VOLUME-6 | ISSUE-4 | APRIL - 2017 • ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46

PENILE FRACTURE PRESENTATION AND MANAGEMENT, OUR EXPERIENCE AT TERTIARY CARE HOSPITAL.

Urology

KEYWORDS: Penile fracture, penile hematoma, Sexual intercourse, Urethra, Tunica.

Bilal Ahmad Wagay	Senior resident Department of General Surgery, SKIMS Soura, Srinagar(190011).
Shahnawaz Mansoor Shah	Senior resident Department of General Surgery, SKIMS Soura, Srinagar(190011).
Mudasir Habib	Senior resident Department of General Surgery, SKIMS Soura, Srinagar(190011).

ABSTRACT

Background: Penile fracture is the traumatic rupture of tunica albuginea. Penile fracture is a urological emergency that occurs almost exclusively due to blunt trauma of erect penis. Diagnosis is mostly based on clinical history. **Aims and objectives:** To study the clinico-etiological profile and outcome of patients with penile fracture. **Methods:** This prospective study was conducted in Government Medical College Srinagar in the department of surgery over a period of two years. Total of 45 patients with fracture penis were included in the study. Clinico-etiological profile, management and outcome were recorded on a preformed proforma designed for the purpose. **Results:** The age group involved was 17-60 years with mean age of 29 yrs. 25 (55.6%) were married and 20(44.4) were unmarried. In 24 patients,fracture occurred during sexual Intercourse, in 13 patientsdue to masturbation and in 8 patients due to manipulation. 12 patients recalled a popping sound. Penile swelling was seen in 39 patients with pain in 37, deformity in 35 and ecchymosis in 3 patients. Diagnosis was made clinically and was confirmed on surgical exploration. One of the patients was managed conservatively. Repair of tunica defect was done with vicryl 2/0 in 44 cases. One urethral injury was encountered which was primarily repaired. Outcome was excellent and all patients regained complete penile function at 2 months follow up. Out of 44 cases treated surgically, 2patients had wound infection, 2 had painful erection, and 1 had fibrotic plaque in 1, had skin gangrene and 1, patient had depression. **Conclusion:** Penile fracture is an entity with typical clinical signs and no further investigations is usually needed. Management is early surgical intervention for better outcome and minimal rate of complications.

Introduction

Fracture penis is an uncommon urological condition. The incidence of penile fracture is under reported because many patients do not seek medical attention due to embarrassment of the clinical situation [1]. Penile fracture occurs when excessive force applied to the long axis of the penis in erect state results in the rupture of tunica albuginea of the corpus cavernoum. Although the injury may occur at any part of tunica albuginea, the distal third of is the most encountered site [2].The aetiology is usually the direct trauma to the erect penis by manipulations during coitus or masturbation [3]. In more than half of the cases rupture occurs during sexual intercourse and the remaining is secondary to rolling over in bed or kneading the penis to achieve detumescence [4]. Usually penis slips out of the vagina and then is thrust against the perineum or symphysis pubis, which results in the tear of tunica albuginea [4].Erection converts the flaccid penis into vulnerable organ in which the tunica albuginea becomes thin and prone to fracture. Normal pressure in the erect penis is the mean arterial pressure that is 100mmHg. The intracorporeal pressure that is needed to rupture the tunica or overcome its tensile strength is 1500mmHg 1. Most of the patients may present immediately after the injury, while some will delay treatment [5].Diagnosis of penile fracture is not difficult, history with physical examination not only settles the diagnosis but often give a clue to the extent of injury.Haematuria, blood on the urethral meatus or urinary retention is an indication of urethral injury either partial or complete [2]. Although rarely, when there is a diagnostic uncertainty, imaging techniques namely ultrasonography, corpus cavernography and MRI may be used. Retrograde uretherography is indicated in suspected urethral injury.1 Presently it is considered as an emergency and immediate surgical repair is the gold standard treatment. The goals of treatment for penile fracture are restoration of penile length, erectile function and maintenance of the ability to void while standing[6].There is also lack of consensus on the need for post-operative suppression of penile errection with diazepam or estrogen,routinely used in some studies, but declared to be unnecessary in other reports[7].

