



## Isolated Ventral Urethral Tear Masquerading as Penile Fracture: A Rare Case of False Penile Fracture

<sup>1</sup>Ashutosh Kumar Tiwari, <sup>2</sup>Sneha Jha

<sup>1</sup>MCh Urology, Assistant Professor, <sup>2</sup>Assistant Professor,

<sup>1</sup>Department of Urology, <sup>2</sup>Department of Surgical Gastroenterology,  
AIIMS, Deoghar, India

**\*Corresponding Author:**

**Ashutosh Kumar Tiwari**

MCh Urology, Assistant Professor, Department of Urology, AIIMS, Deoghar, India

Type of Publication: Original Research Paper

Conflicts of Interest: Nil

### Abstract

Penile fracture is a well-recognized urological emergency resulting from rupture of the tunica albuginea of the corpus cavernosum, typically following blunt trauma to an erect penis. However, rare entities collectively termed “false penile fractures” may present with similar clinical and radiological features without actual tunical disruption. We report the case of a 32-year-old male who presented with classical features of penile fracture, including a snapping sound, immediate detumescence, penile swelling, and urethral bleeding following coital trauma. Penile ultrasonography suggested a defect in the tunica albuginea with associated hematoma. However, surgical exploration revealed intact corpora cavernosa and tunica albuginea, with an isolated ventral urethral tear. The urethral injury was repaired primarily with satisfactory functional recovery. This case highlights the diagnostic limitations of imaging modalities and underscores the importance of early surgical exploration in suspected penile fracture. Recognition of such atypical presentations is essential to prevent misdiagnosis and ensure appropriate management

**Keywords:** False penile fracture; Urethral injury; Penile trauma; Coital injury; Penile hematoma

### Introduction

Penile fracture is defined as a traumatic rupture of the tunica albuginea surrounding the corpus cavernosum, most commonly occurring during erection when the tunica is thinned and under high intracavernosal pressure. It is considered a urological emergency requiring prompt surgical intervention to prevent long-term complications such as erectile dysfunction, penile curvature, and urethral stricture formation [1,2]. The classical clinical presentation includes a sudden snapping or cracking sound, immediate detumescence, penile pain, and rapid development of swelling or hematoma, often described as the “eggplant deformity” [3]. While true penile fracture involves disruption of the tunica albuginea, a subset of patients may present with similar clinical findings without actual tunical injury. These cases are collectively

referred to as “false penile fractures” and are considerably less common. Among these, isolated urethral injuries without cavernosal rupture are particularly rare. Distinguishing true penile fracture from false penile fracture preoperatively can be challenging. The present report describes a rare case of isolated ventral urethral tear mimicking penile fracture, highlighting diagnostic pitfalls and emphasizing the importance of surgical exploration in equivocal cases.

### Case Report

A 32-year-old married male presented to the emergency department in the early hours of the morning with complaints of penile pain, swelling, and bleeding from the urethral meatus following sexual

intercourse. The patient reported that during intercourse in the woman-on-top position, his erect penis accidentally slipped out and struck against his partner's pubic bone. He immediately experienced a sharp pain accompanied by an audible "click" sound, followed by rapid detumescence. Shortly thereafter, he noticed progressive penile swelling and bleeding from the urethral meatus. He attempted to control the bleeding by compressing the glans but was unsuccessful and sought medical attention within an hour of the incident.

On examination, the patient was conscious, oriented, and hemodynamically stable. Abdominal examination was unremarkable. Local genital examination revealed a circumcised penis with diffuse swelling and mild ecchymosis over the shaft. There was oozing of blood from the urethral meatus. No obvious deformity or angulation of the penis was noted. Palpation did not reveal a definite defect in the tunica albuginea. The scrotum and perineum appeared normal, with no evidence of hematoma extension.

Based on the history and clinical findings, a provisional diagnosis of penile fracture with associated urethral injury was made. Routine hematological and biochemical investigations were within normal limits. Penile ultrasonography was performed, which demonstrated a localized hematoma measuring approximately  $25 \times 8$  mm and suggested a defect in the tunica albuginea of the left corpus cavernosum measuring around 12 mm. Given the strong clinical suspicion, the patient was taken up for urgent surgical exploration under spinal anesthesia. Initial cystourethroscopy revealed a significant intraluminal clot within the urethra. After irrigation, a tear was identified in the ventral wall of the urethra approximately 3 cm proximal to the external urethral meatus, measuring about 1.5 cm in length. The remainder of the urethra appeared normal. Subsequently, a circumcoronal degloving incision was made, and the penile shaft was explored. Contrary to the ultrasonographic findings, both corpora cavernosa and the tunica albuginea were found to be intact, with no evidence of rupture. A localized ventral hematoma was identified, corresponding to the site of the urethral injury. Careful dissection confirmed an isolated ventral urethral tear without involvement of the cavernosal bodies (Figure).

