



## FALSE PENILE FRACTURE: A REVIEW

## Medical Science

<b>Chirag Gupta</b>	Asst. Prof. Dept of Surgery JNU Hospital Jaipur
<b>Satish Jhuntra</b>	Consultant Sexual Medicine Vivan Hospital Jaipur
<b>Deepa Talreja</b>	Consultant Matratva Fertility And Andrology Clinic
<b>Nitish Jhuntraa</b>	Consultant Psychiatrist Vivan Hospital Jaipur

## ABSTRACT

**INTRODUCTION:** Penile fracture is an uncommon emergency condition usually occur due to trauma during sexual intercourse. Most cases are diagnosed by clinical findings, supportive investigation like sonography and MR imaging remains useful in indeterminate cases. Conditions mimicking penile fracture are extremely rare and have been seldom described.

**AIM:** To describe a patient with false penile fracture and discuss salient differential features from typical penile fracture and consider difference in management. To review the literature related to false penile fracture.

**METHODS:** PubMed and Cochrane databases were searched to identify four case series and 4 case reports evaluating clinical features and management outcomes of this rare condition.

**RESULTS AND CONCLUSION:** False penile fracture is a rare but well accepted condition. Clinical presentation is similar to penile fracture with vague differences. Imaging studies like sonography, MR and cavernosography have limitations of specificity and availability. Surgical exploration and hemostasis of the bleeding source with ligation is the main stay of management.

## KEYWORDS

False penile fracture; Penile injuries; Isolated penile vessel injury

## INTRODUCTION :

Penile injuries during sexual intercourse have diverse presentation. The clinical feature may range from mild ache not associated with any swelling to ecchymosis and penile oedema leading to eggplant deformity. The catastrophic event include classical triad of an audible cracking sound followed by immediate detumescence and pain is usually present. Classical penile fracture include tunica albuginea tear which is managed with surgical exploration and repair of tunical gap. Some conditions mimicking penile fracture are rare and have been seldom described. These include vascular penile injuries of penile trauma which may resemble true penile fracture but without the tunical tear. They include rupture of the penile superficial dorsal vein, [1] deep dorsal vein,[2] dorsal artery[3] and non-specific dartos bleeding.[4] We aimed to share our experience and review the literature in order to find salient clinical features of false penile fracture as well as key points in management of false penile fracture.

**Presentation of case:** A 23 year old male presented in emergency department with swelling and ecchymosis of the penis. He had history of sudden onset of pain during intercourse after his penis slipped out and angulated during intercourse. This event was followed by swelling and ecchymosis over shaft of penis (fig 1). He was unable to continue intercourse due to pain and gradual loss of erection. The swelling and ecchymosis gradually developed over the period of 30 mins. On further questioning they informed neither the patient nor his partner reported hearing a snapping or popping sound. He denied of any hematuria or difficulty of voiding. He has no history of bleeding disorder and he was not on any medication.

On examination, penis was bruised on the dorsal aspect with swelling and ecchymosis extending from base of the penis to coronal sulcus. Glans was barely visible due to uncircumcised status. No obvious tunica albuginea defect felt even on examination under anaesthesia. He underwent a penile duplex ultrasound which suggested evidence of a small breach in tunica albuginea at proximal shaft of penis with adjacent hematoma. His presentation, examination finding were not supporting his sonography findings. Due to contradictory findings and unusual presentation decision was made to explore the source of hematoma. Before shifting to operation room informed surgical consent was taken and surgical outcomes were discussed in detail. Permission for intraoperative photography was obtained.

Surgical exploration was possible after an interval of about 7 hours from injury under spinal anaesthesia. A subcoronal incision was made and subdartos dissection was performed. Most hematoma remain with penile shaft skin. On further dissection at the level of mid shaft a cord

like structure was found pointing and bleeding from the buck's layer, this cord like structure was then identified as deep dorsal vein. Further dissection was carried around the bleeding vessel and then ligated with 4-0 polyglactin suture. Gittes test performed and no tunical leak was found. So closure done in layers in an interrupted manner. His incision healed well, swelling subsided on subsequent follow up after 7 days. His sexual health inventory for men score was 22 after 2 month on follow up visit.

