

# Penile fracture: presentation, management and erectile function following surgical repair

Vig M<sup>1</sup>, Vig V<sup>2</sup>, Suchak S<sup>3</sup>

<sup>1</sup>Dr Mukta Vig  
Assistant Professor, Surgery  
muktavig@gmail.com

<sup>2</sup>Dr Vishal Vig  
Assistant Professor, Urology  
9872882838

docvishalvig@yahoo.co.in

<sup>3</sup>Dr Suraj Suchak  
Consultant, Suchak Hospital  
Malad Mumbai  
surajsuchak@gmail.com

<sup>1,2</sup>Punjab Institute of Medical Sciences  
Jalandhar, Punjab, India

Received: 04-12-2016

Revised: 08-01-2016

Accepted: 18-01-2016

Correspondence to:

Dr Vishal Vig  
9872882838  
docvishalvig@yahoo.co.in

## ABSTRACT

**Background:** Penile fracture is a relatively uncommon condition that is defined as the rupture of the corpus cavernosum and or the corpus spongiosum caused by blunt trauma to the erect penis.

**Objective:** To evaluate the clinical presentation, therapeutic options and outcome of the treatment of penile fracture.

**Materials and methods:** We evaluated the results of 11 patients of penile fracture. All patients underwent immediate exploration and primary repair of the tear in tunica albuginea. Degree of Erectile dysfunction was assessed by IIEF-5.

**Results:** Eleven patients with median age of 35.1 years (range, 19-54 years) presented with fracture of the penis. Patient history and clinical examination were highly sensitive and accurate in predicting a tunical tear. The mode of injury was vigorous sexual intercourse in 4(36.4%) cases, self inflicted in 3(27.1%) cases, accidental trauma to erect penis in 3 (27.1%) cases and rolling over in bed in 1(9.1%) case. The median time from injury to presentation was 10 hours (range 4-360 hours). Associated urethral injury was seen in 2 (18.2%) cases. The mean hospital stay was 3 days. 7 (87.5%) out of 8 patients available for follow-up reported, achieving adequate erection for intercourse without erectile or voiding dysfunction. The patient who presented late at 15 days had significant erectile dysfunction.

**Conclusion:** History and clinical examination are sufficient to diagnose fracture penis further evaluation is not necessary in most cases for managing patients with suspected penile fracture. Early surgical repair is associated with a good outcome with preservation of both sexual and voiding functions.

**Keywords:** Penis, wounds, injuries, fractures, genitalia, male

## Introduction

Penile fracture is one of the not-so-common urological emergencies. The first documented report of this fracture is credited to an Arab physician, Abul Kasem, in Cordoba over 1000 years ago. The injury consists of rupture of the tunica albuginea of one or both corpora cavernosa in an erect penis. The corpus spongiosum and urethra may also be involved. True incidence is probably higher than reported as many patients do not seek medical attention due to embarrassment/fear. [1, 2] The reported mechanisms precipitating the fracture are sexual intercourse, masturbation, or forceful penile manipulation. Patient history and clinical presentation are usually highly diagnostic. Patients

characteristically hear a sharp, cracking sound that is followed by rapid detumescence, swelling and deformation of the penis. As long as Buck's fascia remains intact the hematoma is confined to the penis, and patients commonly present with marked discoloration and deformation of the penis. Pain is a variable sign. Sometimes corpus spongiosum and urethral injury are seen as adjacent injuries. It was reported that adjacent urethral injury is seen in 10%-33% of penile fractures, and when present, gross hematuria or urethrorrhagia with voiding difficulty are additional clinical findings. [2]

The use of imaging techniques in the evaluation of blunt penile trauma remains controversial. [2] However, many

authors agree that the diagnosis of penile fracture can rely on patient history and clinical findings alone. [1,3,4] Ultrasonography can be used to confirm the diagnosis. Retrograde urethrography is necessary for the diagnosis of urethral injury. Immediate surgical exploration, evacuation of hematoma, control of bleeders, and repair of the tunical tear is the present trend in management. [1,2] Conservative therapy restricted to uncomplicated cases also has a good outcome. [4,5]

We present our experience with surgical treatment of penile fractures with special emphasis on postoperative erectile function.

