



Management of penile fracture - An institutional experience

J. Sasi Kumar*, Gurunath Rao K, Satyam Sharma, Subith Kumar K

Department of Urology, Mamata Medical College/General Hospital, Khammam, Telangana state.

Submission Date: 02-06-2014, Acceptance Date: 16-06-2014, Publication Date: 31-07-2014

How to cite this article:

Vancouver/ICMJE Style

Kumar JS, K GR, Sharma S, K SK. Management of penile fracture - An institutional experience. *Int J Res Health Sci* [Internet]. 2014 Jul 31;2(3):860-3. Available from <http://www.ijrhs.com/issues.php?val=Volume2&iss=Issue3>

Harvard style

Kumar, J.S., K, G.R., Sharma, S., K, S.K. Management of penile fracture - An institutional experience. *Int J Res Health Sci*. [Online] 2(3). p.860-3 Available from: <http://www.ijrhs.com/issues.php?val=Volume2&iss=Issue3>

Corresponding Author:

Dr.J.Sasi Kumar, Department of Urology, Mamata Medical College & General Hospital, Khammam, Telangana, India.
Email: mamatakhmm@gmail.com

Abstract:

Being a urological emergency and probably under reported, an analysis of 15 penile fracture cases that underwent surgical repair in our center was attempted to share the experience. The interval from injury to presentation was between 2 to 46 hours. Strained sexual intercourse followed by masturbation was the most common cause of penile fracture. Unilateral corporeal rupture predominantly on right side was seen frequently and concomitant urethral injury was a rare finding. Follow up patients were contacted through phone or mail and reevaluated by local examination, questionnaire and Color Doppler Sonography where ever necessary. Nearly 75% of patients were followed up for more than one year without any complaints. Palpable scarring, ED and penile deviation were few less frequently seen problems. Scar formation was high when non absorbable sutures are used.

Key words: Tunica Albuginea; Penile fracture; Priapism; Urethral injury; Khammam

Introduction

The rupture of the Tunica Albuginea of the corpus cavernosum of the erect penis due to trauma is commonly known as penile fracture - a misnomer [1]. Penile rupture is unusual and requires high pressure due to the presence of soft tissue with high tensile strength [2]. Though involvement is one side both corpora may get injured. The injury may get extended into corpus spongiosum in more than 20% of cases and urethra in 10% of cases [3]. It is a urological emergency under reported with increasing incidence [4,5].

The clinical symptoms are cracking sound accompanied by swelling and angulation [6]. In cases of urethral injury there will be hematuria [7]. The diagnosis and site of the tear is established by imaging investigations like ultrasonography, MRI, cavernosography [8-10]. Early surgical intervention results in functional and cosmetic restoration with low complication rate and uncertain long term results [11,12]. This study is aimed to share experience with 15 cases with penile fracture treated surgically and evaluated subjectively and objectively.

Material and Methods

The case records of 15 patients who underwent surgical repair of penile fracture between the calendar years 2002 to 2013 were reviewed. The urethral catheter was fixed routinely at the start of operation and left in position for 1 day. Either a degloving circumferential or a direct incision over the site of tear was the surgical procedure used to evacuate the hematoma beneath Bucks fascia. Control of bleeding and adequate hemostasis was assured. Subcutaneous hematoma along the penile shaft and scrotum was left for spontaneous resolution. Closure of tunical defect was performed with either absorbable or nonabsorbable interrupted sutures. In cases of urethral tear either direct repair or in complete urethral injury cases tension free end to end anastomosis after sufficient dissection of the urethra at both sides of tear. A siliconized urethral catheter was left in for 1-4 weeks depending on the type of injury. All patients were advised not to participate in sexual activities for more than 2 months.

During follow up all patients were locally examined for penile deviation, fibrotic scarring and erectile dysfunction by Color Doppler Ultrasonography (CDU). Duration of follow up ranged from 12 months to 48 months. All patients were reevaluated using the sexual health inventory for men questionnaire an abridged version of the 15 item international index of erectile function (IIEF). Penile CDU was carried out inducing erection by intracavernous injection of 20 micro grams of prostaglandin E1. Response to erection was considered positive when there was rigid erection that persisted for more than 15 minutes. Penile CDU was performed within a minute after ICI of PGE1 using linear transducer 5-10 MHz. Scanning starting at the base of the penis, the cavernosal arteries were identified with serial measurement of peak systolic velocity (PSV), end diastolic velocity (EDV) and resistive index every 5 minutes for 30 minutes until maximum PSV and minimal EDV were reached. A dynamic PSV <30 cm/s was considered as indicative of arterial insufficiency, resistive index less than 0.85 and EDV >5cm/s were considered as suggestive of veno-occlusive dysfunction.

