

Case Report

An Unusual Case of Penile Strangulation by a Metal Ring in an Adult Patient: Presentation and Management

Yasir Iqbal,¹ Muhammad Hassan Azad,² Muhammad Saim Azam,³ Raza Ashraf⁴

¹⁻³Capital Hospital CDA, Islamabad; ⁴Shifa College of Medicine, Islamabad

Abstract

Penile rings are devices used to sustain an erection by restricting the outflow of blood from the cavernosal tissue. However, prolonged use can lead to complications such as penile ring entrapment. We report a rare clinical case of penile strangulation by a metal ring in a 27-year-old male, who initially presented to a local clinic. Despite the removal of the ring using a bone cutter, he developed pain and skin necrosis requiring extensive management in a collaborative multidisciplinary approach, involving plastic surgery, urology, and emergency medicine departments. This case underscores the need for timely intervention and a multidisciplinary approach to address the challenges and complications arising from penile strangulation.

Received | 26-04-2024 **Revision** | 13-07-2024 **Accepted** | 15-07-2024

Corresponding Author | Raza Ashraf, Consultant Plastic & Reconstructive surgeon Capital Hospital CDA, Islamabad.

Email : razaashraf969@yahoo.com

Keywords | Penile strangulation, Penile Ring, Penile gangrene, Split thickness skin graft, Case report.

Introduction

Penile strangulation is a rare serious urological emergency that can lead to severe complications.¹ Constrictive devices used intentionally to enhance sexual performance or due to psychiatric conditions leads to prolonged erections and penoscrotal engorgement due to constriction of venous outflow, progressively obstructing arterial inflow, resulting in ischemia and subsequent necrosis of penile tissue.² The extent of injury can vary from mild skin abrasion to severe complications such as urethral damage, gangrene, and even penile amputation.³ Despite the severity, patient embarrassment often leads to delayed presentation, complicating treatment outcomes.^{3,4} This case aims to highlight these critical aspects through the presentation of a unique incident.

Case Presentation

We report the case of a 27-year-old male who presented with a history of penile strangulation following the application of an adjustable metallic ring. The patient,

seeking to enhance sexual performance, had placed his phallus through the ring. After two days of unsuccessful attempts to remove the ring due to increasing pain and swelling, the patient, embarrassed and fearing social stigma, sought medical help at a local clinic [figure 1a]. Initial attempts at removal involved sliding after lubrication, pulling, and cutting maneuvers, all of which were unsuccessful. Ultimately, a urology resident bisected the ring using a bone cutter after multiple attempts in the emergency department. The patient chose not to seek further medical attention and returned home.

Five days post-removal, the patient presented to the Plastic Surgery Department at Capital Hospital, CDA, Islamabad, with persistent pain and evident penile discoloration. His pain was graded at 6/10 on the pain scale. Physical examination revealed a circumcised penis with a circumferential necrotic patch at the base measuring 4×3 cm on the dorsal aspect and 3×3 cm on the ventral aspect [figure 1b]. The penis also exhibited distal edema, but there were no signs of urethral discharge, and the external meatus appeared normal. No systemic

abnormalities were noted, and abdominal examination did not reveal any palpable bladder (sign of urinary retention).

The patient's blood work was within normal limits, and he was deemed fit for anesthesia. Surgical intervention commenced six days post-ring removal under spinal anesthesia. The procedure included excision of the constriction ring at the base of the penis and debridement of necrotic tissues on both the dorsal and ventral surfaces [figure 1c]. The viability of the underlying tissue was confirmed intra-operatively, with no bleeding observed from the urethra and normal coloration of the glans penis. The defect at the base of the penis was primarily closed using interrupted 5/0 prolene sutures [figure 1d and 1e]. A 14 Fr Foley's catheter was inserted, and the area was dressed with bactigrass to support healing. Postoperatively, the patient received intravenous antibiotics and analgesics.



Figure 1: Images at different stages of the treatment process until complete recovery- produced with consent from the patient

On the 5th postoperative day, the patient underwent further surgery to address the necrotic areas which were healing well. Under spinal anesthesia and aseptic conditions, a split-thickness skin graft was harvested from the patient's right thigh using a humby knife. The graft

was manually meshed and placed on both the dorsal and ventral aspects of the penis, secured with 5/0 Prolene sutures. Post-graft care included Bactigrass and sterile gauze dressing, with daily assessments. The patient was discharged on the 3rd day post-second surgery, with follow-up scheduled in the outpatient clinic [figure 1f]. One month later, the patient reported no urinary or erectile dysfunction and expressed satisfaction with the cosmetic and functional outcomes of the surgery [figure 1g and h].