### Materials and methods

All cases of penile fracture that presented to our hospital between January 2007 to April 2011 were evaluated. The etiological factors, elapsed time from trauma to presentation, size and location of penile hematomas, penile deviation, urethrorrhagia, and the location and size of ruptures were recorded. When the patient history and physical examination were insufficient for diagnosing penile fracture, the diagnosis was confirmed by ultrasonography. In patients with microscopic or gross hematuria with or without urethrorrhagia retrograde urethrography was performed to confirm urethral injury. Every patient underwent surgery under spinal anesthesia; exploration of the fracture site was carried out by a degloving subcoronal incision. The hematoma was evacuated and any bleeding vessels were ligated and the site of tunical defect located, measured, and then repaired by using synthetic, absorbable, inverted knot sutures and details of the site of tunical defect, its size, and laterality were recorded along with any associated urethral injuries. Intraoperative artificial

erections were routinely induced after the repair to assess for remaining leakage. Postoperative complications were dually noted. Follow up was done at 3 and 6 months postoperatively to confirm the presence or absence of penile deformity and degree of Erectile dysfunction was assessed by International Index of Erectile Function (5 point version)(IIEF-5). A score of 20 or higher indicates a normal degree of erectile functioning. Low score (10 or less) indicates moderate to severe ED.

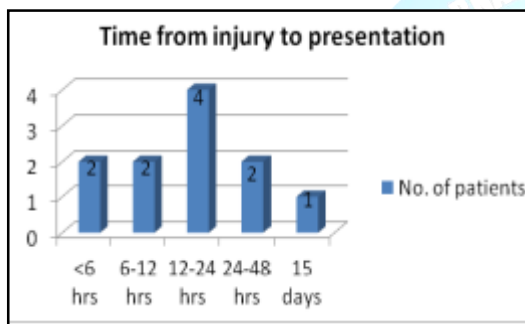
### Results

The analysis revealed that 11 cases of fracture penis occurred over a period of 4 years. Mean patient age at injury was 35.1 years with a range of 13 to 60 years. 9 patients were from urban area, 2 from rural area. Patient history and clinical examination were highly sensitive and accurate in predicting a tunical tear. In four of these patients, the common precipitating cause for fracture was vigorous sexual intercourse (36.4%) followed next by masturbation 3 (27.1%). One patient had forceful flexion of the erect penis while rolling over in bed. 3 of these patients reported fracture caused by direct blunt trauma to an erect penis by a heavy object. (Table.1) The characteristic click or crackle was present in 72% (8/11) of our patients. This was followed by detumescence and swelling. The most common clinical findings were hematoma with deviation 81% (9/11) and only hematoma at the site of fracture in 19% (2/11). Clinical findings were enough to diagnose and decide on management in the majority of our cases. Ultrasonography was done in 4 cases when we had doubt and could identify tunical tears in 3 cases. Urethrogram and cystoscopy was warranted in 2 of our cases as they had associated urethral bleeding. The median time from injury to presentation was 10 hours (range: 4-360

hours). Most (8/11) presented within 24 hours. (Fig.1) 10 patients presented within 48 hrs of injury where as one patient presented as late as 15 days after injury and also had deformity of the penis. (Fig.2)

**Table: 1 Mode of injury**

Mode of injury	No. of patients (%)
Vigorous sexual intercourse	4 (36.4%)
Self inflicted	3 (27.1%)
Accidental trauma to erect penis	3 (27.1%)
Rolling over in bed	1 (9.1%)



**Fig. 1 Time from injury to presentation**



**Fig. 2 Egg plant deformity of fracture penis**



**Fig. 3 Complete repair of tunica albuginea**

Every patient underwent surgery under spinal anesthesia; exploration of the fracture site was carried out by a degloving subcoronal incision. The hematoma was evacuated and any bleeding vessels were ligated and the site of tunical defect located, measured, and then repaired by using synthetic, absorbable, inverted knot sutures (fig 3). In patients with adjacent urethral injury, the urethra was repaired with 4/0 interrupted Vicryl sutures. No drainage was necessary in any of the cases. All catheters placed preoperatively were removed the following day, except in 2 patients with urethral injury, in which case the catheter was removed 3 weeks postoperatively after performing pericatheter urethrography to determine patency of the urethra. Of the cases (Table 2) that underwent surgical exploration, we noticed that 54.5% were having right corporal involvement and the frequent site of tear was in the midshaft. The next common site was the proximal shaft. The mean defect size was 1.3 cm (range 0.8–2.7). Two (19.1%) of our patients had a tear dorsally, involving both the corpora. All these tunical tears were transverse. The mean hospital stay was three days. No early postoperative complications were seen in any of the patients.