Results:

All 15 patients were between 20 to 46 years of age with 7 cases in the age group of 20 – 30, 5 in 31-40 and 3 cases in 41-50 years. The interval between injuries to surgical intervention was 2 to 46

hours. Patients were seen in casualty within 2- 46 hours after penile trauma with complaints of penile swelling, echymosis, urethral bleeding and snap sound. Eight patients were married and 7 were single. The most common cause of fracture penis in our patients was sexual intercourse in 6 cases, masturbation in 3, direct blunt trauma in 4 and rolling over bed in 2 cases. Among 7 patients with urethral injury 5 complained of urethral bleeding and two with urine retention without bleeding per urethra. Diagnosis was made in all cases with characteristic clinical presentation and verified with penile sonography in 11, cavernosonography in 3 and MRI in 1 case. In five cases ascending urethrogram showed evidence of associated urethral injury. Tunical tear was found in the right corpus cavernosum in 38 patients, 16 in the left corpus and bilateral in 1 case on surgical exploration. Tunical tear was seen more commonly in mid shaft (In 7 cases) whereas; involvement of proximal shaft of the penis was in 2 cases and distal part in 6 patients. Urethral repair was required in 7 cases. On exploration of 3 cases with bleeding revealed torn superficial vein with intact tunica and ligated later (false fracture penis). Hospital stay ranged from 3-9 days.

A total of 3 patients were lost to follow up and long term follow up was available with 12 patients, for more than 12 months. No early post op morbidity was seen except in 4 cases. Mild infection was seen in 2 cases and remaining 2 had complications because of bleeding and hematoma. No complications were seen in 5 patients, painful erection was in 2, penile deviation in 3, erectile dysfunction in 7 and palpable scarring in 9. Palpable scarring was seen more in cases where nonabsorbable sutures were used. Among 5 cases with urethral rupture 2 were lost to follow up and remaining were followed up for more than 12 months without any urinary problems except for narrowing urethral passage which was later corrected with dilatation.

Of the 7 patients with erectile dysfunction 4 showed good response to PGE1 ICI together with normal penile duplex finding another 2 patients showed tumescence with PGE1 injection with high EDV on penile duplex ultrasonography suggested incompetent veno-occlusive mechanism and 1 patient showed penile artery insufficiency in Doppler ultrasound.

Discussion:

Vigorous sexual intercourse was reported to be the cause of penile fracture in 30% of cases followed by penile manipulations at masturbation [11,14]. Where as in this series 58% of cases showed sexual intercourse as the prime cause. Classic presentation of penile fracture is sufficient enough for exploration. Ultrasound was the routine investigation used to confirm the diagnosis because of its simplicity and years of experience. However noninvasive sonography depends on skill and site of tunical tear can be missed if it is too small. Tunical tear is full with a clot it will be difficult to indistinguish from surrounding normal tunica albuginea [9]. Contrast caverno sonography can also be of help in the diagnosis of tunical rupture [8,15]. But being an invasive procedure it carries some disadvantages like infection, priapism and allergy to iodides [6,9]. When diagnosis is uncertain MRI may be the choice of investigation, but expensive and not available very where [10].

Sub coronal circumference incision was preferred and used in 7 cases because of the excellent exposure of the three corpora which avoids missing of a urethral injury or multiple injuries of the tunica [6,7,15]. In the remaining 8 cases with palpable tunical defect under anesthesia and no evidence of urethral injury, longitudinal incision over the expected site was applied.

Higher incidence of right corporal rupture compared to left one could not be explained. Mid shaft fractures are more common as this site is weakest part of tunica during erection. Interrupted absorbable sutures were preferred for repair of the ruptured tunica albuginea, as high incidence of scarring is seen with nonabsorbable sutures. No false fracture of penis was diagnosed where as an incidence of 4-10% was reported [16].

