

# DANGEROUS SITE TO WEAR A METALLIC RING: A CASE REPORT AND REVIEW OF LITERATURE OF PENILE STRANGULATION

Kusum Meena\*, Sujata Singla\*\* and Pawan Kumar\*

\*Department of General Surgery, Lady Hardinge Medical College and Smt. Sucheta Kriplani Hospital, Shaheed Bhagat Singh Marg, New Delhi, India., \*\*RAJ Singla Ortho and General Hospital, Narwana, India.

## ABSTRACT

**BACKGROUND:** Penile incarceration injury patients pose a real challenge for general surgeons in emergency setup. Penile incarceration with encircling devices is an unusual condition and consequences can be severe. We are reporting a case of a 50-year-old male patient who presented to the hospital ten days after putting a heavy metallic ring at the root of the penis. The placement of such rings can lead to minor to severe trauma to genital organs. **CASE SUMMARY:** We are reporting a case of a married elderly gentleman whom himself wore a metallic ring at the root of the penis for sexual erotism and landed with constricting ring due to oedema. **CONCLUSION:** Unfamiliarity with the management of these cases put general surgeons in an awkward situation as most of the times patients need non-surgical treatment in his/her supervision. Timely intervention according to the grade of injury can ensure a likely outcome for the patient. Penile strangulation should be viewed and managed as an emergency to prevent penile necrosis, urethral injury and erectile dysfunction.

**KEYWORDS** Penile incarceration, metallic ring, autoerotism.

## Introduction

Penile incarceration injuries from metallic and plastic objects have been reported throughout the world since mid of 18th century. [1] Most patients with disturbed mentality but sometimes imprisoned patients, healthy individuals wear a metallic ring on the penis to achieve autoerotism. The incarceration results in reduced blood flow distal to the constricting ring causing oedema, ischemia or sometimes gangrene leading to autoamputation. Bhat et al. described grades of injury by the degree of involvement of skin and urethra and further revised by Silberstein. [2,3]

(Table 1) The placement over flaccid or partially erect penis results in an inability to removal secondary to oedema. Oedema develops due to a prolonged period of genital entrapment, which leads to venous obstruction followed by arterial obstruction. [4,5] The time lapse between injury and presentation to hospital varies from hours to months. Patients who present with incarceration after 72 hours are more likely to sustain higher grade of injuries than those who seek more timely treatment. Different causes of penile injuries are strangulation injuries, zipper injuries, use of erection inducing devices, sexual abuse and punishment. Some unusual objects like plastic bottles, plastic rings, hair, rubber bands, bottlenecks, wedding rings, washers, nuts have been reported as a cause of incarceration of the penis. [6]

Strategies for extrication depend on the type of device used, the length of the time of incarceration, the patient ability to remain calm and tools available to the presenting physician. [2]

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<sup>1</sup>Department of General Surgery, Lady Hardinge Medical College and Smt. Sucheta Kriplani Hospital, Shaheed Bhagat Singh Marg, New Delhi, India.

**Table 1** Showing grading and treatment of Penile Injury.

Grade	Type of injury (by Bhat et al.)	Revised scale by Silberstein	Treatment Options
I	Oedema of the distal penis with no evidence of skin or urethral injury	Low grade	- The string technique and its variants with or without aspiration of blood from glans. - Aspiration techniques - Cutting devices
II	Injury to skin and constriction of corpus spongiosum but no evidence of urethral injury or decreased penile sensation		
III	Injury to skin and urethra but no urethral fistula or loss of distal penile sensation		
IV	Complete division of corpus spongiosum leading to urethral fistula and constriction with loss of distal penile sensation	High grade	Surgery (Tissue debridement and skin grafting)
V	Gangrene, necrosis or complete amputation of distal penis		

### Case report

We are reporting a case of 50 years old married male patient who was having three children; presented to the surgical emergency with encircling massive metallic ring around the root of the penis for the past ten days. (Figure 1) He was complaining of pain and



**Figure 1**

increasing oedema and was not able to remove the ring. There was no urinary complaint however he complained of decreased sensation in the distal penis. His wife accompanied the patient. He gave a history of applying similar kind of metallic rings in the past also, but this was the first time he was not able to take out the ring. Patient's attendant gave a history of his treatment for depression two years back which he left six months back by his own. The patient was circumcised in childhood as a religious ritual. The patient was having a habit of masturbation for a long. After the act, the patient slept with the ring in place. Next day morning when he tried to remove the ring, he was unsuccessful. When he started having a problem in the form of increasing pain and oedema, he told his wife about the incident, and she brought him to the emergency. On examination, the patient was



