

## A case of penile fracture at the crura of the penis without urethral involvement: Rare entity

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### ABSTRACT

Penile fracture is a rare injury, most commonly sustained during sexual intercourse. We report the case of a 29-year-old man who presented with bilateral rupture of the crura of the cavernosa without urethral injury. This is the first case in the literature to present with this unique finding. Urgent surgical exploration was performed and the injuries repaired primarily. At follow-up, the patient reported satisfactory erectile function. This case highlights the importance of early diagnosis with unusual presentation and early surgical repair for better outcome.

**Key words:** Crura, doppler, erection, fractures, surgery

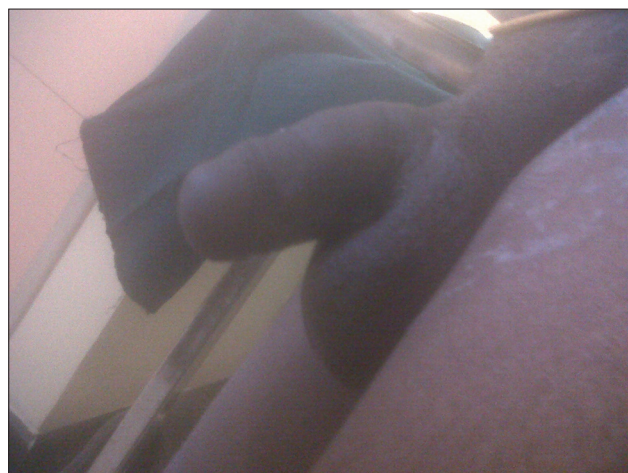
### INTRODUCTION

Penile fracture remains a rare, yet likely underreported condition.<sup>[1]</sup> The first documented report of this injury was more than 1000 years ago. More than 1600 cases of penile fracture have appeared in the medical literature to date.<sup>[2]</sup> Diagnosis is usually clinical and urethral injury should be suspected in penile fracture, especially in those cases with bilateral cavernosal rupture.<sup>[3]</sup> Penile fracture usually occurs on the penile shaft and so far in the literature there have been no reports of bilateral crural rupture occurring in the crus of the cavernosa without urethral involvement .

### CASE REPORT

We report the case of a 29-year-old male who presented to the emergency department 12 h following blunt injury of the penis during a trivial two-wheeler

accident. The two-wheeler which he was driving had a large gap between the petrol tank and the seat. The patient was wearing a “dhoti”, traditional wear in South India which makes the penis more susceptible to injury. While travelling, he had to apply a sudden brake which resulted in a sudden push of his body against the petrol tank and in the course of this event, his erected penis was caught in the gap between the seat and the tank which resulted in this injury. He immediately experienced a sensation of “tearing”, rapid detumescence, severe penile pain and mild swelling at the root of the penis but was able to void well. The patient approached us 12 h after the injury and on examination a tender and swollen penis at the root was seen [Figure 1a]. Urethral meatus was normal. No retrograde urethrogram (RGU) was performed as patient was voiding well and urine analysis was normal. The patient was taken



**Figure 1a:** Physical examination demonstrating a flaccid and mild swelling of the penis at the root

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to the operating room for urgent exploration. However, a preoperative Doppler ultrasound was done which revealed clots confined to the crus of the left cavernosa; based on this we applied a penoscrotal incision. On exploration, clots were found deep down at the crura of the penis which were cleared [Figure 2a]. No local debridement or any vessel ligation was required. After clot evacuation, a deeply located 1-cm transverse rupture of the crus of both corpora cavernosa was discovered [Figure 2b]. The defects were repaired in two layers, the inner layer sutured with 3-0 vicryl in a simple running fashion and the outer with 4-0 prolene interrupted sutures [Figure 2c, 2d]. The urethra was normal, but considering the bilaterality and extent of the injury, an intraoperative RGU was done which was normal. An 18-French Foley catheter was placed into bladder which was removed the next day and discharged. He was advised to abstain from intercourse for at least four weeks. He was called for follow-up after two weeks during which his wounds were completely healed [Figure 1b] and he was started on oral phosphodiesterase Type 5 Inhibitors- Sildenafil 25 mg once a day for one month. During his follow-up after three months, he expressed satisfactory painless erections and his international index of erectile function (IIEF)-ED domain score was 23 and rigidity grade was 3 which were clinically acceptable. A follow-up Doppler ultrasound was done, which showed no leakage during the tumescence phase.

