International Surgery Journal
Dar HM et al. Int Surg J. 2018 Feb;5(2):553-556
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20180350

Original Research Article

Penile fracture; three years' experience from a tertiary care centre

Hanief Mohamed Dar, Tariq Ahmed Mala*, Yaqoob Hassan, Shahid Amin Malla, Mir Mujtaba Ahmad, Varun Dogra

Department of Surgery, GMC, Srinagar, Jammu and Kashmir, India

Received: 21 November 2017
Accepted: 27 December 2017

***Correspondence:**
Dr. Tariq Ahmed Mala,
E-mail: drtariq_6481mala@rediffmail.com

ABSTRACT

Background: To study cause, presentation, diagnosis and early management of penile fracture and to prevent the complications.
Methods: In this study 48 patients of penile fracture were included in the study who were admitted in general surgery department at Government Medical College Srinagar from May 2007 to May 2010. All patients were evaluated with detailed history, clinical examination and baseline investigations followed by immediate surgical repair.
Results: Age range of patients was 21-75 years. Youngest being 21 years and eldest being 75 years (median-30 years). 38(79.1%) patients were married while as 10(20.9%) patients were unmarried. Sexual intercourse was main cause, seen in 41(85.4%) of patients, aggressive masturbation in 5(10.4%) patients and rolling over in bed during erection was seen in 3(6.2%) patients. All patients presented in general surgery department with complaints of pain and swelling in penile region. Time interval between injury and presentation to the department ranged from 4-24 hours (mean 11 hours). Isolated cavernosa injury was seen in 43 (89.6%) patients, while as 5 (10.4%) patients were having associated urethral injury (3 were having partial injury and 2 complete urethral disruption). There was a ventral rent in 31(64.6%) patients and lateral rent in17 (35.4%). Size of tear in tunica albuginea was less than 1cms in 19(39.6%) patients, 1-2cm in 17(35.4) patients and more than 2cms in 12 (25%) patients. Patients were discharged on 2-5 days (mean 3.1 days). There were no immediate postoperative complications. 2 (4.1%) patients had pricking sensation at repair site, 1(2.05%) patient had pain during erection and 2 (4.01%) patients had mild deviation during erection on follow up.
Conclusions: Penile fracture is a relatively rare urological emergency which mostly occurs during sexual intercourse or aggressive masturbation and is usually a clinical diagnosis. Early surgical repair avoids complications and preserves both sexual and voiding functions.

Keywords: Corpus cavernosa, Penile fracture, Tunica albuginea

INTRODUCTION

The first documented report of this condition was credited to Albulkasem, the Arab Physician, in Cordoba more than 1000 years ago.[1] Penile fracture is defined as a traumatic rupture of the tunica albuginea of one or both corpora cavernosa of an erect penis. There may be an associated injury to the corpus spongiosum or urethra.[2] The condition is under-reported, and certainly not as rare as has been claimed.[3] Although the penis has no bones, but the situation occurring in an erect penis mimics fracture sequences that occur in bones. In penile fracture, the cause of rupture is buckling of the tunica albuginea during erection, tunica stretches and changes its thickness from 2mm to 0.25mm, losses elasticity, and due to that penile fracture can occur by implication of blunt force or bending.[4] Fracture of the penis usually results from direct trauma during sexual intercourse, masturbation, bending

of the erect penis to achieve detumescence or accidental over in bed. The patient complains of an audible cracking sound (snap or pop), an intense pain, detumescence, immediate swelling (penile deformity), and penile bruising (ecchymosis) with deviation to the side opposite the tear.[5] Some patients may present with bleeding perurethra or acute urinary retention which indicates an associated urethral injury.[6] Findings at presentation include penile swelling, ecchymosis and deformity (the so-called 'eggplant' or 'aubergine' sign). The clinician might be able to illustrate the 'rolling sign', which is the palpation of the localised blood clot over the site of rupture. The presence of blood at the urethral meatus, gross haematuria or voiding difficulties may indicate a urethral rupture. Delayed presentation may result in complications such as erectile dysfunction, penile deviation and plaques resembling those of Peyronie's disease.[7] Penile frature is a clinical diagonosis but in doubtful cases corpus ultrasonography is helpful in locating and planning for surgery, urethrography can be advised for associated urethral injury.[8,9] Early surgical exploration clot evacuation and repair of torn *corpus cavernosum* minimizes complication and is best in comparison to conservative treatment.[10]