The authors have conducted this study to know clinico-etiological profile and outcome of patients with penile fracture.

Material and Methods

This was a prospective study conducted in the department of General surgery, Government Medical College Srinagar over a period of two years from January 2010 to December 2011 .Total 43 patients were taken up for the study. Patients were subjected to detailed history and physical examination. Age, marital status, cause of trauma, symptoms and signs, management and outcome were recorded on a preformed proforma designed for the purpose. Patients were managed surgically or conservatively according the clinical condition. Patients were followed weekly for first month and then monthly for six months. The results were tabulated and subjected to appropriate statistical analysis. The study was approved by the ethics committee and informed consent was taken from the subjects for the participation in current study.

Operative Technique: we inserted a Foleys urethral catheter preoperatively in all patients without urethral injury and intraoperatively in the patients with urethral injury. After induction of spinal anesthesia, circumferential sub coronal incision was made. This was followed by degloving the penis to its base. The hematoma was evacuated and the tunica tear was identified and repaired with 3-0 vicryl interrupted stitches. Suppressive therapy in the form of oestrogen and chlorodiazepoxide was given for first 1 week. Patients were advised to avoid sexual activity for 6 weeks.

Results

There were total 45 patients in our study .The age of the patients in our study was in the range of 17 - 60 years with the mean age of 29 years. Majority of the patients (75.5%) were in the range of 21 – 40 year

Table 1:-Demographic Profile of penile fracture patients

Age in years	Number of patients (%)
<20	2(4.44%)
21-30	23(51.12)
31-40	11(24.4)
41-50	7(15.56)
>50	2(4.44)

.In our study, 25(55.6%) patients were married. 28(62.2%) patients were from rural areas and 17 patients from urban areas. Most of the patients belonging to the rural areas were poorly educated and unemployed. The most common aetiology was intercourse in 53% patients followed by masturbation in 28.89% patients and rolling over or fall on erect penis in 17.87% patients.

Table 2:-Predisposing factors for penile fracture

Predisposing factors	Number of patients (%)
Intercourse	24 (53.34%)
Masturbation	13 (28.88%)
Rolling over erect penis	06 (13.34%)
Other	02 (4.44%)

The patients presented to us with the history ofswelling in penis in 39 (83.7%), pain in 37 (82.2%), deformity in 35 (77.8 %), ecchymosis in 33 (73.3%) and cracking sound 12 (26.6%) patients.

Table 3: Clinical presentations of patients with penile fracture

Clinical presentations	Number of patients (%)
Swelling	39(86.67%)
Pain	37(82.22%)
Deformity	35(77.78%)
Ecchymosis	33(73.34%)
Cracking Sound	12(26.67%)
Blood at meatus	01(2.22%)

The size, site and side of the defect in our study was observed and estimated intraoperatively or on ultrasonography.

Table 4: Assessment of tunica defect

Side of Rent		Site of Rent		Size of Rent	
Side	%	Site	%	Size	%
Right	62.20%	Proximal	64.40%	0.5-1 cm	48.88%
Left	33.30%	Middle	24.40%	1-1.5 cm	26.66%
Both	02.20%	Distal	08.90%	>1.5 cm	22.22%
No Rent	02.20%	No Rent	02.20%		

33(75.35%) of the patients were discharged from hospital between 3 - 7 days, 10(22.2%) patients were discharged after less than 3 days hospital stay and 2 (4.4%) patients were discharged on 9th and 11th day. Mean hospital stay was 3.48 days. Only 2 patients were discharged on 9th and 11th day because one had wound infection at the incision site which was managed conservatively andother had skin gangrene which settled after wound debridement. Rest of the patients were discharged between 1 - 7 days. In our study 7 patients had complication. One of the patients in whom there was suspicious of fracture and refused surgery, had painful erection The follow up period in our study varied between 4 months to 1 year with mean follow up after surgery being 6 months. Most of the patients regained the sexual function within 8 weeks with only one patient requiring 1year for the sexual function to regain to normal, as he suffered from depression. During this follow up history was taken regarding questions about erectile function, pain during intercourse, deformity in addition to detailed examination of the patients. In our study, 7(15.55%)patients had complications, among which 2 patients had wound infection treated by antibiotics and daily dressing ,2 patients had painful erection not impeding intercourse, 1 patient having penile skin gangrene requiring debridement, 1 patient had fibrotic plaque managed by medicines and 1patient had depression which was treated .

