

CASE REPORT

FRACTURE PENIS WITH COMPLETE URETHRAL DISRUPTION DURING INTERCOURSE

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We present a rare case of fracture penis with complete urethral disruption in a 38 years old male. This resulted in an erect penis during sexual intercourse. He presented with diffuse and tense swelling of the penis along with acute urinary retention and distended urinary bladder. Emergency exploration revealed complete urethral disruption with tears in both corpus cavernosa. Evacuation of haematoma, repair of corpora and primary urethral repair was performed. Post-operative recovery was smooth and the patient developed satisfactory erectile and voiding function.

Keywords: Fracture penis, Urethral disruption, Erectile and Voiding function

INTRODUCTION

Fracture penis is an injury characterized by rupture of the tunica albuginea enveloping the corpus cavernosum. The rupture can also affect the corpus spongiosum.¹ It is mostly caused by a blunt trauma to an erect penis. It can be accompanied by partial or rarely complete urethral rupture or injury to the dorsal nerve and vessels. The key indicators of urethral injury include blood at the meatus, gross haematuria, microscopic haematuria (>5 RBCs/HPF), dysuria or acute urinary retention.

The frequency of penile fractures is likely to be under-reported in the published literature. Trauma during sexual relations is responsible for approximately one third of all cases; the female dominant position is most commonly reported. The mechanism of action may lead to embarrassment, causing patients to avoid seeking treatment and contributing to late presentation. As of 2001, 1331 cases were reported in the literature. The incidence of concomitant urethral injury in reported cases was 10–58%, which were mostly incomplete/partial urethral injury.

Penile fracture is a urological emergency that may have devastating physiological and psychological consequences. However, with prompt diagnosis and expedient surgical management, outcomes remain excellent and complications are minimal.²

CASE REPORT

A 38 years old male presented to the emergency with 18 hours history of sudden cracking sound with severe pain in penis which started during the sexual intercourse. This was associated with rapid flaccidity and swelling over the penis with discoloration. He had been unable to void urine since the start of symptoms and at the time of presentation he had severe pain in the lower abdomen due to acute urinary retention. On examination he was haemodynamically stable with normal vital signs. He had marked swelling over the shaft of the penis with bluish discoloration extending to the upper scrotum. The urinary bladder was distended and tender. The Hb was 11 g/dL, total leucocyte count was $9 \times 10^9/L$ and 70%

were neutrophils. The ECG was normal. A diagnosis of fracture penis was made and emergency exploration was contemplated under general anaesthesia.

A circumferential subcoronal degloving incision was made and the skin was retracted. Large haematoma was found at the proximal part of the shaft of penis. An underlying bilateral partial rupture of the corpus cavernosum with complete urethral and corpus spongiosum disruption was noted (Figure-1). The proximal and distal corpus spongiosum was debrided and mobilized, urethra was spatulated and end to end primary urethroplasty was performed with vicryl 5/0 over a 16Fr pure silicone Foley's catheter. The short tears in the tunica albuginea around the corpus cavernosa were repaired with vicryl 3/0 (Figure-2). Haemostasis was secured and the penile shaft skin was closed with vicryl 3/0 to the subcoronal skin (Figure-3). Mild compression dressing was applied and the patient was kept on intravenous ceftazidime 1 G 12 hourly. He was discharged on third post-operative day and kept on oral levofloxacin 500 mg 12 hourly for 7 days. The Foley's catheter was removed on 14th post-operative day, which was followed by normal act of micturition. After 3 months the patient had a normal erection/ejaculation with a normal voiding function.

DISCUSSION

In the West, penile fracture usually occurs due to unphysiological bending of the erect penis during sexual intercourse.³ This is mostly seen in woman-on-top positions, resulting in impact against the female pelvis or perineum and bending laterally. Other potential causes include industrial accidents, masturbation, gunshot wounds or any other mechanical trauma that causes forcible breaking of an erect penis. In Middle Eastern countries, the injury is usually due to penile manipulation to achieve detumescence. This is the traditional practice of *Taqandan* (also *Taghaandan*), which comes from a Kurdish word meaning 'to click', involving 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. Additional rare aetiologies include turning over in the bed, a direct blow, forced bending or hastily removing or applying clothing with the penis erect. Due to high energy trauma, urethral rupture is associated in up to 38%⁴ of penile fractures, which are mostly partial. Complete urethral disruption is a rare manifestation and nearly all occur due to intense sexual intercourse.^{5,6} However in low energy trauma the urethra is rarely involved. Tunica albuginea is one of the strongest fasciae in the human body. In a flaccid state it is up to 2.4 mm thick and during erection it becomes as thin as 0.25 to 0.5 mm, thus becoming vulnerable to fracture. The intra-corporeal pressure of 1500 mmHg or more during erection can tear the tunica albuginea.

