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Case Report

Penile Strangulation by a Metallic Ring in a Male Adult: New Fangled Idea in Time of Agony

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Abstract

Entrapment of penile ring during self-sexual activity is a rare and bizarre presentation in urology emergency department with imminent risk of distal penile loss and gangrene which may require to penile amputation due to underlying vascular injury. Aside enhancing sexual performance, rings may also be inserted for autoerotic, masturbation or due to psychiatric disturbances or depression. Mental health evaluation remains vital to forestall future reoccurrence of such bizarre tendency. Urgent retrieval of the offending device is vital to preserve sexual function. We report our experience with a 28 year old male patient who had penile ring entrapment and acute urinary retention requiring anesthesia to ease manipulation with advanced orthopedic device (wire cutter). Due to consequent acute urinary retention, we immediately inserted a size 16 french two way catheter for drainage of the urine and forestall progressive retention of urine. We drained 700 ml while on table which further confirms acute urinary retention which probably must have added to the excruciating pain. Subsequent interaction with the patient was uneventful and he was counseled to avoid such self-sexual practice in future. Mental health evaluation by the mental health physicians was also uneventful.

Keywords

Penile Strangulation, Penile Ring Entrapment, Metallic Ring, Wire Cutter

1. Introduction

Penile strangulation results from obstruction to the blood flow of the penis by a foreign body including metallic and non-metallic ring. This is a rare condition caused by penile ring entrapment previously inserted in the penis and requires urgent intervention. [1] Entrapment of penile ring during self-sexual activity is a rare and bizarre presentation in urology emergency department with imminent risk of distal penile loss and gangrene which may require to penile amputation due to underlying vascular injury with consequent edema, urethral fistula and penile gangrene [2, 3] This may be motivated by desire to managed erectile dysfunction and rarely may be seen as a behavioral disorder often embarked on during self-stimulation with the aim of improving sexual satisfaction. [4] Non-metallic or metallic constricting device

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are usually implicated and the duration of insertion directly determines the complications which ranges from pain, edema, acute urinary retention, ischemia, necrosis, urethra-cutaneous fistula, urethral stricture, and gangrene with eventual loss of distal penis.

Penile ring entrapment was reported and managed in 1755, the management of entrapped penile ring is challenging. [5] Nonmetallic device are easily be cut off compared to penile entrapment with heavy metallic device which is challenging and difficult to remove. [6] It may also worsen the condition if removal with an inappropriate technique. [6] Cutting off the implicating device remains the commonest method to achieve relief. However, it is not without complications as the process may be difficult with the possibility of iatrogenic penile injury. [3]

Penile rings have also been used to enhance erection and sexual pleasure by constricting the venous outflow of from the penis thereby prolonging erection. [4] These constricting device can be in form of rubber bands, metallic rings, hammerheads, bullrings and plastic bottlenecks [4, 7] Prolonged penile entrapment could lead to progressive untoward changes and it is advised that irrespectively of the nature of the constricting device, the duration should not exceed 30 mins to preserve penile function. [8]

Management of penile ring entrapment with strangulation as an emergency is vital to preserve sexual function. Agu TC et al reported a painstaking method of milking and levering in a slippery field to retrieve a thick metallic ring entrapped at the root of the penis after sexual activity. [9] The ring was retrieved by lubricating the penis and employing milking technique to gradually extricate the ring without requiring surgical intervention. Morentin B et al reported a fatal case due to penile strangulation with a plastic bottle neck with the time of incarceration estimated to about 10 to 14 days. [10] Autopsy findings were penile strangulation, necrosis of the penis, acute pyelonephritis, and bronchopneumonia. [10] The patient refusal to seek medical intervention probably resulted to the fatality. Xu T et al used an orthopaedic fret-saw and pinchers to surgically cut steel hoop entrapment on his penis. The constricting steel hoop was 20 mm in external diameter, 18 mm in internal diameter and 15 mm wide with an operation time of 100 mins. [11] Patel C et al reported the use of orthopedic wire cutter in the management of prolonged penile strangulation with a metal clamp in a patient who used metal radiator clamps for prolonged period. [12] Wu X et al used a simple improvised a simple three-step technique (aspiration, strapping and sling) to extricate the metal ring without the need for special equipment to manage penoscrotal entrapment. [13] The aspiration probably reduced the edema and enabled the later steps to succeed.

Aside enhancing sexual performance, rings may also be inserted for autoerotic, masturbation or due to psychiatric disturbances or depression. Mental health evaluation remains vital to forestall future reoccurrence of such bizarre tendency.

We report our experience with a male adult who presented with penile ring entrapment and acute urinary retention requiring anesthesia to ease manipulation with advanced orthopedic device (wire cutter).