METHODS

This study was conducted in the Postgraduate Department of General Surgery, SMHS Hospital, an Associate Hospital of Government Medical college Srinagar, Kashmir, India from May 2007 to May 2010. A total of 48 patients of fracture penis who presented in surgical department were included in the study. All patients were admitted in casualty ward and underwent detailed history, clinical examination and baseline investigations which included, Haemogram, total leukocyte count, differential leukocyte count, Kidney function tests, blood sugar, serum electrolytes, urine examination, X-ray chest and ECG. Retrograde urethrography was done in patients with suspected urethral injury. Various parameters noted were; cause of fracture, time elapsed since the incident, age of patient, marital status, clinical presentations, diagnostic approach, operative findings and outcome. After detailed informed consent was obtained and documented, all patients underwent immediate surgical repair. The procedure was performed under spinal anesthesia. After catherization a subcoronal circumferential degloving incision was made and whole of penile shaft was exposed. Hematoma was located and evacuated. Site and size of rent was noted. Defect in tunica albuginea was completely delineated and sutured using 3-o polygalactin interrupted sutures in a water tight manner. Urethral injuries when present were primarily sutured over the indwelling catheter with interrupted 4-o polygalactin sutures. Complete hemostasis was done in all cases and incision was closed by 3-0 polygalactin sutures and dressed. Erection suppressing drugs in the form of phenobarbitone and ethyl estradiol were started in postoperative period in addition to antibiotics and analgesics. Catheter was removed on day 2nd, however in patients with urethral injury it was kept up to 4 weeks. All patients were discharged on 3rd postoperative day and advised follow up at one week, 2 weeks and then monthly for one year.

RESULTS

This study included 48 patients of penile fracture admitted in general surgery department. Age range of patients was 23-75 years (Table 1).

Table 1: Age distribution.

Age in years	Number of patients	Percentage
<25	8	16.6
25-50	29	60.5
>50	11	22.9
Total	48	100

Youngest being 21 years and eldest being 75 years (median 30 years). In present study 38(79.1%) patients were married while as 10(20.9%) patients were unmarried.

Table 2: Site and mechanism of injury.

Parameters	Marital status		Mechanism of injury			Type of injury		
	Married	**Unmarried**	**Coital trauma**	**masturbation**	**Rolling over**	**Isolated cavernosal injury**	**Associated urethral injury**	
No. of patients	38	10	40	5	3	43	5	
Percentage	(79.1%)	(20.9%)	(85.4%)	(10.4%)	(6.2%)	(89.6%)	(10.4%)	
Parameters	Site of injury		Size of rent			Complications		
	Ventral	Lateral	<1cm	1-2 cm	>2 cm	Pricking sensation at injury site	Pain during erection	Mild deviation
No. of patients	31	17	19	17	12	2	1	2
Percentage	(64.6%)	(35.4%)	(39.6%)	(35.4%)	(25%)	(4.1%)	(2.05%)	(4.1%)

Trauma to erected penis during sexual intercourse was seen in 41(85.4%) of patients followed by aggressive masturbation in 5(10.4%) patients. Rolling over in bed during erection was seen in 3(6.2%) of patients. All

patients presented in general surgery department with complaints of pain and swelling in penile region. Time interval between injury and presentation to the department ranged from 4-24 hours (mean 11 hours) (Table 2).

There was isolated cavernosa injury in 43 (89.6%) patients while as 5 (10.4%) patients were having associated urethral injury (3 were having partial injury and 2 complete urethral disruption). There was a ventral rent in 31(64.6%) patients and lateral rent in17 (35.4%). Size of tear in tunica albuginea was less than 1cms in 19 (39.6%) patients, 1-2cms in 17 (35.4) patients and more than 2cms in 12 (25%) patients. Patients were discharged on 2-5 days (mean 3.1 days). Follow up with detailed history was asked on one week, two weeks and then monthly for one year. There were no immediate postoperative complications. 2 (4.1%) patients had pricking sensation at repair site, 1(2.05%) patient had pain during erection and 2 (4.01%) patients had mild deviation during erection on follow up for one year.

DISCUSSION

Penile fracture is a rare urological emergency which occurs only in erected penis, as tunica albuginea thins out from 2.5-5mm to 0.5mm during erection. Normal intracorporal pressure during erection is 100mmHg while as pressure required for fracture penis to occur is 1500mmHg which occurs during sudden bending of erected penis during sexual intercourse, masturbation, rolling over the erected penis or self-bending to achieve detumescence. In present study author found sexual intercourse as a most common cause seen in 40 (83.3%) patients, masturbation in 5 (10.4%) and rolling over in bed during erection in 3 (6.2%) patients. Malik MH et al 11in his study of 32 patients, found intercourse as a cause of fracture penis in 90.6% patients and rolling over in bed during erection in 9.4% of patients. Namatullah H et al also found sexual intercourse as commonest cause of fracture penis.[10]

Fracture penis is a disease of sexually active age group which is predominantly seen in young males. Youngest patient in present study was 21 years old and eldest was 75 years of age (median-30 years). 29 (60.5%) patients were in age group of 25-50 years while as 11 (22.9%) patients were >50years old and only 8 (16.6%) patients were <25 years of age. Hamid A et al found 64.3% of patients in age group of 25-50 years, 19% above 50 years and 16.7% below 25 years, matching the results.[11] A 38 (79.1%) of patients in present study were married and 10 (20.9%) were unmarried. Time interval from injury to presentation to surgery department was 4-24 hours (mean was 11hours). Hussain M et al found in his series reporting time 1-8 hours. Usual complaints of a patient are; audible cracking sound (snap or pop) followed by an intense pain, detumescence, immediate swelling, and penile bruising (the so called "eggplant deformity"). Physical examination of the penis can often detect the site of corporal tear by palpating over hematoma. The "rolling sign" is used to describe a firm, immobile hematoma, which is palpable as the penile skin is rolled over.[12] Fracture penis is a clinical diagnosis and rarely in doubtful cases ultrasonography is required.

