# Penile Fracture - Our Initial Experience and Outcome

Fayaz Ahmad Najar[1], Peer Hilal Ahmad Makhdoomi[2], Tajamul Rashid[3]

[1, 2] Department of Surgery, Government Medical College, Srinagar, Jammu & Kashmir, India.
[3]Department of Surgery, Hamdard Institute of Medical Sciences & Research, New Delhi, India.

**ABSTRACT**

**BACKGROUND**

Penile fractures occur when the engorged penile corpora are forced to buckle and "pop" under the pressure of a blunt sexual trauma, due to slippage of the penis out of the vagina during intercourse. Patients typically describe that a "plop" sound was followed by immediate de-tumescence, severe pain, and swelling, called as "egg-plant" deformity, as a result of the injury. The immediate surgical exploration with evacuation of the haematoma and repair of tunica albuginea defect is the ideal treatment.

**METHODS**

Over a period of more than 3 years between May 2015 and January 2019 we have treated 26 patients with penile fractures. All of them presented within 24 hours after sustaining the injury. None had associated urethral injury. Apart from clinical examination and history the investigation most commonly used by us to aid diagnosis was Ultrasound (USG) and colour doppler which helped in identifying the site and size of the defect as well as the blood collections. All were treated by surgical exploration.

**RESULTS**

Patients were discharged either on 2nd or 3rd post-operative day. None of our patients developed any postoperative wound infection. Post-operative hematoma developed in 01 patient. 01 patient had complaints of slight bend of the penis to the affected side but with no sexual problem. There was no history of erectile dysfunction in any of these patients.

**CONCLUSIONS**

To diagnose penile fracture, our study relied on history and physical examination mainly and did not recommend imaging, except for, in patients with possible urethral injuries. Immediate surgical intervention can make good functional results and surgical exploration can be considered in all cases of penile fractures. The procedure is simple with minimal morbidity, low morbidity and short hospital stay.

**KEYWORDS**

Fracture, Corpora, Tear

*Corresponding Author:*
*Dr. Tajamul Rashid,*
*Flat No. 204, D Block,*
*Jamia Hamdard,*
*New Delhi, India.*
*E-mail: doc.tajamul@gmail.com*

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## BACKGROUND

Penile fracture is an important urological emergency resulting from a tear in the tunica albuginea of the penis often due to forceful manipulation, vigorous vaginal or anal intercourse or masturbation, gunshot wounds, or any other mechanical trauma that causes forcible bending of an erect penis. Less common aetiologies include turning over in bed, a direct blow, forced bending, or hastily removing or applying clothing when the penis is erect.[1] Most commonly, it involves one of the corpora cavernosa, but may also affect the both corpora-cavernous, corpus spongiosum or the urethra.[2] During erection, the thickness of the tunica albuginea decreases from 2 mm in the flaccid state to 0.25 – 0.5 mm. "The harder the penis is, the more vulnerable it is to injury". Therefore, penis is more vulnerable to traumatic injury.[3] The most common mechanism of injury is when the penis slips out of the vagina and strikes against the symphysis pubis or perineum. In some reports sixty per cent of cases occur during consensual intercourse[4] and is more likely when the partner is on top.[5] Fracture is normally manifested by a cracking sound accompanied by immediate severe pain and detumescence, followed by rapid swelling and widespread ecchymosis.[6] A palpable tunical defect and a haematoma with a "rolling sign" are pathognomonic features.[7] All recent reports favour early surgical repair due to the adequate functional and cosmetic results with minimal complications and this is in contrast to old reports favouring conservative management.[8] This is because conservative treatment is associated with very high complication rates reaching as high as 53 % of patients.[9] The timing of repair, from the time of injury, has never been well defined, although most series indicate that repair is needed as soon as the patient presents; but unfortunately due to the social and personal scenario surrounding the occurrence of these events some men may delay seeking medical help immediately[10] and there are very few reports available on the results of delayed repair of penile fracture. We have evaluated our own experience with 16 patients of penile fractures, all of them received immediate treatment within 24 hours of injury.

## METHODS

This is a case series conducted over a period of more than 3 years between May 2015 and January 2019. 26 patients with penile fractures were treated in the emergency department during the above-mentioned period. All of them presented immediately to us within 24 hours after sustaining the penile injury. None of our patients had associated urethral injury. Apart from careful clinical examination and history the investigation most commonly used by us to aid diagnosis was Ultrasound (USG) and Colour Doppler. They helped in identifying the site and size of the defects in tunica albuginea as well as the blood collections.

All were treated by surgical exploration because of the presence of significant haematoma and deformity. The repair was done with subcoronal circumferential de-gloving incision (Figure 1) followed by evacuation of haematoma and repair of the laceration using 3 - 0 vicryl suture material with interrupted, inverting knots. Watertight closure was confirmed at the end of repair by artificial induction of erection by heparinized saline injection. The skin was approximated using 3 - 0 catgut. The patients were discharged either on second or third postoperative day and all patients asked to refrain from any sexual activity for 8 weeks to 10 weeks on discharge from hospital. The follow up period ranged from 8 weeks to 3 years during which the history was taken regarding erectile activity, pain, sexual performance, presence of nodule / plaque and angulation followed by physical examination of the penis.

