

From Entrapment to Recovery: Resolution of Penile Strangulation from a Double-wall Metal Ring - a Case Report and Review

Abhishek Saini, Umesh Sharma, Shrey A Saxena, Nitin M Paighan, Somdutt Sharma, Vignesh Vivekanandam

Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital, Department of Urology and Renal Transplantation, New Delhi, India

Abstract

Penile entrapment due to a constricting ring is a rare urological emergency requiring prompt intervention to prevent irreversible tissue damage. A 60-year-old male presented with penile swelling and pain, two days after a metal ring became entrapped. Examination revealed severe swelling and preputial skin necrosis. Under local anesthesia, the ring was successfully cut using a K-wire cutter and a small-handled saw with appropriate support placed beneath the ring. One-week post-procedure, penile skin debridement was performed. The patient recovered successfully, and follow-up showed normal Doppler parameters. This case emphasizes the importance of early intervention and managing penile entrapment.

Keywords: Penile entrapment, metal ring, sexual enhancement

Introduction

Penile strangulation due to entrapped rings or foreign objects is a rare but critical condition that requires prompt intervention to avoid severe complications such as tissue necrosis or erectile dysfunction (1). Penile rings, often used for sexual enhancement, can obstruct blood flow, leading to ischemia and tissue damage if left in place for prolonged periods (1). While non-surgical methods like manual extraction are effective in many cases, surgical intervention using various types of cutters is required for more complex situations or when conservative treatments fail (2). This report highlights the management of a 60-year-old male with penile entrapment from a double-wall ring, emphasizing the need for timely treatment.

Case Presentation

A 60-year-old male with no significant medical history presented to the emergency department after experiencing penile swelling and pain for two days. The patient reported that he had used a double-wall metal ring for sexual enhancement, which became entrapped around the base of his penis. The patient acknowledged postponing medical care because he felt

embarrassed. He was already catheterized before presenting to our hospital.

On physical examination, the penis was markedly swollen, with visible signs of constriction at the base. The skin appeared tense and discolored with signs of preputial skin necrosis (Figure 1). Doppler ultrasound showed normal blood flow. There was no hematuria. Despite the significant swelling, the patient remained hemodynamically stable.

Under local anesthesia, the ring was successfully removed using a K-wire cutter and a small metal saw, with appropriate support positioned beneath the ring to ensure safety. One week after the procedure, debridement of the penile skin was carried out. Following the intervention, the swelling gradually resolved. The patient was discharged the next day with detailed follow-up instructions. Subsequent uroflowmetry demonstrated normal urinary flow, and a penile Doppler study confirmed normal parameters. The patient was referred to the plastic surgery department for further evaluation and planning of skin grafting to the psychiatry department for counseling. Verbal and written informed consent was obtained from the patient for the study.

Correspondence: Abhishek Saini M.Ch, Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital, Department of Urology and Renal Transplantation, New Delhi, India

E-mail: abhishek5500@gmail.com **ORCID-ID:** orcid.org/0000-0002-8482-5573

Received: 20.01.2025 **Accepted:** 18.03.2025 **Epub:** 18.04.2025

Cite this article as: Saini A, Sharma U, Saxena SA, Paighan NM, Sharma S, Vivekanandam V. From entrapment to recovery: resolution of penile strangulation from a double-wall metal ring - a case report and review. J Urol Surg. [Epub Ahead of Print]

©Copyright 2025 The Author. Published by Galenos Publishing House on behalf of the Society of Urological Surgery.

This is an open access article under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 (CC BY-NC-ND) International License.