## METHOD:

A comprehensive search was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines using the PubMed and Cochrane databases from 2001 to 2021. The following keywords were used: 'Dorsal Vein Injury of the Penis', 'False Penile Fracture', 'penile hematoma', and the medical subject heading (MeSH) phrases 'Dorsal penile vascular tear[MeSH] were included. Papers were excluded if they did not deal with dorsal penile vessel injury in penile trauma cases, or lacked detailed description of the surgical findings or steps. Clinical presentation, management techniques and surgical steps were evaluated and discussed in detail.

## Result Literature Search

The search strategy identified 196 papers, of which 187 were excluded on the basis of title or abstract. Nine full texts were scrutinised. 1 paper was excluded for inadequate details on outcomes. The characteristics of the 8 papers, 4 case reports and 4 case series included in this review [3,5-11] (Fig. 3).

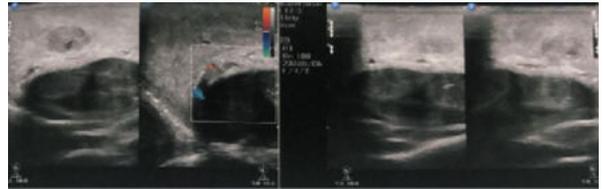
## DISCUSSION

Isolated penile vessel injury or false penile fracture result from penile injury during sexual intercourse. This include bleeding from soft tissue, due to injury to penile dorsal artery, deep dorsal vein, superficial dorsal vein, or nonspecific dartos bleeding [12] In erect penile position tunica albuginea stretches dorsal penile vessels. During coital injuries when penis bends down against the bony frame of female pelvis leads to further stretching of dorsal penile vessels causing them to tear, bleeding and thrombosis. Contrary to this if penis bends upwards or lateral leads to tunical tear causing penile fracture. On extensive literature review very few case series and case report are published on this topic. In a large study on isolated vascular injury in penile trauma, Bar-Yosef et.al. reported that in nine of the 17 penile injury related surgical procedures the tunica albuginea was intact and the only pathological finding was a ruptured dorsal vein.[5] In another large study by El-Assmy et.al. reported 17 patients with false penile fracture out of which 3 were treated conservatively and 14 were managed

surgically. Out of 14 cases in surgically treated patients, preoperative ultrasound was done in 6, and it was false positive for presence of tunical tear in 50% cases. Exploration revealed nonspecific dartos bleeding in 9 cases and avulsed superficial dorsal vein in 5. [7] Karadeniz et al. reported 2 cases of ruptured dorsal veins in a series of 21 (9.5%) patients.[13] Feki et al. reported 16 (5 % of total patient operated for penile fracture) patients with false penile fracture, and 10 cases had nonspecific dartos bleeding.. In six cases, an avulsed superficial dorsal vein was identified. Ecchymosis in the pubic and scrotal area found in single patient each [9]. Differential diagnosis of acute penis presenting due to blunt penile injury can be tear of the tunica albuginea, penile superficial dorsal vein, deep dorsal vein, dorsal artery and non- specific dartos bleeding. Various imaging modalities, such as cavernosography, sonography and magnetic resonance imaging, have been reported to facilitate the diagnosis. Cavernosography can diagnose cavernosal rupture but there is risk of infection, contrast reaction and cavernosal fibrosis, [14] even after this invasive investigation, it cannot confirm the diagnosis of false penile fracture because of the false negative risk.[13] Magnetic resonance imaging has shown some promise in depicting corpora cavernosal rupture and subdartos hematoma in small series, and thus it may even be accurate in false fracture.[15] But it is not yet widely available worldwide, and difficulties in performing MRI should not delay the treatment.[16] Ultrasonography can be helpful in localization of injury, but the accuracy of the results depends on the proficiency of the ultrasonographer [7] However, it can give false negative results when the tear is small [17].Clinical presentation of a cracking sound during intercourse with sudden penile pain, swelling and rapid detumescence are classical for penile fracture but rarely other entities of false penile fracture can mimic the classic presentation. Absence of cracking sound and a slow rather than rapid post-injury detumescence suggest dorsal vein rupture and nonspecific dartos bleeding. confinement of hematoma in the shaft do not differentiate between penile fracture and other mimicking diagnosis rather confinement to the shaft simply suggesting an injury below an intact Buck's fascia which can be a tunica albuginea tear with intact buck's fascia or injury to deep dorsal vessel injury. In case of superficial dorsal penile vessel injury hematoma may involve scrotum and/or pubic area.

