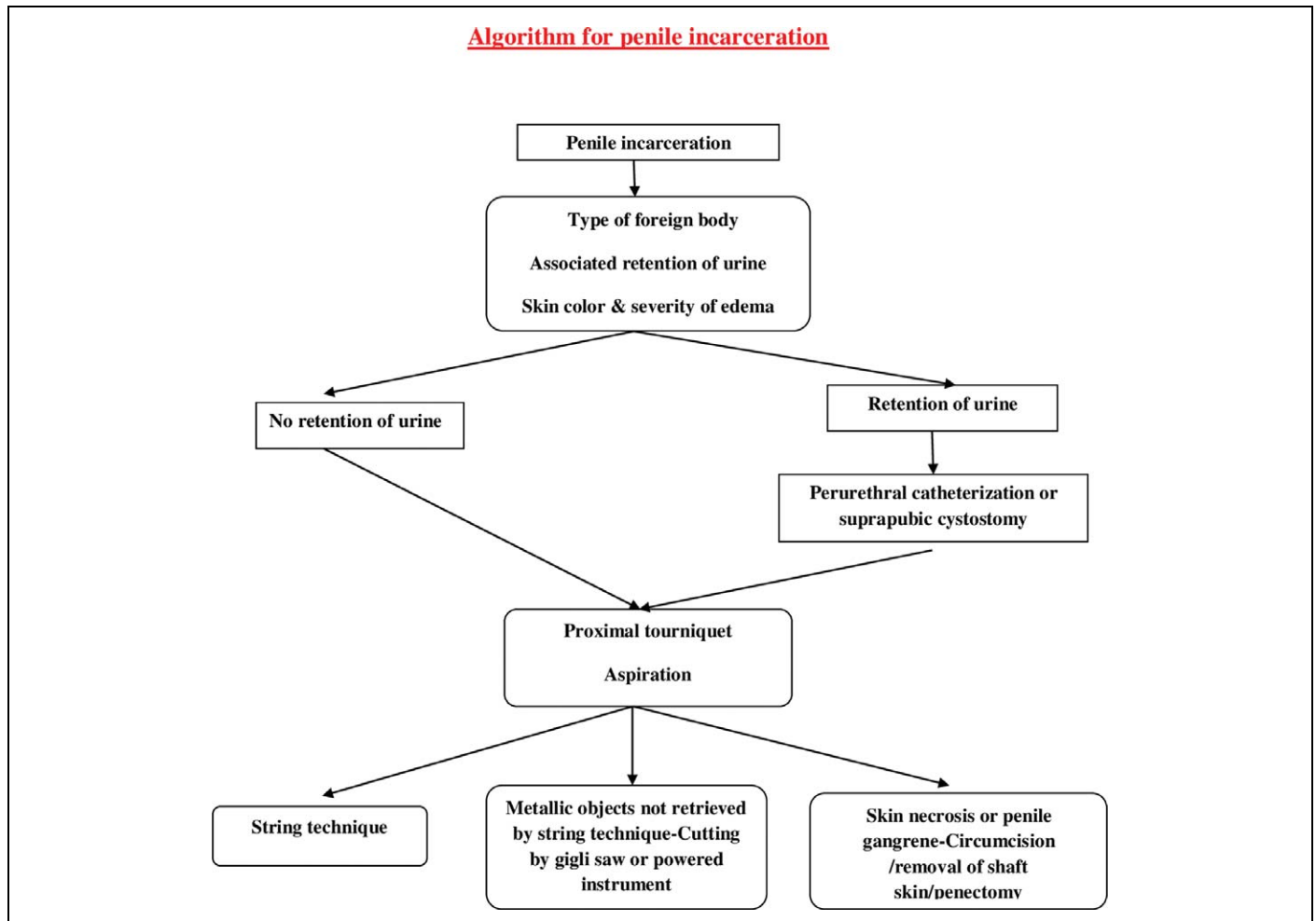


Figure 3. Algorithm for the management of penile incarceration.

foreign body. The most commonly used methods are as follows:

1. Aspiration technique where detumescence is achieved by aspirating edematous fluid and blood from glans and prepuce by large bore needle or multiple stab punctures decreasing the girth of shaft for the constricting device to be removed easily.¹²
2. Cutting devices—here the encircling ring is removed by either powered or nonpowered devices. They can be dangerous if not handled properly and lead to heating of foreign body and skin burns while cutting.^{13,14}
3. String technique is a safe and commonly used technique. It was first devised for removing rings from fingers by Flatt.¹⁵ After squeezing blood and edematous fluid from distal penis, a thread is passed underneath the encircling object from the distal to proximal end. The distal end of the thread is wrapped around the shaft all the way up to the glans. Once proximal end of the thread is pulled, the encircling object rolls over the wrapped thread over the shaft of penis and comes out over glans.¹⁶ We used a 6Fr feeding tube instead of

thread because the thin thread produces cheese wire effect on the edematous skin. Seven of our cases were safely removed by the above-mentioned method.

4. Surgical techniques such as circumcision and removal of shaft skin are used in severe injuries. Partial penectomy may be required in cases of penile gangrene.^{17,18}

Complications of the incarceration are related to the severity of injury and the duration of strangulation. There may be skin necrosis, loss of sensation, erectile dysfunction, priapism, urethral stricture, urethrocuteaneous fistula, or gangrene of penis.^{10,11} In our study, we had a case of gangrene requiring partial penectomy and two cases of skin loss requiring skin grafting.

Limitations of this study are that it is a retrospective study with limited sample size. We have not compared the modified

string technique with other methods of removal of encircling objects.

We conclude that penile incarceration is rare, and most of the cases occur because of accidental entrapment by encircling objects used for sexual gratification. Most of the patients present late because of the embarrassment associated with it. Late presentation is associated with more severe injury and complications. Being a urological emergency, it should be recognized immediately and intervened urgently to decrease the rate of complications. The methods used to remove the foreign body depend on the resources available, the type of foreign body, and the severity of injury. We have devised a simple algorithm to be followed in such cases (Figure 3). String method is an effective and safe technique to remove the encircling objects. This method is cost effective and does not require any special equipment. Patients should be followed to look for any complications of incarceration.

Ethics Committee Approval: Ethical committee approval was received from the Sher-i-Kashmir Institute of Medical Sciences Deemed University (IEC No734U).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

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