

Penile strangulation by iron metal ring: A novel and effective method of management

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Abstract

Penile strangulation by metal ring is a rare urological emergency situation which requires urgent decompression of the penis to avoid adverse effect. It is usually associated with an attempt to improve sexual act and/or to prolong erection. But sometimes, cutting of the ring to decompress the penis safely is a very difficult task particularly when the strangulating object is a hard metal object as in our case. Here, we present a case which was managed by cutting in a novel way with the help of dental micromotor with wheel shape bur.

Key Words: Decompression, entrapment, strangulation

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INTRODUCTION

Entrapment or strangulation of the penis is usually associated with an attempt to improve sexual act by maintaining a prolonged erection. It is a rare condition but requires urgent intervention and treatment. The objects which are usually used by adults and adolescents for penile entrapments are rings, nuts, bottles, sockets, or pipes. However, in children, it is usually accidental with typical objects such as rubber bands, thread, or hair.^[1] Nonmetallic, thin objects can easily be cut off, but penile entrapment with heavy metal objects can pose difficult problem, especially as the object cannot be removed by the standard equipment available in the wards and hospitals.^[2] Penile entrapment could lead to different degrees of vascular obstruction ranging from mild nonsignificant vascular obstruction that resolves after decompression to severe gangrene of the penis.^[3]

CASE REPORT

A 47-year-old gentleman presented to our urology outpatient department with 2 days history of insertion of an iron ring into his penis. He further revealed that it was put by himself with an expectation to increase the hardness of his penis for better sexual pleasure, and he manipulated at home to remove without success. On examination, an edematous and swollen penis was found with a thick and hard metal iron ring (wheel bearing) at the base of it [Figure I]. Other physical examinations were normal. All maneuvers such as pulling out, sliding to remove the ring after lubrication, and cutting by hacksaw were unsuccessful. Later on, it was easily cut into two pieces in 10 min by micromotor (Marathon-3 serial no 0809, Sae Yang Co) with

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Figure 1: Edematous penis with metal ring at its base



Figure 2: Micromotor wheel shape bur cutting the metal ring with cold saline jet



Figure 4: Metal ring cut into two pieces



Figure 3: Micromotor (marathon) with wheel shape bur

wheel shape bur which is used as a dental instrument without any kind of anesthesia [Figures 2-4]. The skin entrapped underneath was protected by a metal blade to avoid injury. The area was continuously irrigated by cold saline to prevent from thermal injury generated during the procedure. Penile edema was significantly decreased, and he was discharged on next day. On follow-up after 7 days, his penis was healthy with normal erections [Figure 5].

DISCUSSION

The penis is a very delicate and sensitive organ and even minor injury may cause serious discomforts. Any penile trauma

should be managed urgently.^[4] Penile entrapment by metal ring if left untreated can result in ischemia, necrosis, and amputation of the penis. The reported motives for placing a metal incarcerating device include enhancement of sexual response, erectile dysfunction self-treatment, and psychiatric disturbance.^[5]

Entrapping the penile shaft with rings and constricting bands may reduce venous return and maintain erection.^[6] Entrapment of the penis by an encircling object leads to swelling of the penis distal to the object due to the initial blockage of the venous return and later arterial supply. After several hours, penile strangulation can result in ischemic necrosis and fibrosis of the tissue. Reported complications occurring with time and degree of incarceration include: urinary retention, skin ulceration, desquamating epithelium and bullae, urethral stricture, urethral fistulas, priapism, gangrene, and autoamputation. Bhatt *et al.*^[7] graded such injuries according to severity as:

- Grade I: Edema of the distal penis, no evidence of skin ulceration or urethral injury.
- Grade II: Injury to the skin and constriction of corpus spongiosum but no evidence of urethral injury, distal penile edema with decreased penile sensation.
- Grade III: Injury to the skin and urethra but no urethral fistula, there is a loss of distal penile sensation.



Figure 5: Day 7 after removal of metal ring

Grade IV: Complete division of corpus spongiosum leading to urethral fistula and constriction of corpus cavernosa with the loss of distal penile sensation.

Grade V: Gangrene, necrosis, or complete amputation of the distal penis.

Depending on the degree and material of entrapment and distal edema caused by it, releasing it can be challenging. If the constricting object is nonmetallic object, it can be easily cut off, but thick, hardened steel or iron is very difficult to remove with a chisel, saw, or cutter. There are many methods for removing thick, hardened strangulating materials, including aspiration of the corpora or the use of saws, grinders, dental drills, and the string method.^[1]

Cutting metal produces heat, and to prevent tissue heating, the metal must be cooled. The penis itself must be protected during cutting, which can be difficult because there is usually little room between the metal and penis. Likewise, the metal must be cut in two spots to avoid damage to the penile skin during removal.^[2] In our case, we continuously sprinkled cold normal saline to cool both the penile tissue as well as the

micromotor blade. We inserted a metal tongue-shaped blade between the strangulating ring and penile skin which prevented from penile skin and tissue injury from the heat and force. It cuts very smoothly in a short duration without much exertion as it is operated electrically.

CONCLUSION

Although penile strangulation is uncommon, it can be very challenging to manage. However, dental micromotor can make it simple, fast, cost effective, and easy procedure without any kind of anesthesia. In short, cutting the strangulating metal penile ring using dental micromotor is a novel way.

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Conflicts of interest

There are no conflicts of interest.

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