Case Report

Penile Fracture-Report of Two Cases and Review of Current Literature

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Abstract

Penile fracture is an uncommon urological emergency, especially in Bangladesh. The other name is traumatic rupture of the tunica albuginea and corpora cavernosa in the erect penis. It occurs when an erect penis face to buckle under the pressure of a blunt sexual trauma. Patient gives the typical history of immediate detumescence, severe pain, swelling and eggplant deformity of the penile shaft due to penile injury. Immediate surgical exploration and repair of corpora Cavernosa with tunica albugenia is the most effective treatment modality. In normal cases diagnosis is made from history, physical examination alone. In some special cases ultrasonogram, radiological images, including retrograde urethrography or cavernosography are mandatory for proper diagnosis.

Key words: *Cavernosography, Penile fracture, Tunica Albugenia rupture, Urethrography.*

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Introduction

Penile fracture is rupture of one or both of the tunica albuginea, the fibrous coverings that envelop the penis's corpora cavernosa. During vaginal or anal intercourse or aggressive masturbation, it is caused by rapid blunt force to an erect penis.[1] Partial or complete rupture of the urethra or injury to the dorsal nerves, veins, and arteries are sometimes involved.[2] It is a urological emergency that always deems attention.[3] Although penile fracture is easily recognized and therefore classified as a "first-look diagnosis," this clinical entity is always embarrassing for patients as well as partners and goes unreported many times.[4] Eminently it is an entity of clinical diagnosis.[5] Therefore the management of a penile fracture should not include any further investigation rather than surgical exploration. The need for immediate surgery is emphasized, in order to avoid erectile failure and curvature. Many conditions can simulate fracture penis as dorsal vein tears.[6,7,8] Authors reviewed the literature of penile fracture and reported two cases of 21 and 50-year-old men who presented with eggplant deformity of penile shaft and discoloration of the penile skin and swelling penis after cracking sound during forceful bending of penile shaft followed by severe pain at the time of fracture. The main aim of this study was to describe treatment option of 2 patients with fracture penis in our urology department and review of the literature.

Case 1

We report the case of a 21-year-old unmarried student who presented to the emergency department few hours following blunt injury to the penis during forceful bending of the erect

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penis. The patient reported a "tearing/popping" sensation, rapid detumescence, severe penile pain and no blood per urethra when he tried to bend the erect penis by himself. Following the injury, the patient was able to void without any voiding sensation. On physical examination the penis was found swollen, discoloration of the penile skin, scrotum, and part of the perineum, eggplant deformity of penile shaft (Figure 1). "Rolling sign" was present bilaterally, palpated at the right sites of tunica albuginea disruption about 1 cm from the base of the penis and the penis was not tender on examination. Clinically diagnosed with the penile fracture.

Figure 1: Eggplant deformity of penile shaft after penile fracture

Case 2

A 50-year-old married business male presented with a history of bending of his penis during vigorous coitus with his wife after taking an erotic stimulant drug at 12.30 night. During coitus he felt sudden thrust with the body of his wife followed by cracking sound, sudden detumescence, swelling of scrotum and deformity of the penis. On physical examination, the penis was swollen, discoloration of the penile skin, eggplant deformity of penis and "Rolling sign" was present. On the basis of his clinical presentation, a diagnosis of penile fracture was made. A penile catheter of 16F was inserted per urethra to serve as stent Vital signs were normal. Pathological examinations like CBC, BT, CT, S.creatinine, RBS were done. Immediate surgical exploration and repair of rupture tunica albuginea and corpora cavernosa were done under spinal anesthesia. In both cases, a sub coronal circumscribes degloving incision was given. A tear in tunica albuginea and corpora cavernosa was found on the left side and 2 cm distal to the root of the penis and there was a blood clot. Repair of corpora cavernosa and tunica albugenia with sutures of vicryl 2-0 was performed after removing the clot (Figure 2). Post-operatively patient was prescribed antibiotics, analgesic and the urethral catheter was kept for 5 days, which was subsequently removed before discharge (Figure 3). Both of them were asked to abstain from masturbation or intercourse until complete healing occurred. At 3 months interval the optimal voiding function, erection function, and cosmetic result were achieved in one case and in another patient urethral stricture developed, which was repairedsuccessfully after 4 months. Based on our experience, this management approach results an excellent preservation of both penile anatomy and function.