2. Case Presentation

He is A. M, a 28 year old male patient who presented at the emergency department of our facility with severe pain in the penis, suprapubic pain as well as inability to void of 6 hours duration. The penile pain was insidious in onset and progressively worsened. The penile pain is not referred to any part of the body and only mildly relieved by analgesics. Similarly the inability to void was insidious in onset and progressively worsened with suprapubic fullness and pain.

He was involved in self-sexual stimulation/activity the night prior to presentation and after he achieved detumescence he curiously inserted a metallic ring into his penis and slept off. He woke up around 4 am with an erection and mild pain and labored in vain to pull out the metallic ring from his penis with consequent progressively suprapubic pain and inability to void. There is no history of mental health disorder. He is single and has no comorbid condition.

Examination at the emergency department revealed a young male patient in painful distress. He is not febrile. The blood pressure was 140/90 mmHg, pulse rate was 96 bpm, respiratory rate was 24 cpm, oxygen saturation was 100% in room air and temperature was 36.6C. External genitalia revealed swollen and edematous glans penis with a constricting metallic ring around the corona. The constricting ring was 22 mm in external diameter, 20 mm in internal diameter and 8 mm wide. There was mild penile engorgement proximal to the constricting metallic ring with suprapubic fullness suggesting acute urinary retention (AUR) as shown in Figure 1 below.

Figure 1. *Showing the constricting metallic device with edematous glans and obvious suprapubic fullness.*

He was immediately wheeled to the emergency theater and had spinal anesthesia as temporary measure to relieve the pain and enable assembling of working tools. Initially we attempted milking the ring under anesthesia but failed due to severe edema at the glans penis. Consequently we used an

orthopedic device (K wire cutter) which was insinuated in a progressive pattern under the constricting metallic ring. The metallic device was gradually but progressively cut and was finally manipulated and retrieved with an artery forcep as shown in figures 3 and 4.

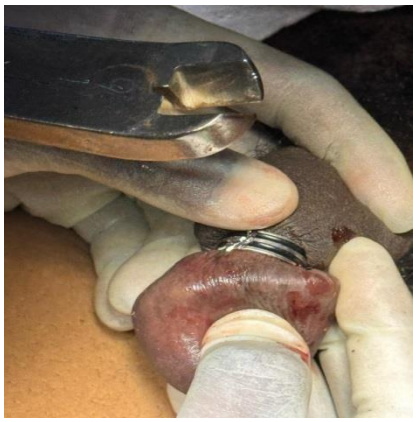

Figure 2. *Showing the K-wire cutter and progress already achieved in retrieving the metallic device.*

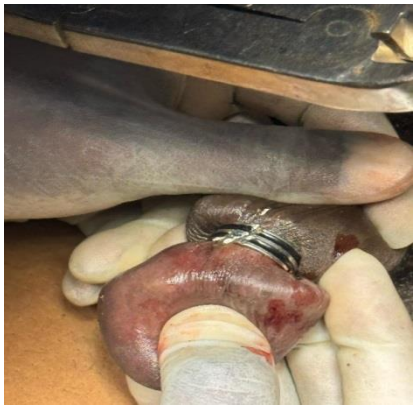

Figure 3. *The metallic device has been cut with the wire cutter awaiting retrieval.*

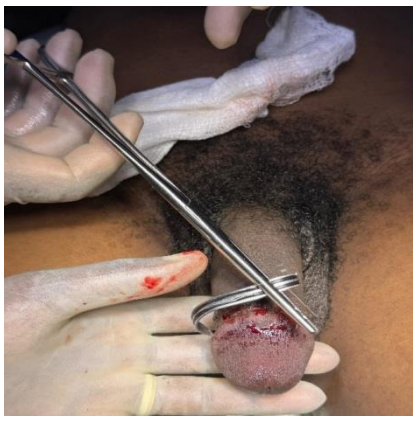

Figure 4. *With the aid of an artery forcep we were able to twist and manipulate the metallic ring out of the penis. Also note that the edematous glans immediately resolved.*

Due to consequent acute urinary retention, we immediately inserted a size 16 french two way catheter for drainage of the urine and forestall progressive retention of urine. We drained 700 ml while on table which further confirms the patient was in AUR which probably must have accounted or added to the excruciating pain. The patient was discharged home same day to continue follow up at the outpatient department. Subsequent interaction with the patient was uneventful and he was counseled to avoid such self-sexual practice in future. Mental health evaluation by the mental health physicians was uneventful.

We are mindful of possible distal penile urethral mucosa trauma at the site of the constricting metallic ring and recommended that the catheter remains in-situ for at least for seven days before removal to enable complete healing of any urethral mucosa injury.

