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## Removal of penile strangulation with “Novel ice pack technique”: A rare case report

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### Abstract

Patients using penile ring for libido, and erectile dysfunction are may result in penile strangulation. Often this may lead to ischemia and gangrene of the penis. The severity of strangulation depends upon the type of the device and time. A 65-year-old male presented a metallic ball-bearing device impacted at the root of the penis for >16 hrs. A preliminary examination of the penis showed an impacted root, discoloration of the skin glands of penis and loss of sensation. Surgeon's use numerous techniques to release the penile strangulations. Since penile strangulations are very rare, often the hospital may not be well equipped with instruments on the emergency basis. In the present case scenario we were able to remove metallic ring with the help of a novel ice pack technique without iatrogenic injury. The present method "Novel ice pack technique" is an add-on for the previous techniques.

**Keywords:** penile strangulation, metallic ball, constricting device, ice pack

### Introduction

The strangulation of the penis by foreign bodies is an uncommon condition that was first reported in 1755 <sup>[1]</sup>. To date only a few case reports i.e., <100 have been published on penile strangulation. Even though it is uncommon, if not treated on an emergency basis can lead to gangrene and amputation of the penis <sup>[2, 3]</sup>. The penile ring is placed on the root of the penis when there is decreased libido, and erectile dysfunction, so that it aid in penile erection or optimal sexual performance <sup>[4]</sup>. Usually heavy metal rings, hammer head, plastic bottle necks, sprockets, and plumbing cuffs are the devices used <sup>[5]</sup>. Often it can cause strangulation of the penile base and can lead to penile ischemia and gangrene. The severity of strangulation depends upon the type and time of device used. Non-metallic and thin metallic rings can be easily removed with minimal surgical intervention. However, the individual may need immediate medical attention, if there is strangulation of the root of the penis with the heavy metallic ring <sup>[6]</sup>. Most of the hospitals are not well equipped with relevant cutting tools when it comes to emergency medical management of penile strangulation. Furthermore, cutting the metallic object is skilled work and time-consuming process <sup>[5]</sup>. So, the urologist/surgeon must be aware of the equipment to cut foreign bodies as quickly as possible to manage the medical emergency. Further, there is no standard technique in literature to release penile strangulation. Hence every case is different. Surgical management of each case is done by the extent of damage and type of penile device used by the patient <sup>[7]</sup>. Therefore, in the present case report, we used a different technique - "Novel ice pack technique" in managing penile strangulation quicker and restoring normal functions of the penis without any trauma.

### Case presentation

A 65-year-old man walked into the emergency department with an impacted metallic ball at the root of the penis. The clinical examination showed penile engorgement, edema, discoloration of the penile skin, and glans penis (Figure 1). Distal to the root of the penis the patient has lost sensation. Initially, we tried to cut the metallic ball with the help of available surgical instruments. However, it was impossible. Care was taken not to damage the penis. We wrapped the penis with ice packs, and multiple needle puncturing was made with an 18-Gauge needle on the dorsal aspect of the penis to drain the accumulated fluid. Preputial edema was reduced by applying mild pressure on the penis. Further, with the help of the right hand, constant pressure was applied over the entire penile shaft for about 5 min.

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The metallic ball was then slowly squeezed out from root to glans penis. Care was taken to avoid any iatrogenic injury on the penis. The total duration of the procedure was about 45 min. Immediately after the procedure, we noticed the disappearance of discoloration of the glans penis. After cleaning with normal saline and a non-adherent anti-microbial dressing was done on the penis. The patient was kept for observation in the post-operative ward. After 12 hrs, we observed that the penile edema waned. Following this, the patient voided urine satisfactorily. The next day the patient was discharged from the hospital and advised to maintain local hygiene. The patient did well on follow-up one with normal voiding and erection.

### Discussion

The penis is a very sensitive and squeamish organ for a man and minor injury can cause serious discomforts and mental disturbance. Neglected cases of penile entrapment by metal ring can result in urethrocutaneous fistula, ischemia, necrosis, and finally may result in amputation of the penis<sup>[8, 9]</sup>. Hence, timely removal of the constricting device is will help to restore penile vascularity, micturition, and the maintenance of erectile function. Silberstein *et al.* (2008) reported that high grade of penile injuries like urethral fistula, penile gangrene, pressure necrosis was more eminent in patients with >72 hr of constriction<sup>[10]</sup>. Often the patient may need anaesthesia depends on grade of injury, ease of removal, patient cooperation and need for urinary diversion. The main advantage of present technique is that it doesn't involve laborious procedures; hence the time consumed to remove metallic constrictor is very minimal. Rarely the procedure may require surgical equipments. To remove the constricted objects several methods like string techniques, penile aspiration techniques, cutting techniques, excision penile skin and buck's fascia have been described<sup>[5, 9]</sup>. The surgeon will decide the method based on the grade of injury, type and size of the constricting object, time spent after strangulation, and also the availability of the equipment in the hospital<sup>[5, 10]</sup>. Even though there are many methods to remove the metallic ball/ring we have introduced the most simple, safe, cheap, non-traumatic, non-invasive, effective, and feasible technique for removing the heavy metallic ring - "Novel Ice Pack Technique". The technique follows the principle of constricting the penis with minimal trauma and immediately restoring the normal function of the penis.

The modified technique described herein includes the use of an ice pack application, multiple needle punctures, and external pressure, thereby decreasing the penile engorgement and edema which allowed us to gradually slide the constricting object up the penile shaft, thereby removing it in a minimally invasive way in a reasonably short period without the need of any specialized cutting instruments.

In the present method we experienced, aspiration of fluid/blood from corpora is better than using cutting devices. Constant compression and aspiration allow the congested blood/fluid to exit. With prompt intervention and expulsion of the foreign body with the ice pack technique, the patient was extremely comfortable and did not require any further intervention. The main limitation of the present method includes if the patient is suspected of a grade III or IV or high-grade injury, then further investigations are done to rule out urethral injury. Also, regular monitoring of the patient is needed to know the development of skin necrosis, urethrocutaneous fistula, or sexual dysfunction. Further, studies are need with adequate sample size to know the set-backs of the present technique.



**Fig 1:** Metallic ring in the shaft of the penis with discoloration of glands of penis



**Fig 2:** Showing end result after heavy metallic ball removal

### Conclusion

Penile strangulation is a surgical emergency. Often it can lead to ischemia, necrosis and gangrene and rarely to death of the patient. The surgeon should use the least traumatic technique to remove a constriction device from the genitals as soon as possible. The present method "Novel ice pack technique" is an add-on for the previous techniques. As this technique does not require experienced hands, this method should be the first line of choice to remove penile strangulation. Further, the technique is so simple it won't even require resourcefulness and in comparison to other methods of constrictor removal, the ice pack technique appears to be safer.

**Conflict of interest:** The authors declare no conflict of interest

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