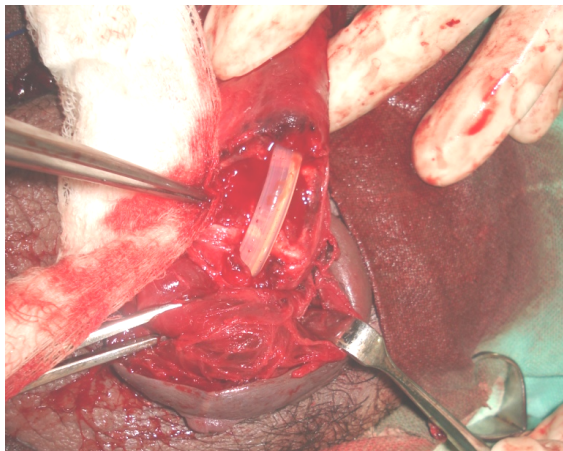


Figure-1: Complete Urethral Disruption with rupture of bilateral corpus cavernosum

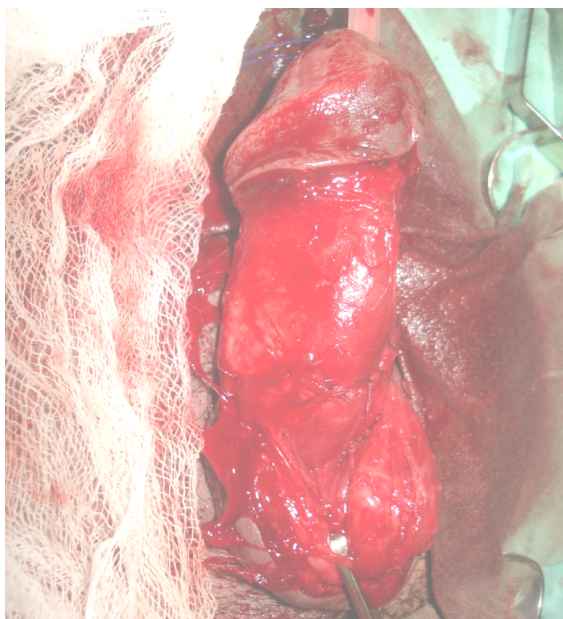


Figure-2: Repair of corpus spongiosum with urethra and corpus cavernosa



Figure-3: Circumferential subcoronal degloving incision (closed)

The patients with fracture penis usually present with a popping, cracking or snapping sound with immediate detumescence. Depending on the severity of injury, the pain can be mild to severe. The normal external penile appearance becomes completely obliterated because of significant penile deformity, swelling and ecchymosis (eggplant deformity). The penis is abnormally curved, often in an S-shape. The penis is often deviated away from the site of the tear. If the Buck's fascia is intact, penile ecchymosis is confined to the penile shaft, however if the Buck's fascia has been torn, the swelling and ecchymosis are contained within the Colles' fascia. In this instance, a "butterfly-pattern" ecchymosis may be observed over the perineum, scrotum, and lower abdominal wall. Patients with concomitant urethral trauma may report with haematuria upon post-injury voiding. Approximately 30% of men with penile fractures demonstrate blood at the meatus. Some patients may also report dysuria or experience acute urinary retention. Retention may be secondary to urethral injury or periurethral haematoma that is causing a bladder outlet obstruction. Urinary extravasation may be a late complication of unrecognized urethral injury. Successful voiding does not exclude urethral injury; therefore, retrograde urethrography may be required in equivocal cases.

Zargooshi⁷ reported urethral rupture in 3% of penile trauma. Fergany *et al*⁴ reported 8 cases of penile fracture over a period of 6 years at the Cleveland Clinic Foundation. A concomitant urethral injury was found in 3 cases (38%) with only one (12.5%) complete urethral disruption. Agarwal *et al*⁸ reported 15 cases of penile fracture from 2002 to 2007 in which 4 (26%) had concomitant urethral injuries. They also concluded that further evaluation

beyond history and clinical examination is not necessary for managing patients with suspected penile fractures and early surgical repair is associated with good outcome and minimal complications. Cavalcanti *et al*⁹ reported 14.2% cases of urethral injury with penile fracture with complete disruption in 3.8% cases. Wang *et al*¹⁰ noted 9% cases of complete urethral disruption out of 11 cases of penile fracture reported from 1989 to 1993.

Initially, non-surgical treatment was introduced for penile fractures. Conservative therapy consisted of cold compresses, pressure dressing, penile splinting, anti-inflammatory medications, fibrinolytics, antibiotics, erection suppressing drugs and supra-pubic urinary diversion with delayed repair of urethral injuries. This was associated with high complication rate (29–53%). The complications included missed urethral injury, penile abscess, nodule formation at the site of rupture, permanent penile curvature, painful erection, stricture urethra, painful coitus, erectile dysfunction, corporourethral fistula, arteriovenous fistula and fibrotic plaque formation. Presently it is considered as an emergency and immediate surgical repair is the gold standard treatment. The surgical repair for penile fracture was first described by Fetter and Gartman in 1936. The goals of treatment for penile trauma are restoration of penis to pre-injury state, preservation of penile length, erectile function and maintenance of the ability to void while standing. We used a

circumferential subcoronal degloving incision however a midline vertical incision is also recommended.

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