***Figure 1. Subcoronal Degloving Incision***

## RESULTS

***Figure 2. Tear / Rent in Tunica***

All our patients underwent repair immediately within 24 hours after sustaining penile injury which we considered as early repair. So, the dissection in these patients was not difficult. The tear size ranged from 1.0 x 0.5 cm to 2.0 x 1.5 cm (Figure 2). Patients were discharged either on 2nd or 3rd post-operative day. Twenty-three patients were discharged on 2nd postoperative day and rest 3 patients on 3rd postoperative days. None of our patients developed any postoperative wound infection. However, post-operative haematoma developed in 1 patient near sub-coronal suture line and was managed conservatively. In the follow-up period, 1 patient had complaints of slight bend of the penis to the affected side but with no sexual problem. On artificial induction of erection in this patient there was only minimal deviation of the penis to the side of repair without any chordee. There was no history of erectile dysfunction in any of these patients until now and all are enjoying and living normal psychosocial and sexual life.

## DISCUSSION

Penile fracture, even though uncommon, is an important urologic emergency that may have devastating physical and psychological consequences. The prompt diagnosis and ex-pedient surgical correction of the condition gives excellent results. Most surgeons do not have much exposure of this condition because of its rare occurrence. Due to the obvious embarrassment associated with such injuries the patients may hesitate to disclose their condition thus delaying the medical treatment. Cummings et al reported that a delay of 24 - 48 h does not adversely impact the postoperative functioning of the penis.[10] Penile fracture is the disruption of the tunica albuginea with rupture of the corpus cavernosum. This commonly occurs during vigorous sexual intercourse, slippage of penis out of vagina and it is hitting the perineum or pubic bone, causing the injury. Tunica albuginea is a bilayered structure, the outer longitudinal and the inner circular layers, which varies in different locations along the shaft and is thinnest ventro-laterally.[11] Tunica albuginea resists rupture until intra-cavernous pressures rise to more than 1500 mm Hg.[11] Mydlo reported that 94 % of fractures in Philadelphia, Pennsylvania, were a result of sexual intercourse; Zargooshi described 69 % of fractures in Kermanshah, Iran, as being due to self-manipulatio.[11]

The classical pathological pattern of injury to the erect penis is usually a transverse tunical rupture of one corporal body, but the involvement of both corpora, corpus spongiosum and urethra can occur.[8,12] Small injuries to the tunica albuginea that go unrecognised may result in Peyronie's disease and / or impotence.[12] However, recent reports suggest that penile fracture is not associated with an increased risk of erectile dysfunction.[13,14]

Penile fracture usually has tunica albuginea tear but it may be associated with urethral tear. The urethral injury incidence is higher in the United States and Europe (20 %) than in Asia, the Middle East, and the Mediterranean region (3 %).[11] The diagnosis of penile fracture usually is made by simple clinical history and examination but some radiological investigations like USG, Colour Doppler, MRI (Magnetic Resonance Imaging), angiography and urethrography are helpful. Immediate surgical correction of the tunical defect is recommended which not only decreases the length of hospital stay but also allows early resumption of sexual activity[13,14], minimizes the risk of complications like fibrous tissue formation, chordee, painful erection and other psychosocial problems.[14] But due to various reasons patient may present to us after days of sustaining penile fracture. There is no clear description of what delayed repair is. Even though Cummings et al[10] have described delayed repair defined as more than 8 hours after injury, we have considered a delay of more than 24 hours as delayed repair. Emergency surgical exploration with evacuation of haematoma and repair of tunica albuginea tear is treatment of choice. Generally patient responds well with minimal complications. We studied 26 case of penile fracture in whom the mode of injury was sexual intercourse. All presented to the surgical emergency within 24 hours of injury and were managed by emergency exploration with debridement and repair of tunica albuginea with vicryl 3 - 0 round body suture. We have used subcoronal circumferential degloving incision for all patients. The average size of the tunica albuginea lacerations was 1.5 x 1.0 cm. Such large tears are also noted by Cummings et al (1.5, 2 and 3 cm), Cendron et al' (2, 3 and 3 x 2 cm) and Kundu et al" (1 - 2.5 cm). In all likelihood, this much large defects would have healed with a significant scarring if treated conservatively leading to development of chordee. The wide separation of the transversely torn edges of tunica albuginea is probably due to the retraction of the longitudinally arranged elastic fibres in it. The presence of haematoma may add to the local fibrous reaction. So, the evacuation of haematoma and approximation of torn edges of the tunica albuginea resulted in excellent outcome than the expected outcome of conservatively managed patients. Postoperatively patients responded well and kept under antibiotic and analgesics; sedative for prevention of penile erection were also prescribed to all patients. Erectile function usually returned after 15 days of surgery.[11]

All of our patients were in the age group ranging from 25 - 42 years: a period of maximum sexual activity. Surgical correction in these patients provided us with a shorter period of hospital stay, early resumption of work and sexual activities and thus less psychological trauma.

## CONCLUSIONS

To diagnose penile fracture, majority of reviewed studies and also our study relied on history and physical examination mainly and did not recommend imaging, except for, in patients with possible urethral injuries. We also concluded that immediate surgical intervention could make good functional results and surgical exploration can be considered in all cases of penile fracture to evacuate hematoma and repair tunica albuginea to minimize the subsequent scarring process that could ultimately lead to penile deformity. The

procedure is simple with minimal morbidity with low morbidity and short hospital stay.

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