Discussion:-

Penile fracture was first described by Malis in 1925. Although penile fracture is easily recognized and therefore classified as a "first look diagnosis", thus clinical entity is always embarrassing for patients as well as partners and goes unreported many times.

Penile fracture has typical clinical signs reported as trauma to the penis, audible clicking sound, post erection detumescence with hematoma and swelling. Penile fracture is an entity of eminently clinical diagnosis; therefore the management of a penile fracture should not include any further investigation other than surgical exploration.

The age of the patients in our study was in the range of 17 - 60 years. The mean age of the patients in our study was 29 years. Majority of the patients were in the range of 21 - 40 years, 34 patients were in this range (75.5%). This is comparable to the studies by Rooh-ul-Muquim et al[8] in which age range was 18 - 65 years, majority (76.47%) patients were in 4th decade. In Paul D, Ekwereetal[9], age range was 20– 56years with mean age of 35.6±12.6 years and more than 63% of the patients were under 40 years of age. In Z Atharet al[10] mean age of the patients was 36 years and 66.6% were in age group of 20-40 years. There were only 2 patients below 20 years of age. Among these patients who were with range of 21 - 40 years, most of the patients were married.

In our study 25(55.6%) patients were married. This is comparable to studies by Paul Ekwere[9]in Feb 2004, where 57.9% patients were married and Z-Athar et al 2010 58.33% patients were married and Mamdouh M Abolet al[11] 57% patients were married. In these patients the main cause of the fracture was intercourse. The penile fracture is having some relation with area of residence. In our study 28 patients (62.2%) were from rural areas and 17 patients from urban areas. This is comparable to study carried out by Rooh-ul-Muquimet al[8] 2006 where rural patients were 58.83%, Urban 17% and scattered 23.52%. Most of the patients belonging to the rural areas were poorly educated and unemployed.

Most of the patients were unmarried from rural areas and had fracture during masturbation. This is comparable to study conducted by Mamdouh M Abol Nasr,et al[11] Oct. 2003 where in 16 patients (70%) belonged to rural areas.

The most common aetiology was intercourse in 24 (53%) patients followed by masturbation in 13 (28.89%) patients, rolling over or fall on erect penis in 8 (17.87%) patients. This is comparable to study by Taha Ab. Abdel Nasser, M.D et al[12] 2008 where in intercourse 50%, masturbation 25% and rough manipulation and acute bending after erect penis 16.6% were the etiological agents .In a study carried by Hung Jen Shih et al[13] in JTUA 2007, intercourse in 53.8%, masturbation in 23.07%, manipulation and bending of penis in 23.07% were the etiological agents. During intercourse the fracture of the penis would occur as penis slips out of the vagina and is thrust against the perineum or symphysis pubis vigorously. The reported incidence of the various etiological factors for penile fracture varies because patients do not always accurately report the cause, probably due to embracement.

By masturbation or rolling over or fall on erect penis, patient gets relieved of the sexual desire and gets sense of detumescence. Patientspresenting to emergency departmental in our study were having the clinical features of:Swelling in 39(83.7%) patients, pain in 37(82.2%) patients, deformity in 35 (77.8 %) patients, ecchymosis in 33 (73.3%) patients and cracking sound in 12 (26.6%) patients.These results are similar to the study conducted by Imtiyaz Wani[14] July 2008 having ecchymosisin 85.96% patients, swelling in 78.94%patients, pain in 75.43% patients anddetumescence in 89.9% patients .Similar results were found in the study conducted by Rooh-ul-Muquim et al[8]where in cracking sound was present in 88.2% patients, pain in 70.58% patients, swelling in 88.29% patients and deformity/curvature in 100% patients. Similar results were found inthe study presented by Paul D Ekwere[9]Feb 2004. Thus in our study the clinical presentation was comparable to other studies.