**Table 2: Corporal and urethral involvement**

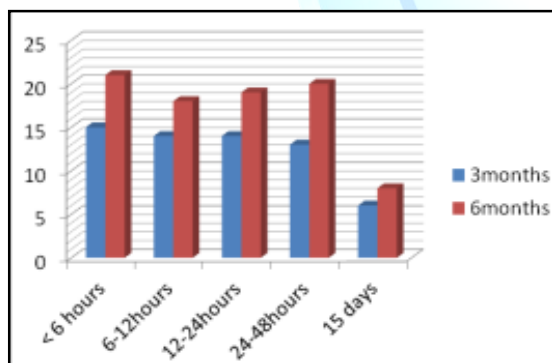
Findings	No. of patients (%)
Tunical tear	11 (100)
Unilateral	9 (80.9)
Right corpus	6 (54.5)
Left corpus	3 (27.2)
Bilateral	2 (19.1)
Urethral injury	2 (16.66)

Eight patients were available for follow up. Seven (87.5%) of these patients reported achieving adequate erection for

intercourse without erectile or voiding dysfunction. The patient who presented late at 15 days had erectile dysfunction. Total Average IIEF 5 Score at 3 months was 12.75, but 13.71 if delayed injury is excluded. At 6months it was 18.12, but 19.57 if delayed injury is excluded (Fig.4) [Table 3]. Patients with urethral injury had no post-op urinary symptoms (Qmax-32 ml/sec in one patient and 25 ml/sec in the other patient at 6 months)

**Table 3 IIEF score at 3 and 6 months**

Time	No.	IIEF 3 months	IIEF 6 months
<6Hr	2	14, 15	22, 20
6-12	2	13, 15	18, 19
12-24	2	12, 14	18, 20
24-48	1	13	20
15 days	1	6	8
<b>Average</b>		<b>12.75</b>	<b>18.12</b>



**Fig. 4 IIEF 5 Score**

**Discussion**

Fracture of the penis occurs in an erect penis and is primarily rupture of the corpus cavernosum. 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] In Middle East countries, a common cause of penile fracture is self-inflicted injury. [2] This is a practice termed

taghaandan and occurs when the erect penis is bent or struck to achieve rapid detumescence. [1] In our study the most common cause was sexual intercourse followed by masturbation and fall on erect penis. Because fear and embarrassment are commonly associated; the patient's presentation to the health care professionals is sometimes significantly delayed. In one of our case who presented after 15 days, first the patient did not give any significant history probably due to embarrassment. After our explanation of the disease and necessity of surgical treatment he accepted the history but he did not want to tell the details.

The diagnosis of penile fracture was predicted from the history and physical examination in all our patients. Some investigators have recommended the use of ultrasound, cavernosography and magnetic resonance imaging to locate the site of the tunical tear before surgery. [3,4,5] In our study patient history and clinical examination were highly sensitive and accurate in predicting a cavernosal tear and radiological investigations did not influence patient management in any of the cases, this correlates well with other studies. [6-11] The only important imaging study is a retrograde urethrogram, which should be selectively performed to identify a concomitant urethral tear that occurs in approximately in 10-22% of reported cases. [6,9] such patients present with blood at the urethral meatus, haematuria or urinary retention. Two of our patients had concomitant urethral tears which were managed intraoperatively. Till followup none of these patients had any urinary symptoms. The management of penile fracture has previously been controversial because early reports favoured a nonoperative approach. This included application of cold compresses, anti-inflammatory agents, instructions to abstain from sexual

