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CASE REPORT

Bilateral Corporal Fracture With Urethral Rupture Following Intercourse-Case Report With Review Of Literature

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ABSTRACT

A 32-year-old man presented with complaints of pain and sudden detumescence of penis during intercourse. On examination his penis was flaccid but swollen and deviated to the left side with severe tenderness on the right side of shaft. On exploration a diagnosis of bilateral fracture penis with penile urethral rupture was confirmed. Repair of both the corpora and primary anastomotic urethroplasty was accomplished successfully. Foley's catheter was removed after six weeks and immediate urethroscopy confirmed complete healing of urethra. At six months the erectile function and voiding was satisfactory. We present this case to highlight the rarity of bilateral corpora fracture complicated by urethral rupture and to review the current literature and it's management.

Key Words: Penile fracture, genitourinary trauma, urethral rupture, corpora-cavernosa tear

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Introduction

Fracture penis is an uncommon injury due to rupture of the corpora-cavernosal tunica albuginea that usually follows forceful injury on an erect penis during sexual intercourse[1]. Co-existing corpora-spongiosal and urethral injury has been reported in (10%-38%)[2] of cases while bilateral corporal fracture with complete urethral disruption is even rarer and to the best of our knowledge only five similar published cases have been reported so far[3],[4],[5]. We report an unusual and rare case of bilateral corporal cavernosal laceration with complete urethral rupture. Immediate surgical exploration and repair of both corpora (corporoplasty) with urethroplasty forms the mainstay of treatment in such cases that provides the best long-term results[7].

Case Report

A 32-year-old man presented in the surgical casualty with complaints of pain and sudden detumescence of penis following a sexual intercourse. Interrogation revealed that during intercourse he was on the top and while thrusting repeatedly he inadvertently thrust his penis on the pubic bone of his partner. On examination his penis was flaccid, swollen, deviated to the left, there was severe tenderness of the right shaft and a blood stained meatus.

Based on a clinical diagnosis of fracture penis and urethral injury he was explored under anaesthesia. A 2 cm tear in right mid corpora and a 0.5 cm tear in the left corpora with a virtual $3/4^{th}$ circumferential tear in penile urethra at the same level was detected. Bilateral corporal repair with inverted sutures of prolene 2-0 was performed. After a limited mobilization of the penile urethra a spatulated end-to-end urethroplasty was carried over a 20 F silicone foley's catheter. No suprapubic cystostomy was performed. Postoperatively patient was prescribed antibiotics, estrogens

and catheter care. He was discharged on fifth postoperative day on a foley's catheter. Four weeks later the catheter was removed and immediate urethroscopy with a 21 F cystoscope confirmed complete healing of urethra. At a current follow up of six months his erectile function and voiding evaluated by penile Doppler and uroflowmetry is satisfactory.

Discussion

Bilateral penile fracture associated with urethral rupture following intercourse is an uncommonly reported injury[3],[4],[5] (as shown in [Table/Fig 1]. It is the extreme reduction (by about 75%) in the thinness of the corporal tunic (from 2 mm to 0.25mm) during erection and an intra-corporal pressure of at least 1500mmHg that predisposes it to trauma and fracture[5],[6]. It is conceivable that only high-energy injuries can lead to penile fractures with urethral ruptures. At times rarely a flaccid penis may also sustain trauma (low energy injury) due to masturbation or deliberate manual kneading of the penis. Pre-existing histopathological abnormalities such as fibrosclerosis and perivascular lymphocytic infiltration (due to repetitive stress/trauma induced hematomas) are also known to predispose to a tear in the buck's fascia leading to a penile fracture on bending[6]. Diagnosis is generally straightforward, and is made in a majority on the basis of a proper history and clinical examination. History of sudden pain and detumescence of the penis during a sexual encounter associated with a snapping sound usually confirms the diagnosis[7]. Clinically a swelling of the penile shaft extending up to the scrotum associated with contralateral deviation of the penile shaft due to the mass effect of the intrafascial hematoma and tear of the Buck's fascia, that produces the commonly seen characteristic "butterfly sign" described by Soylu et al[3]. The presence of blood stained external urinary meatus should suggest a concomitant urethral injury (as partial or complete urethral tears may co-exist in up to 10-38% of cases)[2]. When in doubt a gentle retrograde urethrogram (RGU) is very helpful[8],[9]. Mydlo et al [10] also evaluated the utility of pre-operative RGU and cavernosography(CG) in their study of a series of seven cases of penile fracture(comparison with intra-operative findings) and found that, in two cases the RGU and CG revealed lacerations that were not initially detected surgically and in another two of their cases, the RGU and CG were falsely negative. They concluded that preoperative CG and RGU might show additional sites of corporal/urethral tears because hematoma formation may mask some tears (RGU~false negative rate of 15%)[10]. In certain atypical situations other imaging modalities such as colour doppler ultrasound (indicated only in the post-operative follow-up of such cases) [11] and pre-operative magnetic reasonance imaging (to determine the various sites of rupture) have only a limited role[12]. However at present the routine use of all these investigations is not justified.