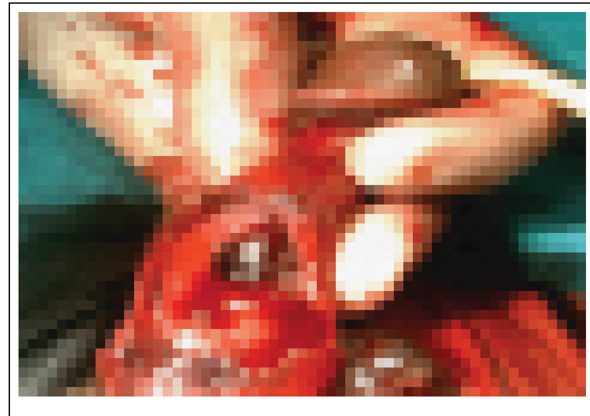

Figure 2: Fracture of Tunica Albuginea and Corpora Cavernosa

Figure 3 : Just after repair of penile fracture

Discussion

Penile fracture is a rare urologic emergency condition that affects all social strata. It has an incidence rate of 1 in 175,000 admissions and is commoner in countries where there issegregation of the sexes for social and religious reasons, where its etiologic factor is mostly from self manipulation.[9,10]
Mechanism of fracture: During an erection, the penis is engorged with blood. If the penis is bent suddenly or forcefully while it's engorged, the trauma may rupture tunica albuginea, the lining ofcorpora cavernosa responsible for erections-resulting penile fracture. As the penis changes from a flaccid state to an erect state, the thick tunica albuginea becomes very thin. The tunica albuginea is the fibrous covering of the penile corpora cavernosa and is directly involved in maintaining an erection. During erection it thins from 2 mm to 0.25 - 0.5 mm, stiffens and becomes less elastic and easily fracturable. Sudden direct trauma or

abnormal bending in erect state causes tearing of the tunica albuginea, usually in transversal direction, rarely oblique or irregular.[5]

Penile fractures have been classified as simple and compound.[11] Simple penile fractures are those with intact skin and urethra while those with urethral rupture are compound. One patient treated in our department had simple fractures another was compound fracture involving the urethra which was reported later having urethral stricture that was corrected surgically. Concomitant urethral injury occurs in about 10-58% of cases.[12] Associated urethral rupture is seen more in coital fractures than those following manipulations that was found in our one case also.[11]

The predisposing factor to concomitant urethral injury in penile fracture is not clear but it is postulated to be due to a more vigorous force applied during coitus compared with the prolonged but lesser force involved in masturbation.[11,13] Penile fracture may present with classic "eggplant deformity"of swollen penis along with ecchymosis confined to Buck's fascia .[11]

The patient usually describe a cracking or popping sound during injury as tunica tears, followed by pain, rapid detumescence, discoloration and swelling of penile shaft.[1,2,3] Fracture typically occurs during vigorous sexual intercourse, when the erect penis slips out of the vagina and strikes the perineum or pubic bone, Other causes maybe masturbation with or without devices. It can happen from any type of blunt trauma affecting the tumescent shaft. Falling out of bed with an erection, extreme sexual activity, especially during coitus in which the female is on top, forceful correction of a congenital chordee and even tucking an erect penis into underwear. In the Middle East self-inflicted fractures predominate. Taqaandan also a cause of penile fracture. It comes from a Kurdish word meaning"to click," involves bending the top part of the erect penis while holding the lower part of the shaft in place, until a click is heard and felt. Penile fracture can usually be diagnosed based solely on history and physical examination findings. Sometimes in complicated cases, and to find out associated injury ultrasonogram, urethrogram, cavernosogram, MRI should be performed. Because of fear and embarrassment the patient present to health care professional sometimes significantly in delay. But in our case both the victim gave detail history when we asked. False fracture penis has been reported in the literature, who presented with penile swelling and echymosis. In those case, they did not describe classic"snap-pop" or rapid detumescence" egg-plant" deformity of the shaft, whose features are associated with fracture penis. Physical examination may not be adequate for confirming diagnosis. Dorsal penile artery or vein injury during sexual intercourse, mimic penile fracture. Lacerations of the corpus cavernosa from gunshot and sporting injuries to the flaccid penis are not considered as penile fractures since they lack the fulcrum for snapping.[12]

