World Journal of Biology Pharmacy and Health Sciences
eISSN: 2582-5542
Cross Ref DOI: 10.30574/wjbphs
Journal homepage: https://wjbphs.com/

(CASE REPORT)

# Penile strangulation by metallic ring: A rare urological emergency managed with innovative removal technique

Ranjitsinh B Sagar *, Dinesh M Kumar, Sanjaykumar J Parmar and Zileshkumar S Asoda

*Department of General Surgery, B. J. Medical College, Ahmedabad, Gujarat, India.*

World Journal of Biology Pharmacy and Health Sciences, 2026, 26(02), 023-028

Publication history: Received on 19 March 2026; revised on 28 April 2026; accepted on 01 May 2026

Article DOI: https://doi.org/10.30574/wjbphs.2026.26.2.0231

## Abstract

Penile strangulation is a rare but serious urological emergency caused by constricting devices placed around the penis, often for sexual enhancement. Delay in management can lead to ischemia, necrosis, and even amputation. We report a case of a 56-year-old male presenting with penile incarceration due to a metallic ball bearing ring. The patient was successfully managed using a power cutting tool with continuous cooling measures. This case highlights the importance of prompt intervention and innovative techniques in managing such emergencies.

**Keywords:** Penile Strangulation; Metallic Ring; Urological Emergency; Penile Incarceration; Foreign Body

## 1. Introduction

Penile constricting devices are used to enhance erection by restricting venous outflow. However, prolonged use may lead to penile incarceration, edema, vascular compromise, and tissue necrosis.

Penile strangulation is considered a urological emergency, requiring urgent decompression to prevent irreversible damage. Various metallic and non-metallic objects have been reported in literature, with metallic rings posing greater removal challenges.

This condition requires prompt urological intervention to preserve both functional and anatomical integrity of the penis.

## 2. Case Presentation

A 56-year-old married male, farmer by occupation, presented to the emergency department with

- Painful penile swelling
- Inability to pass urine
- History of metallic ring placement at penile base

### 2.1. Timeline of Events

- 25/11/2023, 2:00 PM – Metallic ring applied

* Corresponding author: Dr. Ranjitsinh B Sagar

- 25/11/2023, evening – Progressive swelling and pain
- 26/11/2023, 5:00 AM – Presentation to tertiary care (≈15 hours delay)
- Same day – Emergency intervention and ring removal
- Post-op Day 3 – Return of sensation
- Post-op Day 9 – Catheter removal, spontaneous voiding
- Follow-up Day 17 – Functional recovery with planned skin graft

### 2.2. History

The patient had applied a metallic ring to improve erection. Initially, he was able to void urine, but progressively developed

- Severe swelling
- Urinary retention
- Loss of penile sensation

He delayed seeking medical attention, assuming spontaneous resolution. The patient had a history suggestive of long-standing psychiatric illness following bereavement, which may have contributed to the behavior leading to penile constriction.

### 2.3. Clinical Findings

*2.3.1. On examination*

- Metallic industrial ball bearing ring present at penile base
- Gross distal penile edema
- Blackish discoloration of skin (Figure 1)
- Loss of sensation distal to constriction
- No scrotal involvement
- No pulsations distal to constriction

### 2.4. Vital parameters were stable

- Pulse: 82/min
- Blood Pressure: 116/76 mmHg
- Respiratory Rate: 16/min
- $SpO_2$: 98% on room air

The ring measured approximately 15 mm width and 20 mm thickness and was completely embedded within edematous tissue.

### 2.5. Initial Management

- Urinary retention relieved by 6 Fr infant feeding tube catheterization
- Intravenous antibiotics and anti-inflammatory agents started
- Multiple non-invasive techniques attempted but unsuccessful

### 2.6. Definitive Management

Due to failure of conventional methods, an innovative mechanical approach was used

- A power cutting tool was employed carefully (Figure 2)
- Penis stabilized using supporting strings
- A protective barrier inserted between ring and skin

*2.6.1. Continuous irrigation with saline applied to*

- Prevent thermal injury
- Reduce sparks and heat

The ring was successfully cut and removed without further injury. (Figure 3)

### 2.7. Postoperative Course

- Gradual reduction in edema
- Improvement in skin color (Figure 4)
- No progression to gangrene
- Patient regained urinary function
- Follow-up showed satisfactory recovery

## 3. Discussion

### 3.1. Penile strangulation presents a management challenge due to

- Edema preventing removal
- Hard metallic objects resisting cutting
- Risk of iatrogenic injury

Based on clinical findings of edema, skin discoloration, and sensory loss, the injury corresponds to Grade III penile strangulation (Bhat classification).

Penile strangulation is an uncommon emergency, with most cases reported in middle-aged men using constricting devices for sexual or urinary purposes. Compared to previously described techniques such as string method or aspiration, metallic industrial-grade objects often require mechanical cutting devices. In our case, the use of a metal grinder with continuous irrigation and protective barrier represents a practical and effective solution in a resource-limited setting. Similar approaches have been described in isolated case reports; however, careful thermal protection remains critical to avoid iatrogenic injury.