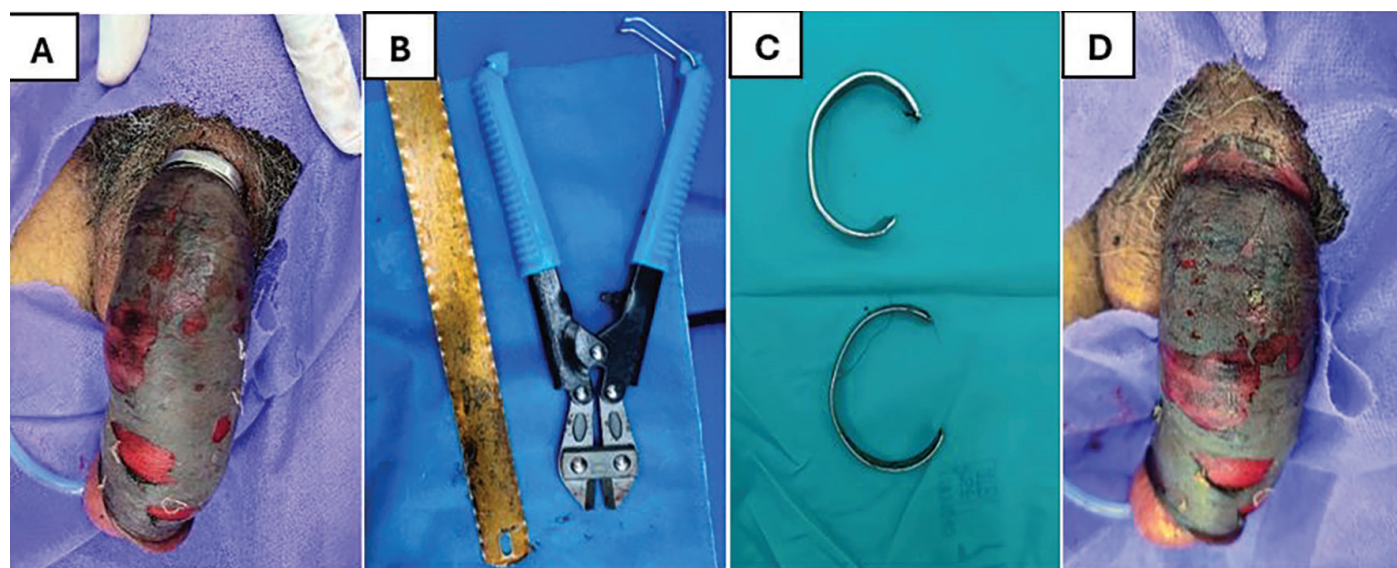


Figure 1. Penile ring entrapment

- (A) Penile ring causing entrapment of the penis and preputial necrosis
- (B) Tools used for removal, including a K-wire cutter and a metal saw
- (C) Illustration of the double-wall ring involved in the entrapment
- (D) Clinical appearance of the penis following successful removal of the ring

Discussion

The use of metal rings to maintain a penile erection is uncommon, and such rings can occasionally entrap the penis (1). Due to its rarity, many healthcare professionals are unfamiliar with managing this emergency situation. As a result, treating this condition can be challenging, and surgeons often try various techniques to remove the ring from the swollen and inflamed penis. This case report aims to raise awareness about penile ring entrapment and to review common methods for removing such rings.

Extended obstruction of venous return can lead to swelling in the distal penis, starting from the site of entrapment. This blockage can impede arterial blood flow, ultimately causing damage to the external genitalia (2). After several hours of compromised circulation, penile strangulation can result in ischemic necrosis, urinary retention, tissue fibrosis, and potentially even in multiorgan failure due to septic shock (3). Bhat et al. have developed a grading system to categorize the severity of penile entrapment injuries (Table 1).

The management of penile strangulation generally follows two approaches: non-surgical and surgical. Non-surgical methods, which involve the manual removal of the constricting device, are preferred when possible, as they offer a quicker recovery with fewer complications (4).

Table 1. Penile strangulation classification	
Grading	Features
I	Only penile edema
II	Reduced penile sensation along with edema
III	Damage to both skin and urethra, without the formation of a urethral fistula
IV	Development of a urethral fistula
V	Gangrene, necrosis or total amputation

There is no universally accepted approach to treating penile strangulation. The process of cutting through metal requires heat, but to avoid causing burns, the metal must be adequately cooled. During the cutting procedure, it is crucial to protect the penis due to the limited space between the metal and the penile skin (4).