**Figure 2**

conscious, oriented and his vitals were stable. Local examination revealed constricting ring around the root of the penis with rest skin being oedematous and shiny. (Figure 2)

There was no skin ulceration and the no evidence of urethral injury. Sensations were reduced in the distal penis. The patient was catheterised without any difficulty. Systemic examination was normal. All routine investigations were normal. As the patient had this problem for ten days and on examination, it was a grade I injury the removal was planned under spinal anaesthesia by cutting with an electric saw. The shield was used to protecting the penis, but patient got slight discolouration. The ring was removed by cutting the ring at two places. The part of the penis underneath the metallic ring showed superficial ulceration. (Figure 3) The area was cleaned with saline and Neosporin ointment was applied. Tablet amoxiclav 625 mg thrice daily was started, and the patient was kept under observation. Psychiatric consultation was taken for the patient. Once the wound was satisfactory, he was discharged with advice to come for follow up in the outpatient department.



**Figure 3**

## Discussion

Patients presenting in an emergency with penile incarceration injuries have been a real challenge for general surgeons. The extent of injury due to encircling devices depends on the type of object used, duration; tightness produced and subsequent development of oedema and its progression, self-attempts to remove the object. Prolonged oedema and ischemia can lead to tissue and neurovascular bundle damage that could be sometimes irreversible. [7] The involvement of penile skin can vary from minor ulceration to development of Fournier's gangrene. Use of colour Doppler has been recommended to look for vascular patency in Grade II and above cases. [8] Uroflometry is an important follow-up the investigation for grade II and above injuries. There are no standard guidelines on how to remove constricting rings from the penis. Detailed clinical history and thorough examination are prerequisites to decide about the method of extrication of encircling device from the penis. Treatment of penile incarceration can be divided into four groups. [9] (Table 1) Cutting has been described as the most conventional method of removal of constricting devices. Orthopaedic plaster cutter, electric metal cutter saw, oscillating splint saw, and pedal cutter which is used by fire crew to cut through metal can be used to cut as surgical instruments generally available in operation theatre are of no help. Use of plastic guards, metal tongue blade and the laryngoscopic blade has also been described in the literature. [10] It has been recommended to cut the metallic device at two sites preferably opposite to each other for safe atraumatic removal. However, it is a challenging task first due to delayed presentation due to social taboo and psychiatric disease; second due to difficulties associated like voiding difficulties, penile skin discolouration, penile skin necrosis, erectile dysfunction, priapism, penile fibrosis and urethral stricture formation. [10] One should be ready with a contingency plan while managing these cases.

## Conclusion

This case report is an attempt to increase awareness among general surgeons regarding penile incarceration cases. Combined efforts of the surgeon, urologist, plastic surgeon, anaesthetist and psychiatrist are needed. So it is the multidisciplinary approach which can be promising. The crux of the story is safe removal without producing iatrogenic injury and a high index of suspicion for a higher grade of injuries and referral to concerned speciality.

## Patient consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

## Competing interests

The authors declare that they have no competing interests.

## References

1. Li C, Xu YM, Chen R, Deng CL. An effective treatment for penile strangulation. *Mol Med Rep* 2013;8:201-4
2. Bhat AL, Kumar A, Mathur SC, Gangwal KC. Penile strangulation. *Br J Urol* 1991;68:618-21
3. Silberstein J, Grabowski J, Lakin C, Goldstein J. Penile constriction devices: case report, review of literature and recommendations for extrication. *J Sex Med* 2008;5:1747-57
4. Darby JC, David M. Genital incarceration an unusual report. *Can Urol Assoc* 2010;4:76
5. Browning WH, Reed DC. A method of treatment for incarceration of penis. *J Urol* 1969;101:188-90
6. Shukla P, Lal S, Shrivastava G, Singh L. Penile incarceration with encircling metallic objects: A study of successful removal. *J Clin Diag Res* 2014;8:1-5
7. Singh I, Joshi MK, Jaura MS. Strangulation of penis by ball bearing device. *J Sex Medicine* 2010;7:3793-97
8. May M, Gunia S, Helke C, Kheyri R, Hoschke B. Penile entrapment in a plastic bottle: A case for using an oscillating splint saw. *Int Urol Nephrol* 2006;38:93-5
9. Baruah SJ, Bagchi PK, Barua SK, Deka PM. An innovative surgical technique for treating penile incarceration injury caused by heavy metallic ring. *Ind J of Urol* 2009;25:267-8
10. Trivedi S, Attam A, Kerketa A. Penile Incarceration with Metallic Foreign Bodies: Management and Review of Literature. *Cur Urol* 2013;7:45-50