intercourse, and suppression of erections with antiandrogens.<sup>[9,11]</sup> However, long term outcomes of conservative management demonstrated significant complication rates, such as curved or painful erections, erectile dysfunction, arteriovenous fistula formation, infection and plaque formation.<sup>[1,3,9]</sup> Suspected penile fractures should be promptly explored and surgically repaired. Immediate surgical reconstruction results in faster recovery, decreased morbidity, lower complication rates, and lower incidence of long term penile curvature.<sup>[10]</sup> All the patients in this series underwent immediate surgical repair to avoid the potential complications of conservative management. Several incisions to approach the fracture site have been described including a circumcising degloving incision, midline peno-scrotal, inguino-scrotal, and lateral incision.<sup>[4,11,12]</sup> A degloving circumcising incision was used in all the cases because it allows excellent exposure of the whole penis and penile urethra. The preponderance of right corporal fractures that has been reported by other authors is also consistent in this study (54.5%).<sup>[4,11,13]</sup>

A routine Foleys catheter was inserted in all our cases postoperatively which helped to hinder erection. The hospital stay ranged to an average of 3 days, which is comparable to other studies.<sup>[5,7,10]</sup> In our study seven (87.5%) of these patients reported achieving adequate erection for intercourse without erectile or voiding dysfunction. The patient who presented late at 15 days had erectile dysfunction and also had deformity of the penis. Thus immediate intervention was associated with shorter duration of hospital stay, higher levels of patient satisfaction, and improved outcomes including reduced incidence of erectile dysfunction. History and clinical

examination are sufficient to diagnose fracture penis further evaluation is not necessary in most cases for managing patients with suspected penile fracture. Early surgical repair is associated with a good outcome with preservation of both sexual and voiding functions.

## References

1. Orvis BR, McAninch JW. Penile rupture. *Urol Clin North Am* 1989;16:369-75.
2. Eke N. Fracture of the penis. *Br J Surg* 2002;89:555-65.
3. Asgari MA, Hosseini SY, Safarinejad MR, Samadzadeh B, Bardideh AR. Penile fractures: evaluation, therapeutic approaches and long-term results. *J Urol* 1996 Jan;155(1):148-9.
4. El-Assmy A, el-Tholoth HS, Mohsen T, Ibrahiem el-HI. Does timing of presentation of penile fracture affect outcome of surgical intervention? *Urology* 2011 Jun;77(6):1388-91.
5. El-Assmy A, El-Tholoth HS, Abou-El-Ghar ME, Mohsen T, Ibrahiem EH. Risk factors of erectile dysfunction and penile vascular changes after surgical repair of penile fracture *Int J Impot Res* 2012 Jan-Feb;24(1):20-5.
6. Zargooshi J. Penile fracture in Kermanshah, Iran: the long-term results of surgical treatment *Br J Urol Int* 2002;89:890-5.
7. Kalash SS, Young JD Jr. Fracture of penis: controversy of surgical versus conservative treatment. *Urology* 1984;24:21-5.
8. El Atat R, Sfaxi M, Benslama MR, Amine D, Ayed M, Mouelli SB, et al. Fracture of the penis: management and long-term results of surgical treatment. Experience in 300 cases. *J Trauma* 2008 Jan;64(1):121-5.
9. Ibrahiem el-HI, el-Tholoth HS, Mohsen T, Hekal IA, el-Assmy A. Penile fracture: long-term outcome of

- immediate surgical intervention. Urology 2010 Jan;75(1):108-11.
10. Agarwal MM, Singh SK, Sharma DK, Ranjan P, Kumar S, Chandramohan V, et al. Fracture of the penis: a radiological or clinical diagnosis? A case series and literature review. Can J Urol 2009 Apr;16(2):4568-75.
  11. Ghilan AM, Al-Asbahi WA, Ghafour MA, Alwan MA, Al-Khanbashi OM Management of penile fractures. Saudi Med J 2008 Oct;29(10):1443-7.
  12. Aman Z, Qayyum A, Khan M, Afridi V. Early surgical intervention in penile fracture. JPGMI 2004;18(3):432-8.
  13. Beysel M, Tekin A, Gurdal M. Evaluation and treatment of penile fractures: accuracy of clinical diagnosis and the value of corpus cavernosography. Urology 2002;60:492-6.

Cite this article as: Vig M, Vig V, Suchak S. Penile fracture: presentation, management and erectile function following surgical repair. Int J Med and Dent Sci 2016;5(2):1192-1197.

Source of Support: Nil  
Conflict of Interest: No

