Case Report

Myriad presentations of penile fracture: report of three cases and review of literature

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Abstract

Penile fracture is an unusual though not a rare condition but underreported. It is defined classically as the disruption of the tunica albuginea with rupture of the corpus cavernosum. Penile fracture can be misdiagnosed with rupture of corpus spongiosum clinically. Therefore, we are presenting three cases due to its varied clinical presentation and management. In first patient, there was a tear in the corpus spongiosum and a partial tear in the ventral urethra. Both defects were repaired with interrupted sutures. In the second patient, there was a rupture of corpus cavernosum, which was primarily repaired. After 1-year of primary surgery, patient again came with similar complaints, and diagnosis of scar dehiscence was made. Patient was treated conservatively with satisfactory results on follow-up. Third patient came with a history of 1-week. Intra-operative findings revealed only hematoma without any defect in corpora cavernosum, corpus spongiosum, and urethra. Only evacuation of hematoma was done. Early surgical treatment of penile fracture is advantageous. In recurrent penile fracture, if no penile deformity or any reasonable clinical and radiological evidence, then conservative management is advocated. Even when presentation is delayed up to 1-week, operative management has shown good results.

Keywords: Corpus spongiosum, penile fracture, recurrence, urethral injury

Introduction

Penile fracture is the disruption of the tunica albuginea with rupture of the corpus cavernosum secondary to blunt trauma to the erect penis. It is an unusual though not a rare condition, underreported mainly due to social and cultural inhibitions. The usual presentation of penile fracture is pain, swelling, ecchymosis and the rapid detumescence. Approximately, 10–20% penile fracture involves urethral injury. Recurrent penile fracture or its delayed presentation, both requires immediate surgical exploration. We wish to report three consecutive cases of penile fracture in our unit, which posed challenges due to the varied nature of presentation and management. The aim of this work is that the primary care physician should know about any unexpected history or symptom of a rare and often serious condition.

Case Report

We treated three patients and four episodes of atypical penile fracture over the last 3 years. The demographic features, clinical presentation and investigations, and intra-operative findings done for the three patients are described in Tables 1 and 2.

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An individualized treatment plan was followed for all the four episodes. In the first patient, a hematoma was found on the ventral subcutaneous aspect of the penis [Figure 1a] overlying a tear of 4 cm in the corpus spongiosum and a partial tear of 3 cm in the ventral urethra [Figure 1b]. The dorsal aspect had no defect. The urethral defect was repaired in a watertight fashion with 3-0 absorbable interrupted sutures over a silicon catheter. The corpus spongiosum defect was repaired similarly. The patient recovered well and had normal erectile function 1-year after operation.

In the second patient, there was no hematoma; a 2 cm defect was present in the left corpus cavernosum dorsally, which was repaired with 3-0 interrupted absorbable sutures. The patient had an uneventful postoperative course; however, 1-year later, he presented to the emergency department with pain, swelling and rapid detumescence, following intercourse. There was no defect or deformity. A hematoma near the scar was noted on ultrasonography. A diagnosis of scar dehiscence was made and managed conservatively. The patient was well 1-year after the second episode.

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Table 1: Demography and clinical features of the patients

Demography		Clinical profile										
Age (years)	Time of presentation	Etiology	Crackling sound	Pain	Detumescence	Swelling	Discoloration	Deformity	Blood at meatus	Palpable defect	Recurrent	Hematoma
40	5 h	Intercourse	No	Yes	Yes	Yes	Yes	Yes, dorsally	No	No	No	Yes
36	3.5 h	Intercourse	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes, left side	No	No
38	3 h	Intercourse	Yes/no	Yes	Yes	Yes	No	No	No	No	Yes	Yes
54	1-week	Intercourse	No	Yes	No	Yes	No	Yes, dorsally	No	No	No	Yes

Table 2: Investigation and intra-operative findings of the patients

Investigation	Intra-operative findings		
Ultrasonography	Corpus cavernosum	Corpus spongiosum	Urethral injury
No	No	Yes	Yes, 3 cm
No	Yes, left side	No	No
Hematoma near previous operative site	May be? Scar dehiscence	No	No
Yes, localized hematoma right lateral wall	No	No	No

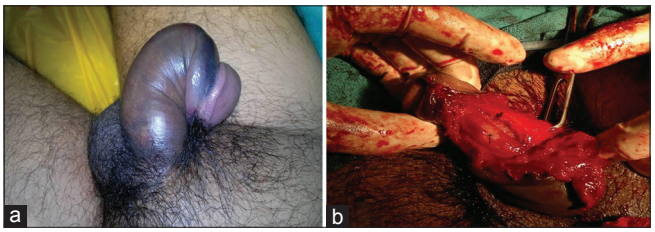

Figure 1: (a) Classical penile deviation of one of our patients. (b) Intra-operative photo-urethral rupture (single arrow), corpus spongiosum rupture (double arrow)

The third patient, a 54-year-old man, presented to the surgery clinic 1-week after symptoms following intercourse with only hematoma [Figure 2]. Intra-operative findings showed hematoma on the ventral aspect, with intact corpora cavernosum, corpus spongiosum, and urethra. Evacuation of hematoma was performed. After 8 months of follow-up, no adverse symptoms were reported.