## DISCUSSION

Penile fracture is a rare urological emergency.<sup>[1]</sup> The tunica albuginea is a structure of great tensile strength that is able to withstand rupture at pressures up to 1500 mmHg. The tunica albuginea thins markedly during erection, which when combined with abnormal bending leads to excessive intracavernosal pressure and most often a transverse laceration of the proximal shaft.<sup>[1,4]</sup> The tunica albuginea is 2 mm thick in a flaccid penis, but decreases to 0.25 mm during an erection, and a sudden increase in intracorporeal

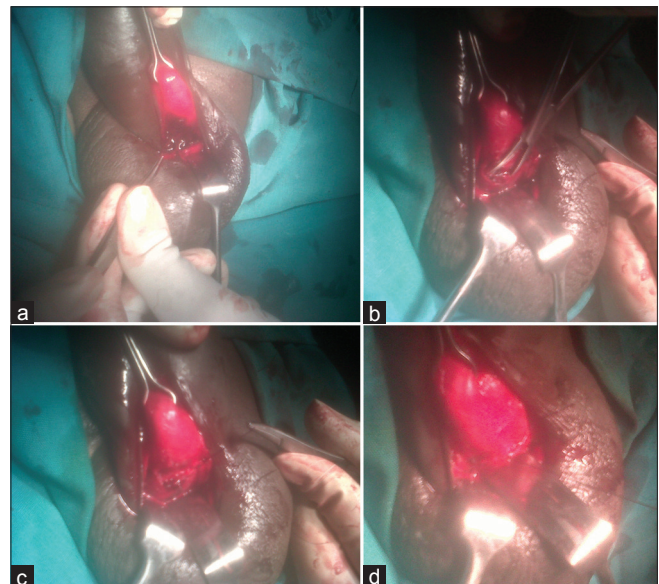


**Figure 1b:** Follow-up after two weeks showing wounds which had completely healed

pressure due to blunt trauma during an erection could easily result in rupture.<sup>[4]</sup> While all the cases of penile fracture reported have occurred on the penile shaft, there are no reports of fracture occurring in the crus of the cavernosum so far in the literature. The unusual circumstances in this case with the patient wearing a garment which was more susceptible to penile injury and riding a vehicle with a large gap between the tank and the seat where his erect penis got entangled, resulted in a tear at the crura and thus this rare injury occurred. Often, the laceration is unilateral though bilateral rupture accounts for 2--10% of cases.<sup>[5]</sup> Associated urethral injury is rare, with reported frequencies in the 9-20% range. Patients with bilateral corporeal rupture should be assumed to have urethral injury.<sup>[5]</sup> However, it was not the case in this instance which makes this particular case more unique.

Ibrahiem and colleagues published a series of 155 cases where normal erectile function in the absence of curvature or scarring was observed in 77% of patients.<sup>[3]</sup> All of them were treated with early surgery, as was done here too. A sub-coronal or circumferential is the best described surgical approach, allowing good visualization of all three corporeal compartments and allowing for exploration and repair of any concomitant urethral injury.<sup>[2,4]</sup> Other approaches described include penoscrotal, inguinoscrotal, lateral and suprapubic incisions.<sup>[5]</sup> In this case, a penoscrotal incision was more ideal considering the location of the rupture. The Doppler ultrasound played a pivotal role in localizing the injured area and in choosing the type of incision.

Imaging may be required, particularly in patients with an



**Figure 2:** Intraoperative pictures demonstrating the: (a) clots lying deep down at the crura of the penis. (b) one-cm transverse rupture of the crus of both corpora cavernosa. (c) defect being repaired with 3-0 vicryl suture on the crus of the left cavernosum. (d) defect being repaired with 3-0 vicryl suture on the crus of the right cavernosum

atypical clinical presentation or with severe local pain or swelling that prohibits a thorough physical examination of the penis. Various radiologic studies have been used for the diagnosis of penile fracture.<sup>[1]</sup> Ultrasonography can be used not only in the evaluation of patients with penile trauma but also to decide on the type of incision required which helps in avoiding unnecessary wastage of time. This case highlights the importance of early diagnosis with unusual presentation and early surgical repair for better outcome.

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