The sizes of the defects in the patients in our study as observed and estimated intraoperatively or on USG were 0.5 - 1 cm in 48.9% patients, 1 - 15 cm in 28.9% patients, and > 1.5 cm in 22% patients. The study carried by Abdullah Gediket al15 presenting a study of 107 cases with size in range of 0.5 - 1 cm (35.7%), 1 - 2 cm (60.4%) and 2 - 4 cm (39%).

Side of the defect in tunica albuginea, observed intraoperatively or on USG in patients with penile fracture, in our series was in the following sequence.

Right side in 28 (62.2%) patients, left side in15a (33.33%) patient, bilateral in 1 (2.22%) patients, no rent was found in 1(2.22%)patients.

VOLUME-6 | ISSUE-4 | APRIL - 2017 • ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46

These results are nearly in accordance to the study conducted by Paul D Ekwere[9] Feb 2004 in which the side of the defect was right in 57.9% patients, left side in 36.8% patients and undetermined 5.6% patients. In the observation by Z Atharet al[10] 2010, the side of the defect was right side in 58.3% and left side in 41.7% patients.

The tunica albuginea is one of the toughest tissue in the body in the erect state, thus tunica albuginea is prone to get ruptured. The site of tunica rent which was assessed intraoperative or on USG, was most common at the proximal part of penis in 29 (64.4%) patients, mid portion in 11(24.4%) patients, distal part in04(8.88%) patients and no rent in1(2.22%) patient. This data of our study is comparable with the study conducted by Imtiyaz Wani[14]in 2008, in which the prominent site of rent was right 63.4%, followed by middle 30.76% and distal 5.76% and Paul D Ekwre9 in Feb 2004 in which proximal rent was present in 57.9%, middle in 26.3%, distal in 10.5% and undetermined in 5.3% patients.

33 (75.35%) patients were discharged from hospital between 3 - 7 days, 10 (22.2%) patients were discharged after less than 3 days hospital stay and 2 (4.4%) patients were discharged on 9th and 11th day. Mean hospital stay was 3.48 days. Only 2 patients were discharged on 9th and 11th day because one had wound infection at the incision site which was managed conservatively and other had skin gangrene which settled after wound debridement. Rest of the patients were discharged between 1 - 7 days. Hospital stay is comparable to a study carried by GV Soundra, Pandyam, and Ahmed Bakeet Zaharani[16] Jan 2006 in which hospital stay was 3 - 8 days in 77% patients, 10-15 days in19% patients. Mean hospital stay was7.08days. Paul D Ekwere[9] mean hospital stay was 4.4 days(2-14 days).

In our study 7 patients had complication. One of the patients in whom there was suspicious of fracture and refused surgery, had painful erection. One patient had depression for which he was followed up for 1 year. Two of our patients had wound infection, which were managed conservatively. One of our patients had penile skin gangrene which settled after wound debridement. Two of our patients had painful erection which settled down without medication. One of our patient had fibrotic plaque for which triamicilone was given. So in our study complication were found in 7 (15.55%) patients. These results were comparable to study conducted by G.V Soundra Pandyanet al[16] Jan 2006.

The follow up period in our study varied between 4 months to 1 year with mean follow up after surgery being 6 months. Most of the patients regained the sexual function within 8 weeks with only one patient requiring 1year for the sexual function to regain to normal, because he suffered from depression. During this follow up history was taken regarding questions about erectile function, pain during intercourse, deformity and patients were also examined.7 out of 45 of our patients had complications. Among which 2 had wound infection treated by antibiotics and daily dressing ,2 had painful erection not impeding intercourse, 1 patient having penile skin gangrene requiring debridement, 1 had fibrotic plaque managed by medicines and 7th one had depression which was treated .