All patients in present study were diagnosed clinically and were operated by a subcoronal circumferential degloving incision and whole of penile shaft as exposed. 31(64.6%) patients had rent on ventral side and 17 (35.4%) patients had rent on lateral side. Size of tear in tunica albuginea was <1cm in 19 (39.6%) patients, 1-2cms in 17 (35.4%) patients and >2cm in 12 (25%) patients. Emad Hassan Mehmood found in his study 66% patients having ventral rent while as 34% patients having lateral rent.[13] Associated urethral injury has been reported in 0.3% cases in Japan and Middle East and up to 20-30% in USA and Europe. Discrepancy is attributed to etiology of trauma.

In USA and Europe, sexual intercourse being most common cause while in Japan and Middle east forceful bending of erected penis to achieve detumescence is usual cause.[14] Inability to pass urine or blood at meatus indicates urethral injury which is confirmed by retrograde urethrography. Author reported urethral injury in 5 (10.4%) patients, partial injury in 3 (6.25%) and complete disruption in 2 (4.16%) patients. On follow up of one year all these 5 patients had uneventful course with good stream. Most of the authors until 1970 recorded conservative treatment for managing penile fracture, however it was later seen that conservative treatment leads to lot of complications like prolonged pain, curvature and erectile dysfunction. Current literature supports immediate surgical repair which have minimal complications and goog functional outcome.[15,16] No immediate complications were seen in the patients while as on follow up 2 (4.1%) had pricking sensation at repair site, 2 (4.1%) patients had mild penile deviation during erection toward rent side, but it did not affect their sexual activities and 1 (2.01%) patient had mild painful erection. Nawaz H et al found penile deviation in 4.3% of patients.[2]

CONCLUSION

Penile fracture is a relatively rare urological emergency which mostly occurred during sexual intercourse or aggressive masturbation and is usually a clinical diagnosis Common clinical presentation is popping sound during trauma resulting in severe penile pain, detumescence and penile deformity. Early surgical repair avoids complications and preserves both sexual and voiding functions.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Al-Shaiji TF, Amann J, Brock GB. Fractured Penis. J Sex Med. 2009;6:3231-40.
2. Nawaz H, Khan M, Tareen FM, Khan S. Penile fracture: presentation and management. J Coll Physicians Surg Pak. 2010 May 1;20(5):331-4.
3. Cendron M, Whitmore KE, Carpiniello V. Traumatic rupture of the corpus cavernosum: evaluation and management. J Urol. 1990;144:987-91.
4. Kulovac B, Aganović D, Junuzović D, Prcić A, Hadziosmanović O, Bazardzanović M, et al. Surgical treatment and complications of penile fractures. Bosnian Journal of basic Medical Sciences. 2007 Feb;7(1):37-9.
5. De Rose AF, Giglio M, Carmignani G. Traumatic rupture of the corpora cavernosa: new physiopathologic acquisitions. Urol. 2001;57:319-22.
6. Herg CT, Brooks AJ. Penile fracture with complete urethral rupture. Asian J.Surg.2003; 26(2):126-7.
7. Masarani M, Dinneen M. Penile fracture: diagnosis and management. Trends in Urology and Men's Health. 2007 Sep 1;12(5):20-4.
8. Maydlo JH, Hayyeri M, Macchia RH. Urethrography and cavernosography imaging in a small series of penile fracture: a comparison with surgical fi ndings. Urol. 1998;51:616-9.
9. Beysel M. Tekin A, Gurdal M. Evaluation and treatment of penile fracture: accuracy of clinical diagnosis and value of clinical diagnosis and the value of corpus cavernosography. Urol. 2002:60:492-6.
10. Naimatullah HZ, Israr M, Ali M. Results of early surgical treatment in fracture of penis. Pak J Surg. 2013;29(4):252-4.
11. Hamid A, Mushtaq M, Wani MS. Penile Fracture: A ten years Experirnce at a tertiary care centre. CIB Tech J Surg. 2014;3(1):10-4.
12. Malik MH, Amir ZI, Shahiman MA, Ahmed A, Farooqi MA. Penile fracture-Outcome of Early Surgical Intervention. Journal of Rawalpindi Med Col. 2012;16(1):12-4.
13. Mahmood EH. Surgical Treatment of Penile Fracture. 2014.
14. Gregory S, Jack M, Garrawy I, Reznick R, Rajfer J. Current treatment options for penile fracture. Rev Urol. 2004;6:114-20.
15. El-Taher AM, Aboul-Ella HA, Sayed MA. Management of penile fracture. J Trauma. 2004;56:1138-40.
16. Zargooshi J. Penile fracture in Kermanshah, Iran: the long-term results of surgical treatment. BJU Int. 2002;8.

Cite this article as: Dar HM, Mala TA, Hassan Y, Malla SA, Ahmad MM, Dogra V. Penile fracture; three years' experience from a tertiary care centre. Int Surg J 2018;5:553-6.