The urethral defect was repaired primarily using interrupted 4-0 polyglactin sutures over a 16 French Foley catheter. Hemostasis was achieved, and the penile layers, including Buck's fascia and skin, were closed in anatomical layers.

The patient was discharged on the third postoperative day with catheter in situ. The Foley catheter was removed after three weeks. Follow-up evaluation with uroflowmetry and urethrogram demonstrated a normal urethral caliber without evidence of stricture or contrast extravasation. At three-month follow-up, the patient reported normal voiding and erectile function, with no complications.

### Discussion

Penile fracture is an uncommon but well-documented urological emergency that typically presents with characteristic clinical features allowing prompt diagnosis and management. The pathophysiology involves rupture of the tunica albuginea due to a sudden rise in intracavernosal pressure during erection, often exceeding 1500 mmHg, which surpasses the tensile strength of the tunica [1,3]. Immediate surgical repair is widely accepted as the standard of care, as it significantly reduces the risk of long-term complications such as erectile dysfunction, penile curvature, and painful erections [2].

However, not all cases presenting with classical features of penile fracture involve actual disruption of the tunica albuginea. False penile fracture is a rare clinical entity in which similar symptoms arise from injury to other penile structures, including the dorsal vein, dorsal artery, Buck's fascia, corpus spongiosum, or urethra [4,5]. Among these, isolated urethral injuries without associated cavernosal rupture are particularly rare and may lead to diagnostic confusion. The present case is notable for the presence of all hallmark features of penile fracture, including an audible snapping sound, immediate detumescence, penile swelling, and urethral bleeding. Additionally, ultrasonography suggested a defect in the tunica albuginea, further reinforcing the diagnosis of true penile fracture. However, intraoperative findings revealed intact tunica and corpora cavernosa, with an isolated urethral tear, thereby confirming a false penile fracture. One of the key challenges in such cases is explaining the mechanism of sudden detumescence in the absence of tunical rupture. Several hypotheses have been proposed. Injury to the corpus spongiosum

and urethra may lead to rapid extravasation of blood, resulting in diversion of blood flow away from the corpora cavernosa and subsequent loss of erection [6]. Additionally, hematoma formation may impair the veno-occlusive mechanism essential for maintaining erection, leading to rapid detumescence [7]. Pain-induced sympathetic activation may also contribute by promoting contraction of cavernosal smooth muscle and facilitating venous outflow [8]. Furthermore, neurovascular reflex mechanisms and psychological factors such as anxiety and panic may exacerbate detumescence [9].

Imaging plays a supportive role in the diagnosis of penile trauma but has inherent limitations. Ultrasonography is widely used due to its accessibility and cost-effectiveness; however, it is highly operator-dependent and may yield false-positive findings, as demonstrated in the present case [10]. Hematomas or fascial disruptions may be misinterpreted as tunical defects, leading to overdiagnosis of penile fracture. MRI provides superior soft tissue contrast and can accurately delineate the integrity of penile structures, but its use is often limited in emergency settings due to availability and cost constraints [6].

Given these diagnostic uncertainties, early surgical exploration remains the gold standard in cases of suspected penile fracture. Exploration not only confirms the diagnosis but also allows for immediate repair of any identified injuries, thereby minimizing complications [2]. Conservative management has been associated with higher rates of adverse outcomes and is generally not recommended in cases with strong clinical suspicion.

Isolated urethral injuries require prompt recognition and appropriate management. Primary repair over a catheter is the preferred approach and is associated with good functional outcomes when performed early [11]. Delayed treatment may result in complications such as urethral stricture, fistula formation, or voiding dysfunction.

Several reports in the literature have documented cases of false penile fracture due to urethral injury. Feki et al. described a similar case where urethral rupture mimicked penile fracture, emphasizing the importance of surgical exploration [12]. Barros et al. reported a series of cases where patients with suspected penile fracture were found to have alternative pathologies, including urethral injury, on exploration [13]. These

studies highlight the diagnostic challenges and reinforce the need for a high index of suspicion.