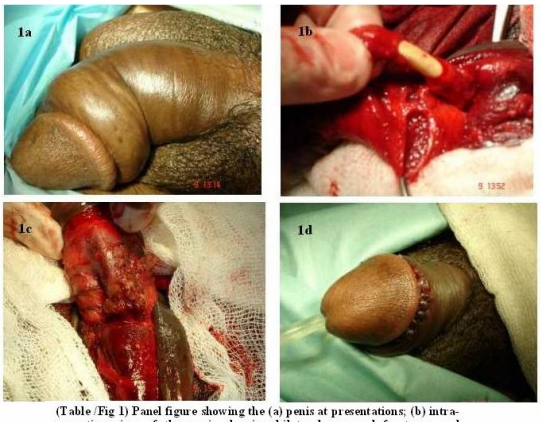
Management entails immediate surgical exploration (careful examination of all the three corpora and urethra via a subcoronal degloving incision), a thorough wound toilet and corporal repair with interrupted inverted non-absorbable sutures. In cases of associated urethral injury primary stented urethroplasty offers the best results. Urinary diversion should only be offered to complex cases where the urethral distraction defect is wide or in cases where a patient presents late with a strong element of sepsis negating a primary urethroplasty.

(Table/Fig 1) Showing the profile of various published/reported cases of bilateral corporal penile fracture with urethral disruption sustained during intercourse.

(Table/Fig 1) PUBLISHED CASES OF POST COITAL BILATERAL CORPORAL FRACTURE WITH COMPLETE URETHRAL RUPTURE			
AUTHOR	SALIENT FEATURES (NOS OF CASES)	MANAGEMENT	OUTCOME
Tanello et al ,2005	B/L Corporal laceration with complete urethral rupture (1)	Immediate surgical repair + primary urethroplasty	Excellent sexual & voiding function at 1 year
Soylu et al ,2004	Transverse two tears in both corpora with complete urethral disruption (1)	Immediate surgical repair + hematoma evacuation + primary urethroplasty	Normal erectile & voiding function at 3 months
Mydlo et al,2001	B/L corporal rupture (3) + urethral injury (5)	Pre-op cavernosogram+ RGU +primary surgical repair	Normal voiding & sexual function
Hafiani et al,1995	B/L corporal laceration with complete urethral rupture (1)	Immediate surgical repair	Normal voiding & sexual function
Kowalczyk et al, 1994	B/L corporal laceration with partial urethral rupture (1)	Immediate surgical repair	Normal voiding & sexual function
Pavard et al,1988	B/L fracture corpus cavernosum + complete urethral rupture (1)	Immediate surgical repair	Normal voiding & sexual function

Conservative treatment should be strongly discouraged as this carries a high risk of penile deformity, plaques, poorly sustained, angulated and painful erections in the long term[5],[13]. Hence immediate surgical exploration, repair and reconstruction should

be strongly advocated as the procedure of choice in all such cases presenting to the emergency as it carries the best long-term result in terms of erectile and voiding functions with avoidance of complications.



(Table /Fig 1) Panel figure showing the (a) penis at presentations; (b) intra-operative view of the penis showing bilateral corporal fractures and rupture of the urethra; (c) view of the repaired penis with urethroplasty and (d) post-operative final view of the repaired penis.

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