Discussion

Penile fracture is an uncommon condition in which there is a disruption of the tunica albuginea with rupture of corpus cavernosum secondary to blunt trauma to erect penis. It is most commonly associated with sexual intercourse and occurs when the rigid penis slips from the vagina striking the partner's perineum or pubic bone.[1] Other modes of blunt trauma to the penile shaft have been reported in different socio-geographical areas like taghaandan.[2]

The tunica albuginea has great tensile strength and can withstand pressures of up to 1500 mmHg and can stretch from 2.4 mm to up to 0.25–0.5 mm, which when combined with abnormal bending leads to increased intra-cavernosal pressure.[3] Injury commonly occurs along the ventral aspect of the corporal bodies as this area corresponds to thinning of Buck's fascia, as it splits with one lamella continuing to surround the corpora cavernosum and another to invest the corpus spongiosum.[1] Diagnosis of most penile fractures is made on clinical history and examination. Ultrasonography is used when the diagnosis is unclear. Retrograde urethrography is a better tool to evaluate urethral trauma but magnetic resonance imaging is a better modality to assess penile fracture.[4]

Associated urethral injuries are rare, reported in 10–20% patients.[4,5] Bilateral corporeal rupture or penile fracture after intercourse is associated with a higher risk of urethral injury. The classical signs of urethral injury may be absent, as in our case. Signs of urethral injury include blood at meatus, inability to void or hematuria.[6] Urethral injuries may be repaired in a spatulated, watertight fashion over a catheter,[5] or, can be managed by urinary diversion alone (if minor).[7]

An isolated corpus spongiosum injury with partial thickness urethral injury is extremely rare. We could retrieve only one case report of isolated corpus spongiosum injury in English-language literature. A 29-year-old man presented with acute penile symptoms following intercourse. Clinical and radiological findings suggested a typical cavernosal injury; however, exploration revealed otherwise. Operative management and outcome were similar to our patient.[8]

Conservative treatment after an acute episode has been advocated by few authors[9-11] when there is no visible penile deformity, when there is reasonable clinical and radiological evidence to exclude cavernosal injury, or, when the patient is apprehensive about the results. In one of our patients, there was an apparent recurrence, a minimal deformity of the shaft was seen along with a hematoma at the previous scar on ultrasonography. However, since definite cavernosal injury was not evident and the patient was hesitant for operation, a wait-and-watch policy was adopted. When the symptoms resolved after 5 days, we assumed the cause of the recurrence to be a scar dehiscence with hematoma. This approach has been followed earlier,[12] and we advocate this situation (scar dehiscence with hematoma) as an indication for conservative management.

Surgical treatment of acute cavernosal injuries has shown to be advantageous; in terms of faster recovery, lesser morbidity like impotence and improvement in penile deformity.[4,7]. Even when presentation is delayed up to 1-week, operative management has shown to yield, good results.[13] The unusual features seen

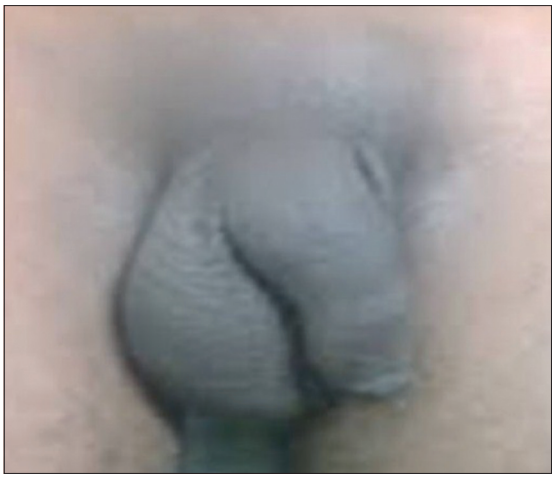

Figure 2: Classical egg-plant deformity on delayed presentation

in our patients were: An isolated injury to corpus spongiosum with partial urethral injury in one, a partial recurrence of penile fracture successfully managed conservatively in another, and delayed presentation in the third.

As we all know that most patients' journey starts and sometimes ends in primary care, often with vague symptoms that are difficult to diagnose initially. This filtration and interpretation of physical symptoms associated with social and psychological complexities form an important part of clinical practice, and successful management of such patients can only be appreciated by the generalist.

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