Overall, this case underscores the importance of considering false penile fracture in the differential diagnosis of penile trauma. While clinical features and imaging findings may strongly suggest true fracture, definitive diagnosis often requires surgical exploration. Early intervention ensures accurate diagnosis and optimal management, thereby preventing long-term morbidity.

### Conclusion

False penile fracture due to isolated urethral injury is rare but clinically significant. It can closely mimic true penile fracture both clinically and radiologically. Early surgical exploration remains essential for accurate diagnosis and management, ensuring favorable functional outcomes and preventing long-term complications.

### Declarations

1. Acknowledgements: None.
2. Conflict of interest: The authors declare no conflicts of interest.
3. Funding: No funding was received for this study.
4. Ethical Statement: The authors are accountable for all aspects of the work. Written informed consent was obtained from the patient for publication of this case and images.
5. Consent for publication: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

### References

1. Barros R, Hampl D, Cavalcanti AG, Favorito LA, Koifman L. Lessons learned after 20 years' experience with penile fracture. *Int Braz J Urol.* 2020 May-Jun;46(3):409-416. doi: 10.1590/S1677-5538.IBJU.2019.0367. PMID: 32167705; PMCID: PMC7088490.
2. Amer T, Wilson R, Chlosta P, et al. Penile Fracture: A Meta-Analysis. *Urologia Internationalis.* 2016 ;96(3):315-329. DOI: 10.1159/000444884. PMID: 26953932.
3. Zargooshi J. Penile fracture in Kermanshah, Iran: report of 172 cases. *J Urol.* 2000 Aug;164(2):364-6. PMID: 10893586.

4. El Atat R, Sfaxi M, Benslama MR, Amine D, Ayed M, Mouelli SB, Chebil M, Zmerli S. Fracture of the penis: management and long-term results of surgical treatment. Experience in 300 cases. *J Trauma*. 2008 Jan;64(1):121-5. doi: 10.1097/TA.0b013e31803428b3. PMID: 18188109.
5. Ory J, Bailly G. Management of penile fracture. *Can Urol Assoc J*. 2019 Jun;13(6 Suppl4):S72-S74. doi: 10.5489/cuaj.5932. PMID: 31194931; PMCID: PMC6565403.
6. Eke N. Fracture of the penis. *Br J Surg*. 2002 May;89(5):555-65. doi: 10.1046/j.1365-2168.2002.02075.x. PMID: 11972544.
7. Mahapatra RS, Kundu AK, Pal DK. Penile Fracture: Our Experience in a Tertiary Care Hospital. *World J Mens Health*. 2015 Aug;33(2):95-102. doi: 10.5534/wjmh.2015.33.2.95. Epub 2015 Aug 19. PMID: 26331126; PMCID: PMC4550602.
8. Ateyah A, Mostafa T, Nasser TA, Shaeer O, Hadi AA, Al-Gabbar MA. Penile fracture: surgical repair and late effects on erectile function. *J Sex Med*. 2008 Jun;5(6):1496-502. doi: 10.1111/j.1743-6109.2007.00769.x. Epub 2008 Feb 4. PMID: 18266649.
9. Mydlo JH. Surgeon experience with penile fracture. *J Urol*. 2001;166(2):526-528. doi:10.1016/S0022-5347(05)65975-7.
10. Persaud S, Persaud M, & Naraynsingh V. (2019). Fracture of the Penis: A Review. *EMJ Urology*.
11. Morey AF, Dugi DD. Genital and lower urinary tract trauma. In: *Campbell-Walsh Urology*. 10th ed. Elsevier; 2012. DOI: [10.1016/B978-1-4160-6911-9.00088-8](https://doi.org/10.1016/B978-1-4160-6911-9.00088-8)
12. Feki W, Derouiche A, Belhaj K *et al*. False penile fracture: report of 16 cases. *Int J Impot Res* 19, 471-473 (2007). <https://doi.org/10.1038/sj.ijir.3901574>
13. Barros R, Ribeiro JGA, da Silva HAM, de Sá FR, Fosse AM Júnior, Favorito LA. Urethral injury in penile fracture: a narrative review. *Int Braz J Urol*. 2020 Mar-Apr;46(2):152-157. doi: 10.1590/S1677-5538.IBJU.2020.99.02. PMID: 31961620; PMCID: PMC7025847.

## Figure Legend

**Figure:** shows ventral urethral defect through which foley catheter can be seen and also without any involvement of the cavernosal bodies.