In this series only one case was seen with associated urethral injuries, whereas 10-20% was reported in the published data [3,6,7]. In view of bilateral injuries having a higher rate of urethral disruption compared to unilateral fractures, all cases with evidence of bilateral corporeal rupture should be investigated for a potential urethral injury [5]. Out of 15 cases 3 had bilateral corporeal rupture and all those 3 cases had a concomitant urethral injury. This finding supports the results of previous studies [5].

Good functional results with normal sexual function, absent penile curvature and scarring (69%) was seen in long term followed up patients. Palpable

fibrous scarring was seen in 8% of cases. This is little higher than the reported data [17].

Incompetent veno occlusive mechanism was seen In 3 patients out of 7 cases with ED. Other 4 patients had normal color duplex penile indexes without any vascular problems. Erectile dysfunction was attributed to disturbed psychogenic element due to fear of recurrence of such trauma which may interrupt spontaneity and normality of the sexual act. Four cases showed penile artery insufficiency in Doppler ultrasound could be due to their old age and diabetes.

Conclusion

This study showed sexual intercourse as the prime cause of penile fracture. Immediate surgical intervention may be the reason for good functional results with low morbidity and short hospital stay. Patients on long term follow up could maintain their erectile ability without any penile angulation or deformity. Nonabsorbable sutures may be avoided as this analysis showed association of higher incidence of scar formation.

Source of Funding: Self

Conflict of Interest: Nil

Acknowledgement

Authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors/editors/publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

References

1. Annamalai S, fractured penis:: two case reports . med J Malaysia 1986;41:278-280.
2. De rose Af, Giglio M, Carmignani G. Traumatic repute of the corpora cavernosa: new Physiopathologic acquisitions. Urology. 2001;57:319-322.
3. Tsang T, Demby AM. Penile fracture with urethral injury. J Urol. 1992;147:466-468.
4. Muentener M, Suter S, Hauri D, et. Al. Long-term experience with surgical and conservative treatment of penile fracture. J Urol. 2004;172:576-579.

5. Fergany A, Angemeier KW, Montague DK. Review of Cleveland clinic experience with penile fracture. *Urology*. 1992;54:352-355.
6. Orvis BR, McAninch JW. Penile rupture. *Urol Clin North Am*. 1989;16:369-375.
7. Nicolaisen GS, Melamed A, Williams RD, et al. Rupture of the corpus cavernosum; surgical management. *J.Urol*. 1983;130:917-919.
8. Mydol JH, Hayyeri M, Macchia RJ. Urethrography and cavernosography imaging in a small series of penile fractures; a comparison with surgical findings. *Urology*. 1998;51:616-619.
9. Kogi S., Saito Y, Arakaki Y, et al., Conography in fracture of the penis *Br. J Urol*. 1993;72:228-229.
10. Rahmouni A, Hoznek A, Duron A et al, magnetic resonance in penile rupture: aid to diagnosis *J Urol*. 1998;153:1927-1928.
11. Pandyan GVS, Zaharani A, Al Rashid M. Fracture penis; an analysis of 26 cases. *TSW Urology*. 2006;1:32-38.
12. De Giorgi G, Luciani LG, Valotto C, et al. Early surgical repair of penile fractures; our experience. *Arch Ital Urol. J Androl*. 2005;77:103-105.
13. Rosen RC, Cappelleri JC. The sexual health inventory for men (SHIM): a 5-year review of research and clinical experience. *Int J Impot res*. 2005;17:307-319.
14. El-Sherif AE, Dauleh M, Alloneh N, et al. Management of fracture of the penis in Qatar. *Br J Urol*. 1991;68:622-625.
15. Dever DP, Sarraf PG, Cantanese RP, et al. Penile fracture; operative management and cavernosography. *Urology* 1983;22:394-396.
16. Karadeniz T, Topsakal M, Ariman H, et al. Penile fracture: differential diagnosis management and outcome. *Br J Urol*. 1996;77:279-281.
17. Bennani S, El Mirmi M, Meziane F, et al. Traumatic rupture of the corpus cavernosum. 25 Case reports and literature review. *Ann Urol*. 1992;26:355-356.