Management of false penile fracture usually include surgical exploration and ligation of bleeding vessel. Conservative management risks many complications like abscess, infected hematoma, erection deformity and plaques. [18,19]. Contrary to the practice in penile fracture in which most tunical tear occur ventrally or laterally, a ventral vertical penoscrotal incision is usually preferred for direct exposure to the fracture, the distal circumcising incision will be an appropriate incision when false penile fracture is suspected because it provides exposure to dorsal vessels as well as lateral and ventral tunica albuginea. Surgical exploration, evacuation of hematoma, and ligation of the bleeding vessel lead to satisfactory results and preservation of erectile function in the majority of the patients with venous injury without any complications reported at this time. In the end artificial erection must be performed to rule out any minor tunical tear. Conclusion False penile fracture though a rare entity needs special attention in terms of surgical exploration to avoid complications. Due to absence of precise diagnostic features subtle clues in history, clinical examination and imaging like absence of a snapping or popping sound, gradual detumescence, absence of palpable defect and no tunical tear on sonography should be considered diagnostic.

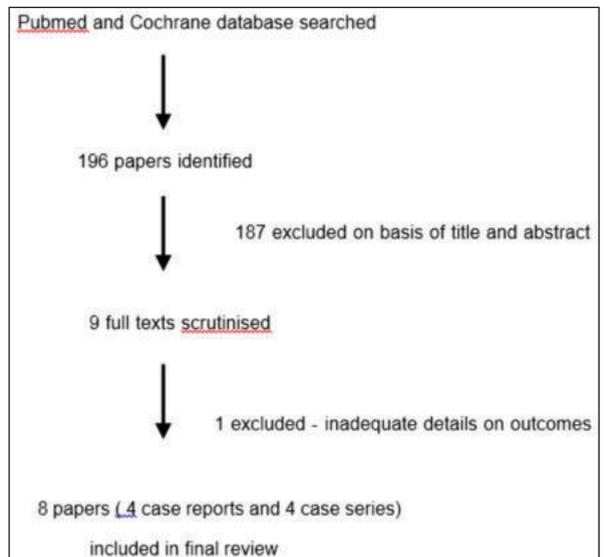
**Fig 1 : Penile Swelling And Ecchymosis At Presentation (with Povidone-iodine Solution Staining)**



