



Trauma and reconstruction

A case of traumatic penile fracture with simultaneous rupture of both corpora cavernosa and complete urethral transection

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ARTICLE INFO

Keywords:

Penile fracture
Urethral transection
Bilateral corpora cavernosa injury

ABSTRACT

Penile fracture is a rare injury to the penis caused by blunt trauma. The presence of urethral injuries sustained during fracture is less than 10%, but very few cases involve complete circumferential urethral transection. We present a case of a patient who presented with traumatic penile fracture involving bilateral corporal cavernosa injury and complete urethral transection.

Introduction

Penile fracture is a urologic emergency defined as traumatic rupture of the tunica albuginea and corpora cavernosa which commonly occurs as a result of blunt force to the penis during intercourse.¹ Less than 10% of patients present with concomitant urethral injury.² Management is primarily surgical to prevent long term complications of erectile dysfunction, penile curvature, and urethral stricture.¹

Case presentation

A 34-year-old man presented to the emergency department for evaluation of a penile injury that had occurred 12 hours prior. The patient stated that he was engaged in sexual intercourse when he hit his penis against his partner's pelvic bone, heard a popping sound followed by immediate pain to his penis and perineum. He did not seek immediate care. Since that time, he had worsening pain, swelling, deformity, and discoloration of his penis. He developed blood at the urethral meatus and was unable to pass urine after that time. Physical examination revealed the penis to be curved 70° at mid shaft, with severe edema and ecchymosis and subcutaneous hematoma extending over the proximal penile shaft and pubic symphysis (Fig. 1). The penile shaft was exquisitely tender to palpation. His scrotum was not swollen or tender, and testes were normal bilaterally with no masses or tenderness appreciated. Abdominal examination revealed his bladder was palpable and severely tender to palpation. A bladder ultrasound was obtained which showed a distended bladder with over 1L of urine. Placement of a 16 Fr Foley

catheter was attempted, but could not be inserted past mid-penile urethra. A suprapubic tube was then placed at bedside for immediate bladder decompression per standard procedure. He was then taken urgently to the operating room for exploration and repair.

Intraoperatively, we identified a transected urethra (penile urethra) and two large corporal injuries in bilateral corpora (Fig. 2). The corporal injuries were repaired using 2-0 Maxon with simple interrupted sutures. There was no further bleeding from corpora after closure. The transected urethra was then spatulated on both sides. It was closed with 4-0 Maxon suture in interrupted, mucosa-to-mucosa tension-free fashion. An 18 French Foley catheter was inserted after the urethral anastomosis and placed in bladder with good return of urine. Buck's fascia was then closed over our urethral and corporal injury repairs using 3-0 Vicryl. The circumcising incision was closed with interrupted 3-0 Chromic suture. The patient was discharged the next day with his suprapubic tube and capped Foley catheter in place. Plan was for retrograde urethrogram and removal of his suprapubic tube at three weeks.

At follow-up, retrograde urethrogram revealed no contrast extravasation from his urethra (Fig. 3). In addition, he reported that his erectile function was returning and he endorsed nocturnal tumescence with only slight downward curvature of his penis.

Discussion

Penile fracture is a rare urologic emergency that results from disruption of the tunica albuginea and rupture of corpora cavernosa. It has an incidence of 1 in 175,000, with significant geographic variance.¹

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<https://doi.org/10.1016/j.eucr.2020.101439>

Received 27 September 2020; Accepted 2 October 2020

Available online 5 October 2020

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Fig. 1. Penile injury upon presentation.

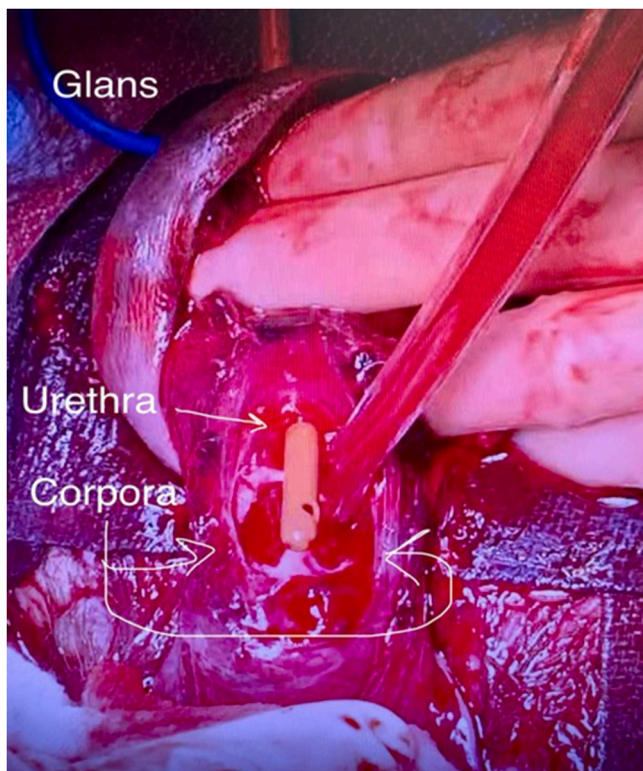


Fig. 2. Intraoperative findings, noting the relationship between the transected urethra and bilateral corpora cavernosa.



Fig. 3. Follow-up Retrograde Urethrogram showing no contrast extravasation in the penile urethra.

Although penile fracture is considered a rare event in Western countries resulting when the erect penis hits the female pubic symphysis during sexual intercourse, this condition is much more common in the Middle East partially due to the “Taghaadan” maneuver.³ The diagnosis is primarily clinical, with the patient often reporting a “popping” sound followed by pain, rapid detumescence, swelling, and bruising. Patients may present late due to fear of embarrassment, which may delay functional and cosmetic recovery.

History and physical exam are sufficient to diagnose penile fracture in most instances. Imaging can be used in cases where the diagnosis is not clear to confirm penile fracture. Common imaging modalities include cavernosography and sonography for initial evaluation. In cases of penile trauma, false fracture can occur with similar symptoms of penile fracture such as swelling and ecchymosis, but the classical “popping” sound and rapid detumescence after injury remain absent. Retrograde urethrography can be used to evaluate for the presence of a urethral injury. MRI is an excellent imaging modality for confirming the diagnosis, but costs and availability has limited its use.⁴ Bilateral corporal cavernosal rupture is a rare event, occurring only in less than 10% of cases⁵ The presence of associated urethral injuries in penile fractures has been reported to occur in 5.6%–9%.^{1,2}

In cases of penile fracture, immediate surgical treatment is preferred over conservative management. Studies have shown that immediate intervention is associated with improved outcomes including shorter hospital stay and reduced erectile dysfunction.² Urethral injury is managed based on injury extent. Minimal urethral injury can be treated with urinary diversion or direct suture of the tear. In severe urethral injury or complete urethral transection, mucosa to mucosa tension-free anastomosis is needed to repair the defect²

Funding

No funding was received for this work.

Transparency declarations

K.F.H., J.J., N.B., J.S.E., J.D.D. have no financial conflicts of interest to declare.

Contributions

K.F.H., J.J., N.B. and J.S.E. wrote the main manuscript text, K.F.H. prepared the figures. K.F.H., J.J., N.B., J.S.E., J.D.D. reviewed and approved the manuscript.

Acknowledgements

The authors thank the patient and his entire care team at the University of Nebraska Medical Center.

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