Delay of more than 12 hours in presentation, as seen in this case, significantly increases the risk of ischemic complications, emphasizing the need for early intervention.

The uniqueness of this case lies in the successful use of a readily available industrial metal grinder under controlled precautions, highlighting its utility in emergency settings where specialized instruments are unavailable.

### 3.2. Key Points

Early intervention is critical to prevent ischemia

#### *3.2.1. Delay can lead to*

- Necrosis
- Urethral injury
- Penile amputation

### 3.3. Management Strategies

#### *3.3.1. Different techniques include*

- String method
- Aspiration technique
- Cutting devices (manual or electric)
- Orthopedic tools or industrial cutters

This case demonstrates that non-medical tools with proper precautions can be lifesaving in resource-limited settings.

### 3.4. Complications

#### *3.4.1. Potential complications include*

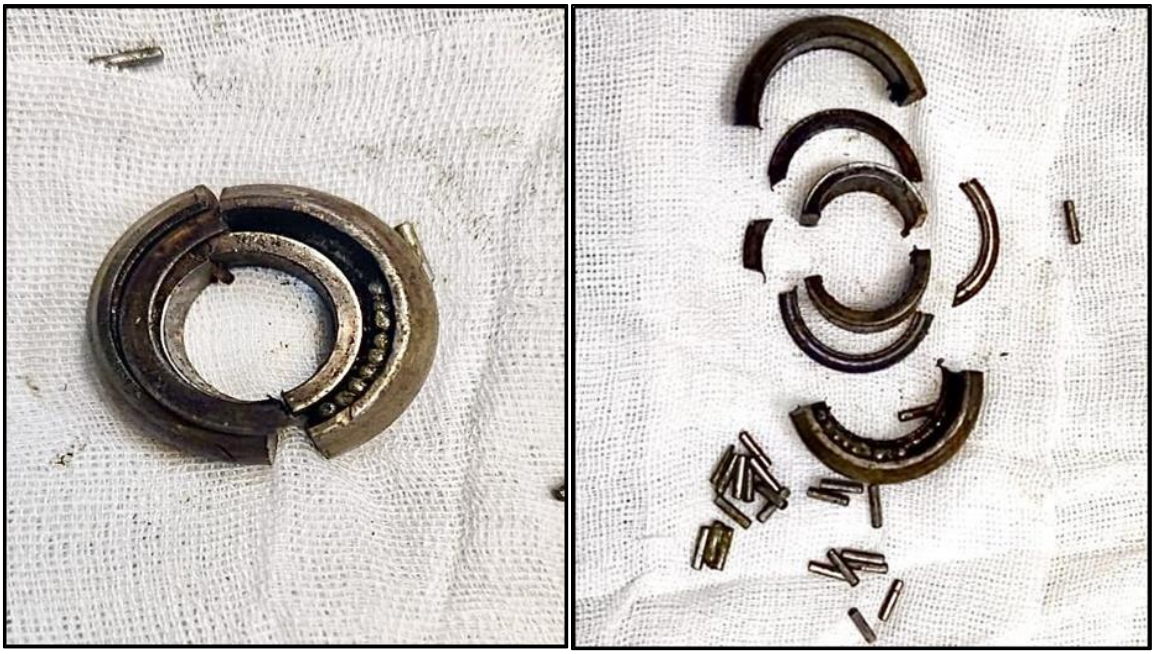
- Early: Skin necrosis, urethral injury, gangrene
- Late: Urethral stricture, erectile dysfunction, fibrosis, lymphedema

*3.4.2. Learning Points*

- Penile strangulation is a time-sensitive surgical emergency.
- Metallic rings require mechanical removal techniques.
- Thermal injury prevention is crucial during cutting.
- Multidisciplinary and innovative approaches improve outcomes.

**Figure 1** Clinical presentation showing severe distal penile edema, discoloration, and constricting metallic ring at base (dorsal and ventral views)

**Figure 2** Intraoperative removal using metal grinder with protective barrier and continuous saline irrigation to prevent thermal injury



**3A** **3B**

**Figure 3** Metallic bearing ring after removal, cut at two opposite points

**3A -** Ring approximated

**3B -** Ring separated

**Figure 4** Postoperative healing with granulation tissue formation and reduction in edema

## 4. Conclusion

Penile strangulation is a rare but potentially devastating urological emergency. Prompt recognition and timely intervention are essential to prevent irreversible complications. This case highlights the effectiveness of innovative, resource-adapted techniques in safely managing complex metallic constrictions.

## Compliance with ethical standards

### *Disclosure of conflict of interest*

The authors declare no conflicts of interest.

### *Statement of informed consent*

Informed consent was obtained from the patient for publication of this case and accompanying images.

## References

[1] Bhat AL, Kumar A, Mathur SC, Gangwal KC. Penile strangulation. Br J Urol. 1991;68(6):618–621.

[2] Perabo FG, Steiner G, Albers P, Müller SC. Treatment of penile strangulation caused by constricting devices. Urology. 2002;59(1):137.

[3] Ivanovski O, Stankov O, Kuzmanoski M, et al. Penile strangulation: case reports and review. J Sex Med. 2007;4(6):1775–1780.