Discussion

This case illustrates the critical challenges and complexities inherent in managing penile strangulation. The delay in seeking medical assistance due to social stigma, as observed in our patient, highlights the urgent need for greater public awareness regarding the severity of this condition. Prompt medical intervention is crucial to prevent the progression of complications and to preserve both the cosmetic and functional integrity of the penis. In initial management, non-invasive methods such as lubrication and manual manipulation are preferred.⁴ However, when these approaches fail, more invasive techniques such as cutting the constricting device become necessary.² In this case, the application of a bone cutter was essential. It is imperative during such procedures to meticulously avoid thermal and mechanical injuries to the penile tissue, which could worsen the condition.

Following the initial emergency response, a thorough surgical evaluation of tissue viability is critical.⁵ Our approach involved the excision of necrotic tissue and careful assessment of the remaining penile shaft, which facilitated confident progression to reconstructive measures. In severe cases, such as this one where necrosis had set in, debridement followed by reconstruction via skin grafting is necessary to ensure functional restoration. The success of this intervention underscores the importance of a collaborative multidisciplinary approach, involving plastic surgery, urology, and emergency medicine. This cooperation is vital in providing comprehensive care that addresses all aspects of the patient's condition.

The literature review reveals a notable lack of standardized protocols for the management of penile strangulation, though existing classifications by Bhat et al. and Sawant et al. offer a framework based on injury severity that assists in treatment planning.^{4,6} These classification systems highlight the importance of detailed clinical

examinations and tailor management strategies according to the severity of the injury. Furthermore, given the embarrassment associated with penile strangulation cases, there is a significant need for educational initiatives aimed at reducing stigma and promoting earlier medical intervention.⁵ Patients should also be counseled on the potential risks associated with the use of penile constrictive devices and the importance of seeking immediate medical help should complications arise.

Conclusion

Penile strangulation is a medical emergency demanding immediate and effective intervention through a coordinated multidisciplinary approach involving plastic surgery, urology, and emergency medicine to manage and resolve the complications associated with penile entrapment.

References

1. Campbell KJ, Kwenda EP, Bozorgmehri S, Terry RS, Yeung LL. Penile Strangulation: Analysis of Postextrication Follow-Up, Sequelae, and a Review of Literature. *Am J Mens Health*. 2024 Jan-Feb;18(1): 15579883231223366. doi: 10.1177/15579883231223366. PMID: 38293721; PMCID: PMC10832435.
2. Noegroho BS, Siregar S, Ramdhani R, Partogu B, Mustafa A. Penile strangulation injury by metallic ring: A study of 4 cases. *Int J Surg Case Rep*. 2021 Mar; 80: 105609. doi: 10.1016/j.ijscr.2021.01.103. Epub 2021 Feb 1. PMID: 33601327; PMCID: PMC7898070.
3. Kyomukama LA, Ssebuufu R, Wani SA, Waziri MA, Lule H. Penile ring entrapment and strangulation: A case report at Kampala International University Teaching Hospital in Western Uganda. *Int J Surg Case Rep*. 2021 Mar;80:104982. doi: 10.1016/j.ijscr.2020.09.080. Epub 2020 Sep 19. PMID: 33607367; PMCID: PMC7900217.
4. Dawood O, Tabibi S, Fiuk J, Patel N, El-Zawahry A. Penile ring entrapment - A true urologic emergency: Grading, approach, and management. *Urol Ann*. 2020 Jan-Mar;12(1):15-18. doi: 10.4103/UA.UA_16_19. Epub 2019 Nov 7. PMID: 32015611; PMCID: PMC6978966.
5. Agrawal M, Gite VA, Sankapal P. Two cases of penile strangulation: varied presentations and vastly different outcomes. *Afr J Urol*. 2020 Dec;26(1):46.
6. Mani UA, Tripathi P, Sarangan V, Abbas H, Mule S, Kumar M, Alam S, Krishan U, Goyal D, Alam MJ, Raza SH. Penile Strangulation. *National Journal of Emergency Medicine SEMI*. 2024 Jan 25;1(3):67-70.