

Penile constriction injury: An experience of four cases

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Abstract

Penile injury due to constriction by a foreign object is a rare known complication, commonly seen in pediatric age group. We report four cases of penile constriction injury in adults due to various foreign objects and different indications. Between October 2014 and March 2016, four patients (mean age 42.5 years) presented with penile constriction injury with duration at presentation ranging from 18 h to 2 months. One patient had complete transection of the corpus and penile urethra. Three patients were managed successfully with daily dressings followed by split-skin grafting in one patient. One patient required delayed primary suturing after the resolution of local edema. The outcome was satisfactory in all patients with retained erectile function. Early medical attention and management is the key to success in penile constriction injury cases and to avoid complications and morbidity. Prompt removal can be challenging in cases of metal foreign bodies.

Key Words: Penile band, penile constriction, penile foreign body, rubber band

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INTRODUCTION

Penile injury due to constriction by foreign object is a rare known complication, commonly seen in pediatric age group^[1,2] (hair, thread, and rubber band) and less commonly in young adults (metallic rings,^[3,4] nut,^[5] vacuum erection devices) and geriatric patients^[6] (metallic rings, rubber bands). Acute constriction can present as penile gangrene or amputation.^[7] Chronic constriction at the base of penis usually presents as penile lymphedema.^[8] However, chronic constriction rubber band at corona of penis presenting as complete urethral transection, as in one of our case, is a rare entity, and so far this is the first case reported in literature.

CASE REPORTS

Case 1

A 70-year-old male presented with a complaint of urinary incontinence since 1 year with a history of rubber band application to penis since 2 months for the same. On examination, there was a tight rubber band applied just proximal to corona with complete urethral transection [Figure 1]. Both the corpora were intact with local tissue edema with no signs of distal gangrene. On per rectal examination, prostatomegaly was present, which was confirmed on ultrasonography. The rubber band was cut, and emergency suprapubic cystostomy was done. The patient was started on alpha-blocker-anticholinergic

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combination. Daily cleaning and dressing was done for 10 days. Delayed primary anastomosis was done with absorbable polyglactin 4-0 interrupted sutures. Voiding trial was successful on day 14. There was no evidence of urethrocutaneous fistula on 2-month follow-up [Figure 2]. The peak urine flow on uroflowmetry was 15 ml/s. The storage symptoms were well controlled with medical therapy.

Case 2

A 23-year-old male presented with a history of distal penile edema since 24 h due to rubber band application for enhancing erection. On examination, a rubber band was encircling the mid-penile shaft with erosion into the skin and distal penile edema. The band was cut leaving a circumferential ulcer [Figure 3], which was managed by daily dressings followed by split-thickness skin grafting.

Case 3

A 42-year-old male presented with a history of incarceration of packaged drinking water bottleneck since 18 h, which

was inserted for enhancing erection. On examination, the bottleneck was encircling the mid-penile shaft with distal edema [Figure 4]. The plastic object was cut with stout scissors, leaving minor excoriations which were managed with daily dressings.

Case 4

A 35-year-old male with mental retardation presented with retention of urine with severe penile edema since 4 days. The ring was inserted for enhancing erection, which went unnoticed. On examination, a thick metal ring was found at the base of the penis with severe penile edema [Figure 5], with palpable bladder per abdominally. The metal ring was cut using K-wire cutter, and foley catheter inserted for urine drainage. No evidence of urethral injury was found. Minor excoriations over the base of penis were managed with daily dressings.

The erectile function was maintained in all the four cases [Table 1].



Figure 1: Complete transection of corpus and urethra in case 1



Figure 2: Postoperative result of case 1



Figure 3: Circumferential ulcer in case 2



Figure 4: Bottleneck encircling the mid-penile shaft in case 3

DISCUSSION

Penile constriction injuries are commonly observed in pediatric patients, especially in African countries, where hair, thin threads, or rubber bands are used as penile tourniquet to enhance sexual function in adulthood^[1] or to prevent nocturnal enuresis. Young adults apply metal rings, hoops, metal nuts, vacuum constriction rings to enhance, and prolong the duration of erection. Old or geriatric patients apply rubber bands for urinary incontinence.^[9] Potential complications^[6] include acute complications such as erosion of skin, corpus with urethral transection or gangrene of distal tip, and autoamputation. Chronic complications include a chronic fibrosed band^[1] causing difficulty in erection and intercourse, penile lymphedema,^[8] urethral strictures,^[6] and urethrocutaneous fistulas.^[6] Complications depend on the type of constricting material, site of application, width and tightness of constricting object, incarceration time, and personal hygiene.

Penile bands are commonly located at the base of the penis in pediatric patients and young adults for enhancing sexual function. Rubber bands applied at the base of the penis for controlling incontinence in an older patient can cause lymphedema.^[8] However, in three of our cases, the band was applied in a location other than the base of penis.



Figure 5: Thick metal ring at the base of penis with severe penile edema in case 4

Bashir and El-Barbary^[10] had described four grades of injury by penile constriction band:

- Grade 0 – Constriction of skin without urethral injury
- Grade 1 – Partial division of corpus spongiosum with urethrocutaneous fistula
- Grade 2 – Complete division of corpus spongiosum and constriction of corpus cavernosum
- Grade 3 – Gangrene, necrosis, and amputation of the glans.

Our first case can be classified as Grade 2 injury and the rest three cases as Grade 0 injuries.

The blood supply to the glans is by the arterial anastomotic meshwork supplied by the dorsal artery of penis (major) and the bulbourethral artery (minor) ensuring a rich vascular supply. In our first case, there was complete transection of urethra and its corresponding bulbourethral artery. However, the dorsal artery of penis was intact. Hence, there was no gangrene of glans penis. Because of constant constricting pressure, there was pressure necrosis of skin, which proceeded slowly to involve the dartos and corpus with urethra. The band was not tight enough for necrosis and lymphedema of glans. In literature, this complete chronic urethral transection at distal penile shaft successfully managed by primary suturing has not been reported to the best of our knowledge.

Prompt removal of constricting material is important and can be challenging, especially in cases of metal foreign bodies. This may require the use of mechanical cutting devices such as wire cutters or circular grinders.^[5] Superficial injuries are easily managed with split-skin grafting^[6] with no long-term complications. Urethrocutaneous fistulas are best managed with delayed repair after 6–12 months. Urethral strictures may require visual internal urethrotomy or repair with buccal mucosa graft. Complete transection of penis requires penile stump revision or skin grafting.^[6] Early medical attention and management is the key to success in penile constriction band cases. Seeking late medical care is the single most important cause of early and late complications and morbidity in these cases. Patients usually present late as they consider using the penile foreign body as a taboo and suffer complications.

Table 1: Summary of four cases of penile constriction injury

Case number	Age (years)	Foreign body	Indication	Part of shaft involved	Duration	Grade of injury (Bashir and El-Barbary)	Object used for removal	Complications	Management of complications
Case 1	70	Rubber band	Urinary incontinence	Distal penile	2 months	2	Scissors	Urethral transection	Delayed primary suturing
Case 2	23	Rubber band	Enhancing erection	Mid-penile	24 h	0	Scissors	No	-
Case 3	42	Packaged drinking water bottle neck	Enhancing erection	Mid-penile	18 h	0	Stout scissors	No	-
Case 4	35	Metal ring	Enhancing erection	Proximal penile	4 days	0	K-wire cutter	No	-

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Conflicts of interest

There are no conflicts of interest.

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