In western countries, up to 50% of penile fracture occurs during vigorous intercourse. Other causes include industrial accidents, masturbation, gunshot wound or other mechanical trauma that causing forceful breaking of an erect penis. In the Middle East, the injuries occur due to penile manipulation to achieve detumescence. Another causes are turning over in bed, a direct blow or forceful bending of the penis.In Nigeria reported causes of fracture are masturbation, stuttering priapism, vigorous sexual intercourse, turning in bed, forceful bending in the erect penis by the locally made bamboo bed.[13] The recent finding indicates that penile fracture appears to be in those population who use sexual exciting drugs before sexual intercourse. The case reported above was having coitus with wife using sexual stimulant drugs and another was masturbation.Treatment may be either conservative or surgical. The conservative management of penile fracture includes splinting cold compresses, and a combination of anti-inflammatory, analgesic medications and fibrinolytic. In our 2 cases, we did surgical exploration immediately after fracture and repaired.This concept has fallen into disfavor because of the high complication rates (29-53%) of nonoperative therapy .[14]

Commonly complications encountered following conservative management as reported in kinds of literature are penile angulation, painful erection, and coitus, A-V fistula, infected hematoma, abscess formation and impotance.[3] For these complications immediate surgical intervention is advocated as we did in our cases.[15] The goal of immediate surgical correction to the fracture a penis is restoration of the penis to its pre-injury state, prevent erectile dysfunction, maintain penile length and allow normal voiding.[3] It causes short-term hospital stay, patient satisfaction, safe from penile deformity development and erectile dysfunction. Ideal management of penile fracture include identification of proper injury site, evacuation of hematoma, removal of corporal debridement, properly closure of tunica albuginea, corpora and ligation of any bleeding vessels.[16]

Three types of incisions are advocated in kinds of literature: direct incision over corpus cavernosum causes minimal dissection of the neurovascular bundles, less trauma, and even local anesthesia can be used but it does not allow complete repair. Some did repair with general anesthesia, but in our cases we did a repair with spinal anesthesia and achieved a good result. There was no impaired penile sensation or distal skin necrosis as described by others. That`s why sub-coronal incision with spinal anesthesia appears to be satisfactory than other incisions. Treatment options for partial urethral tears include urethral catheterization, primary closure with non-absorbable suture, or suprapubic cystostomy tube. A penile fracture that may have devastating physiologic and psychologic consequences. However, with prompt diagnosis and expedient surgical management, outcomes remain excellent and complications are minimal.[17,18,19]

Conclusion

The diagnosis of penile fracture is mostly a clinical one. Prompt surgical exploration and repair are advocated in almost all cases. Most commonly, the rupture occurs on the lateral side of the proximal corpora, but it can occur anywhere along the corpora and produce a variety of swelling patterns. Hematuria and voiding symptoms are not specific to a urethral injury. Their presence should prompt the performance of retrograde urethrography.

Corporal cavernosography might aid in localizing an unusual injury prior to surgery; however, the procedure is limited by technical requirements and the possibility of false-negative results. Immediate surgery reduces long-term complications; post-traumatic penile curvature remains the most common long-term complaint.

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