3. Discussion

Penile ring entrapment refers to obstruction to the blood flow of the penis by a foreign body including metallic and non-metallic ring. This is a rare condition that can result to strangulation with eventually loss of distal penis if not retrieved early. [1] Entrapment of penile ring usually occurs during self-sexual activity and sometimes recommended as part of treatment for erectile dysfunction to achieve a firm and prolonged erection. [1] Our index case had penile ring entrapment from erotic self-sexual activity. He inserted the metallic ring after he achieved detumescence and slept off only to wake up with centrally originated erection with entrapment of the previously inserted penile ring. He also had an intense pain which is an obviously sign of strangulation with imminent penile gangrene. This confirms the progressive deteriorative natural history reported by several authors if the offending device is not extricated. [1-13]

Morentin B et al reported an interesting case late presentation of penile strangulation with a plastic bottle neck who presented after two weeks and lost the distal penis due to gangrene. [10] Our index patient presented six hours following entrapment of penile ring and we were able to savage the situation after 7 hours. Though our patient had an excruciating pain, we believe the pain was exaggerated probably due the associated acute urinary retention as we drained 700 ml of amber urine following insertion of urethral catheter after the ring was retrieved in theatre. Kyomukama LA et al reported a case of penile entrapment and acute urinary retention in a 43 year old male patient who had pilot ball bearing ring penile insertion as therapy for erectile dysfunction. The ring was retrieved using electrically powered angled grinder with full penile recovery. [2] Our index case had similar clinical scenario with acute urinary retention. He also had full penile recovery after removal of the metallic device.

Identifying the motivation for insertion of penile ring can be challenging as most patients are unwilling to disclose the incentive behind the insertion of metallic device in the penis. [2] The patients probably seeks medical intervention due to the excruci-

ating pain from the progressive natural history due to obstruction of penile blood flow. Eroticism, erectile dysfunctions or mental health disorder are usually the motivation to insertion of penile rings. [2] Our patient was initially reluctant in disclosing the incentive behind the insertion of a metallic ring in his penis but we later identified erotism and self-sexual activity as the motivation behind his behavior when we assured him of absolute confidentiality. This is in keeping with findings of Kyomukama LA et al which noted challenge in identifying the incentive behind insertion of penile ring as most patients are unwilling to disclose same.

Penile strangulation is a rare clinical condition and the consequences could lead to different degrees of vascular obstruction ranging from mild vascular occlusion that resolves after retrieval of the metallic ring to severe gangrene of the penis. Ivanovski O et al advocated prompt intervention to avoid the potential complications of penile gangrene and auto amputation. [5] Our patient presented early and had prompt retrieval of the offending metallic ring with relieve of acute urinary retention. This underscores the importance of seeking medical intervention early as it averted a dare consequences of losing his distal penis. Sarkar D et al reported four cases of penile strangulation by different objects which were successfully retrieved by aspiration and string method. They noted that instead of using heavy cutting instruments and other surgical methods, string and aspiration technique was desirable. Our approach was at variance with that of Sarkar D et al. [6, 13] We feel aspiration is invasive compared to retrieving the metallic device via cutting with an orthopedic wire cutter without sticking a needle into the penis. Wire cutter was also readily available in our facility. Aspiration and syringing may be desirable in poor resource setting, however we believe cutting the metallic ring was far better because of its non-invasiveness.

Xu T et al reported a positive correlation between the time of incarceration and the length of hospital stay. Our patient was discharged same day when he recovered from spinal anesthesia. We must also note that the decision to give spinal anesthesia was that of the anesthesiologist to calm patient down prior to removal the metallic device. Patel C et al reported that patient refusal to seek medical intervention was the cause of distal penile loss. [10, 12] This was not the case in our index patient who reluctantly sort medical intervention and was able halt the progressive consequences. We must also note that the patient was not impressed with his behavior and appealed we conceal the clinical history from his care givers.

4. Conclusion

Penile ring entrapment is a rare urological emergency that requires prompt intervention to avoid progressive deteriorative natural events which could culminate to penile gangrene with loss of distal penis. While non-metallic devices are easily retrieved, thick metallic constricting rings may require specialist instruments including orthopedic wire cutter or saw to halt the progressive damning consequences. Sexual education, absolute confidentiality and counselling cannot be overemphasized in obtaining the clinical history that led to the bizarre scenario. Future research should focus on improving penile erotic devices and remodeling such devices for ease of application and retrieval. We advocate sexual education to halt extreme bizarre sexual tendencies that may question the mental health of the individual.

Abbreviations

AUR Acute Urinary Retention

Ethical Approval

There is no ethical clearance needed for this manuscript according to local hospital ethical committee.

Author Contributions

Obiatuegwu Kenenna: Conceptualization, Formal Analysis, Funding acquisition, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

Fidelis Lovely: Formal Analysis, Funding acquisition, Visualization, Writing – review & editing

Anyabolu Michael: Data curation, Funding acquisition, Resources

Otabor Christopher: Project administration, Software, Writing – review & editing

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Conflicts of Interest

The authors declare no conflicts of interest.

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