**Fig 2 : Penile Ultrasound With Doppler.**



**Fig.3 Degloved Penis Shows Haematoma**



**Fig.4 Prisma Flow Chart Of Literature Search**

**REFERENCES :**

- Koifman L, Barros R, Júnior RA, Cavalcanti AG, Favorito LA. Penile fracture: Diagnosis, treatment and outcomes of 150 patients. *Urology* 2010;76:1488-92.
- Polo HE, Garrigós MJ, Ruiz PM, Tendero TP, Marcos SM. Penile hematoma caused by deep dorsal vein rupture during intercourse. *Arch Esp Urol* 2000;53:473-5.
- Armenakas NA, Hochberg DA, Fracchia JA. Traumatic avulsion of the dorsal penile artery mimicking a penile fracture. *J Urol* 2001;166:619.
- Shah DK, Paul EM, Meyersfeld SA, Schoor RA. False fracture of the penis. *Urology* 2003;61:1259
- Bar-Yosef Y, Greenstein A, Beri A, Lidawi G, Matzkin H, Chen J. Dorsal vein injuries observed during penile exploration for suspected penile fracture. *J Sex Med.* 2007 Jul;4(4 Pt 2):1142-6. doi: 10.1111/j.1743-6109.2006.00347.x. Epub 2006 Nov 1. PMID: 17081217.
- Eken A, Acil M, Arpaci T. Isolated rupture of the superficial vein of the penis. *Can Urol Assoc J.* 2014 May;8(5-6):E371-3. doi: 10.5489/cuaj.1712. PMID: 24940469; PMCID: PMC4039606.
- El-Assmy A, El-Tholoth HS, Abou-El-Ghar ME, Mohsen T, Ibrahim el HI. False penile fracture: value of different diagnostic approaches and long-term outcome of conservative and surgical management. *Urology.* 2010 Jun;75(6):1353-6. doi: 10.1016/j.urology.2009.11.086. Epub 2010 Mar 29. PMID: 20350760.
- Kurkar A, Elderwy AA, Orabi H. False fracture of the penis: Different pathology but similar clinical presentation and management. *Urol Ann.* 2014;6(1):23-26. doi:10.4103/0974-7796.127015
- Feki W, Derouiche A, Belhaj K, Ouni A, Ben Mouelhi S, Ben Slama MR, Ayed M, Chebil M. False penile fracture: report of 16 cases. *Int J Impot Res.* 2007 Sep-Oct;19(5):471-3. doi: 10.1038/sj.ijir.3901574. Epub 2007 Jun 7. PMID: 17554393.
- Ettaouil M, Waffar C, Mouldige H, Dakir M, Debbagh A, Aboutaieb R. Isolated rupture

- of the superficial dorsal vein of the penis during intercourse: A rare cause of false penile fracture. *Urol Case Rep.* 2021;39:101761. Published 2021 Jun 25. doi: 10.1016/j.eucr.2021.101761
11. Rafiei A, Hakky TS, Martinez D, Parker J, Carrion R. Superficial dorsal vein injury/thrombosis presenting as false penile fracture requiring dorsal venous ligation. *Sex Med.* 2014 Dec;2(4):182-5. doi: 10.1002/sm2.47. PMID: 25548650; PMCID: PMC4272250.
  12. Nehru-Babu M, Hendry D, Ai-Saffar N. Rupture of the dorsal vein mimicking fracture of the penis. *BJU Int* 1999;84:179–80.
  13. Karadeniz T, Topsakal M, Ariman A, Erton H, Basak D. Penile fracture: differential diagnosis, management and outcome. *Br J Urol.* 1996 Feb;77(2):279-81. doi: 10.1046/j.1464-410x.1996.86420.x. PMID: 8800899.
  14. Beysel M, Tekin A, Gurdal M, Yucebas E, Sengor F. Evaluation and treatment of penile fractures: accuracy of clinical diagnosis and the value of corpus cavernosography. *Urology* 2002; 60: 492–496
  15. Uder M, Gohl D, Takahashi M, Derouet H, Defreyne L, Kramann B et al. MRI of penile fracture: diagnosis and therapeutic follow-up. *Eur Radiol* 2002; 12: 113–120.
  16. Abolyosr A, Moneim AE, Abdelatif AM, Abdalla MA, Imam HM. The management of penile fracture based on clinical and magnetic resonance imaging findings. *Br J Urol* 2005; 96: 373–377.
  17. Koga S, Saito Y, Arakaki Y, Nakamura N, Matsuoka M, Saita H, Yoshikawa M, Ohyama C. Sonography in fracture of the penis. *Br J Urol* 1993;72:228–9.
  18. Nicolaisen GS, Melamud A, Williams RD, McAninch JW. Rupture of the corpus cavernosum: surgical management. *J Urol* 1983; 130: 917–919.
  19. Muentener M, Suter S, Hauri D, Sulser T. Long-term experience with surgical and conservative treatment of penile fracture. *J Urol* 2004; 172: 576–579.