

Penile and Testicular Incarceration with a Metal Foreign Body: Full Recovery of Erectile Function after 4 Days of Entrapment

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Penile incarceration with a foreign body is a rare urological emergency necessitating prompt intervention. We present a 59-year-old patient who entrapped his penis and right testicle with a metal thread reducer for sexual arousal four days prior to admission to the Emergency Room. Ultrasound revealed a significantly reduced Color Doppler signal in the right testicle and a completely absent signal in the penile artery. After admission, the metal reducer was removed using a hacksaw under analgesedation. Magnetic resonance imaging showed penile ischemic changes. The patient experienced a reduction in penile swelling, and parts of the skin highly suspected of necrosis recovered fully with preserved sensation. Despite penile ischemia on magnetic resonance imaging, the patient had a full recovery, obtaining normal erections. He was discharged six days after admission, presenting with a normal International Index of Erectile Function score on the follow-up exam.

Keywords: erectile function; metal thread reducer; penile incarceration; penile ischemic changes

INTRODUCTION

Penile incarceration (constriction) with foreign bodies is a rare urgent condition in urology that requires prompt intervention to prevent potential complications.^(1,2) It poses a challenge for urologists, who creatively choose surgical instruments and tools available in hospital settings.^(2,3) Gautie reported the first case in 1775.^(1,2) The most frequent cause of penile constriction in middle-aged and older males is the desire for increased sexual performance or for autoerotic purposes.⁽³⁾ The most often used non-metal items are rubber bands, plastic rings, and plastic bottles, while the most often used metal items are rings, tube segments, and ball bearings.⁽¹⁾



Figure 1. Penile and testicular incarceration.



Figure 2. Removing the metal reducer with a hacksaw.

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CASE REPORT

We present a 59-year-old patient, with no previous history of psychiatric disorders, who was admitted to the Emergency Center with complaints of penile swelling and pain. The patient provided a detailed history, stating that he had entrapped his right testicle and penis with a metal thread reducer for sexual arousal four days prior. Physical examination revealed that the base of the penis and right testicle were incarcerated with a metal thread reducer (2.5 cm diameter), and the tissue was edematous with dusky skin discoloration (**Figure 1**). An ultrasound (US) showed an enlarged right testicle with a significantly reduced Color Doppler (CD) signal and a completely absent CD signal in the penile artery. A Foley urethral catheter was successfully placed with resistance at the point of incarceration, after which clear urine was obtained. The metal reducer was removed using a hacksaw under analgesia (**Figure 2**). On the first postoperative day, the patient had a normal erection. A control US showed a normal-sized right testicle with normal CD flow. For the evaluation of penile structures, magnetic resonance imaging (MRI) was performed (**Figure 3a, 3b**), which described hypointense zones in the proximal part of the right corpus cavernosum and corpus spongiosum (ischemic zones), without signs of rupture of the penile structures. Despite MRI-verified ischemic changes, the patient had normal erections. The penile skin, which was highly suspected of necrosis, recovered completely with preserved sensation. On the sixth postoperative day, the patient was discharged with a urinary catheter. A check-up exam two weeks later showed completely preserved erectile function, with a normal score on the International Index of Erectile Function (IIEF). The patient had no voiding complaints after the urinary catheter was removed, and the skin had recovered with normal sensation.

DISCUSSION

Placement of encircling metallic devices on the erect penis results in tissue edema and makes removal difficult. Edema and pressure lead to a penile compartment syndrome with an initial obstruction to both venous and lymphatic outflow distal to the device, followed by arterial flow obstruction that leads to tissue ischemia and necrosis. Local findings range from mild penile edema to gangrene, depending on the duration of incarceration, the type of foreign body, and the presence of infection. Literature data describe cases that required debridement or penile amputation due to the degree of damage to structures distal to the site of incarceration, despite the removal of the foreign body.^(1,2) Complications vary and are determined by factors such as the type of device used, duration of incarceration, degree of confinement, and the time the patient waits before seeking medical assistance. The most frequent complication is erectile dysfunction. A categorization for such injuries has been presented by several authors. Bhat et al. divided penile injuries into five categories ranging from edema to penile gangrene. Silberstein et al. simplified this rating system into two categories.⁽³⁾ Various surgical approaches have been described, but due to the different objects involved and clinical presentations, no single approach can be considered standard.⁽⁴⁾ The length of incarceration has a major effect on both clinical presentation and treatment results.⁽⁵⁾ Ex-

perts from non-medical fields are often called upon, and their assistance can be of great importance.^(2,3) In previously reported instances, higher-grade injuries were more prevalent in incarcerations induced by non-metal foreign bodies (77.7% versus 22.2%). The greater elasticity of non-metal foreign bodies, causing increased penile constriction, is suggested as a possible cause. Patients incarcerated for more than 72 hours had a greater likelihood of suffering a higher-grade injury compared to those incarcerated for less than 72 hours. The initial step in managing penile incarceration is establishing urethral patency via transurethral or suprapubic catheterization. For Grade I and II injuries, a Foley catheter should be inserted; for Grade III, IV, and V injuries, a suprapubic catheter should be inserted.⁽¹⁾ In disagreement with reported statistics, in our case, a 96-hour-long constriction resulting in a high-grade injury with MRI-verified ischemic changes did not have a significant impact on erectile function. Consequently, amputation was not required. Simultaneous incarceration of the penis and testicle is an atypical presentation. Given that the selection of therapeutic methods is non-standardized, our case can be used as a model for procedures in these atypical situations. A multidisciplinary approach and collaboration with engineers can facilitate the removal of the foreign object with minimal trauma. Despite the fact that the duration of incarceration did not correlate with the local findings in our case, a standardized treatment plan should include prompt liberation of the incarcerated organ, MRI after liberation, and observation of the first postoperative erection, with an emphasis on an expectant and proactive approach to regaining organ function.

SUMMARY

A man trapped his penis and testicle with a metal ring for four days. Doctors removed it with a hacksaw. Despite severe initial injury seen on MRI, he made a full recovery with normal erections, showing good outcomes are possible even after long entrapment.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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