Conclusion

Penile fracture though reported rare, is not so rare. Penile fracture is a urological emergency. Penile fracture is managed either by surgical exploration and repair of tear in tunica albuginea or by conservative method. Conservative method is associated with high complication rate. Immediate surgical repair is the standard treatment of penile fracture as recommended by most authors.

We advocate immediate exploration, evacuation of haematoma and repair of the defect in the tunica albuginea as the gold standard treatment modality for the injury.

References:

1. Mohammad RafiqueAnjum. Fracture of penis:Diagnosis and management.Nishtar Medical Journal July-September 2009;Vol.1,No.3:9-13
2. Abdul Naser,M.ShunaugatMD,HakemS.Al-Kadi.Fracture of penis-A five year experience at King Hhussein Medical Center.JRMS Dec.2002;9(2):74-76
3. Mamdouh Osman, MD.Fracture of penis: Surgical management. Medical journal Cairo University 1994;62(1):65-69
4. Dincel C et al. Fracture of the penis.Eastern Journal of Medicine 1998;3(1);17-19
5. D MilutionovieZ.Dzamie,MAcimovie,JHadziDjokie.Evaluation and management of traumatic rupture of the corpus cavernosum.Institute of Urology and Nephrology,Clinical Centre of Serbia,Belgrade,Page 131-134
6. Badar Murtaza,MuhammadAkmal,WaqarAzimNaiz, HussainAhmad, ArshadMahmood.Fracture penis with complete urethral disruption during intercourseAyub Med CollAbottabad 2009;21(3):176-178
7. El-Fadil MA,El-Malik,FRCSI,AhmedM.Ghali,MD,Ahmed IA Ibrahim,FRCS(Ed).MohdRashid,MD.Fracture of the penis:A critique of clinical features and management. Annals of Saudi Medicine1997;Vol.17,No.5:558-561
8. Rooh-ul-Muqim,Qutb-e-Alam Jan and Mohammad Zarin. Management of penile fracture.Pak J Med Sci Jan-Mar 2006; Vol.22, No.1:23-27.
9. Paul D.Ekwere FRCS and Mohammed Al-Rashid FRCSI.Trends in the incidence, clinical presentation and management of traumatic rupture of the corpus cavernosum.Journal of the National Medical Association Feb.2004;Vol.96,No.2:229-233
10. Z Athar, PR Chalise, UK Sharma, PR Gyawali, GK Shrestha and BR Joshi.Penile fracture at Tribhuvan University Teaching Hospital. A retrospective analysis. Nepal Med Coll J 2010; 12(2):66-68.
11. MamdouhM.Abol-Nasr, Khalid EzzEldin,EhabR, Tawfiek, AlaymanH. Fathey,HamdyAbol Hassan and Amro HamdyMorsy. Penilefracture: Proline versus vicryl sutures in primary repair impact on erectile and voiding functions. Egyptian Journal of surgery Oct.2003; Vol.22, No.4: Pages 370-374.
12. Taha Abdel Nasser, MD, and TaymourMostafa, MD.Delayed surgical repair of penile fracture under local Anaesthesia-Journal OF Sexual Medicine 2008; 5:2464-2469.
13. Hung-Jen Shih,Wen-Chou Lin,Huang-KuangChang,Stone Yang, Jong-Ming Hsu,MarceloChen,Wei-Kung Tsai.Penile fracture: Analysis of 13 patients a literature review.JTUA 2007;18:99-101.
14. Imtiaz Wani. Management of penile fracture. Oman Medical Journal July 2008; Vol.23: issue 3: Page 162-165.
15. Abdullah Gedik,DevrimKayan,SaitYilmaz,KamuranBircan.The diagnosis and treatment of penile fracture: Our 19 year experience. Turkish Journal Trauma and Emergency Surgery 2011; 17(1):57-60.
16. G.V.SoundraPandyan, Ahmed BakeetZaharani,and Mohammed Al Rashid. Fracture penis: An analysis of 26 Cases. The Scientific World Journal (2006)6, 2327-2333.