However, certain cases may necessitate surgical intervention, particularly when the entrapment is complex, when there are signs of irreversible tissue damage, or if non-invasive methods fail. Surgical methods may involve incision or removal of the constricting object under general anesthesia, which is usually performed when there are concerns about necrosis or severe swelling (5).

In our case, the ring was removed successfully by non-surgical management. The use of Doppler ultrasound was instrumental in confirming normal blood flow, which guided the decision-making process. Early identification and intervention were key to preventing further complications.

A comprehensive, multidisciplinary approach is essential in managing penile strangulation, addressing both the physical and psychological aspects of care. Patients frequently delay seeking medical attention due to embarrassment, which can lead to severe complications. Integrating psychological counseling post-recovery can help mitigate distress, reduce the likelihood of recurrence, and encourage timely medical intervention in similar cases.

The use of penile constriction rings for sexual enhancement has been documented, but such devices carry significant risks, particularly when incorrectly utilized. Although these rings may temporarily maintain an erection by restricting venous outflow, prolonged application risks venous congestion, ischemia and necrosis, ultimately resulting in urethral injury and irreversible penile damage. Rigid metal rings, especially those with fixed, non-expandable structures, pose a higher risk due to difficulties in emergency removal and potential thermal injury during extraction (5,6). Healthcare providers must counsel patients on the dangers associated with these devices, highlighting safer alternatives and urging prompt medical assistance to prevent serious complications.

One challenge in managing penile entrapment is ensuring that the patient seeks medical help promptly. Delay in treatment increases the risk of long-term complications, such as penile fibrosis, erectile dysfunction, and in rare cases, amputation. The majority of these patients often have underlying psychiatric conditions that require careful management during routine follow-ups to minimize the risk of recurrence of such incidents.

Conclusion

Penile entrapment by constricting rings is a rare but serious condition that requires prompt attention. Early intervention using non-surgical methods can effectively relieve the entrapment and restore normal function. With proper management, including timely intervention and follow-up care, patients can recover without long-term sequelae. A multidisciplinary approach,

including timely removal techniques and psychiatric support, is crucial to ensure both physical recovery and address underlying factors to prevent recurrence.

Ethics

Informed Consent: Verbal and written informed consent was obtained from the patient for the study.

Authorship Contributions

Surgical and Medical Practices: A.S., N.M.P., S.S., V.V., Concept: U.S., S.A.S., S.S., V.V., Design: A.S., U.S., S.A.S., V.V., Data Collection or Processing: A.S., N.M.P., Analysis or Interpretation: A.S., N.M.P., S.S., Literature Search: A.S., U.S., S.A.S., V.V., Writing: A.S., S.A.S., N.M.P., S.S., V.V.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The author declared that this study received no financial support.

References

1. Zeid M, Sayedin H, Nabi N, Abdelrahman M, Jacob PT. Penile entrapment with thick penile ring: a case report and literature review. *Cureus*. 2022;14:e21034. [\[Crossref\]](#)
2. Rahmita MM, Parikesit D, Widia F. Penile entrapment by metal ring: case reports of effective non-surgical management. *Urology Case Rep*. 2020;33:101387. [\[Crossref\]](#)
3. Puspaningrat AAP, Klopung YP, Renaldo J. Management of prolonged penile ring entrapment in an Indonesian tertiary hospital: a case report and literature review. *Urol Case Rep*. 2022;45:102202. [\[Crossref\]](#)
4. Agu TC, Obiechina N. Post coital penile ring entrapment: a report of a non-surgical extrication method. *Int J Surg Case Rep*. 2016;18:15–17. [\[Crossref\]](#)
5. Patel NH, Schulman A, Bloom J, Uppaluri N, Iorga M, Parikh S, Phillips J, Choudhury M. Penile and scrotal strangulation due to metal rings: case reports and a review of the literature. *Case Rep Surg*. 2018;2018:5216826. [\[Crossref\]](#)
6. Bray G, Bahadori A, Yaxley W, Rukin N. Penile strangulation due to metallic foreign body; a rare case report highlighting effective management strategies for clinicians. *Urol Case Rep*. 2022;46:102314. [\[Crossref\]](#)