SURGICAL REPAIR OF PENILE FRACTURE: A SINGLE CENTRE STUDY

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ABSTRACT

Objectives: To determine the outcome of surgical management of penile fracture.

Patients and methods: This descriptive study was carried out at Institute of Kidney Diseases, Hayatabad Medical complex Peshawar, Pakistan from Jan 2010 to July 2019. 11 patients received through Casualty and Out Patient Department were admitted and registered on a structured proforma. The penile fracture was diagnosed after taking detail history and examination. After doing the necessary investigations all patients were treated surgically by giving subcoronal circumferential incision. After degloving the penis, the blood clots were removed, the rent was identified and reconstructed with absorbable suture.

Results: Diagnosis of the patients were made clinically in all the eleven cases. Mean age was 28±4 years. Ten patients were having tear in the tunica albuginea of the corporal body on one side, right corpus cavernosum was involved in 6 patients while left in 4 patients. One patient was having tear in both corpora cavernosa and complete transaction of the urethra. Post-operatively one patient developed wound infections and 2 patients developed mild penile curvature (<30°). The bruising and swelling of the penis resolved spontaneously. The patient's average hospital stay was 3 days. During the follow up period, all patients were satisfied and were having good erection and sexual activity.

Conclusion: Penile fracture is a surgical emergency and can be treated surgically on emergency basis which results in good erection, sexual activity and no urinary voiding problem.

Keywords: penile trauma, penile fracture, urethral injury, urological emergency.

INTRODUCTION

Penile fracture is the most common form of penile trauma which is relatively a rare condition in our society. Fracture of the penis is a urological emergency. Many patients of penile fracture are unaware of the gravity of the situation.[1]

Penile fracture is a tear in the tunica albuginea as well as rupture of corpora cavernosa of the penis. The injury usually occurs during vigorous sexual intercourse when the penis slips out of vagina and hitting forcibly against resistance like perineum or symphysis pubis.[2] Masturbation and rolling over in bed when the penis is in erect position and bending of the penis forcibly to cause loss of erection "taqandaan" as practiced in the Middle East are the other causes of penile fracture.[3]

When the penis is in flaccid condition fracture of the penis is out of question. Penetrating and degloving injuries or amputation of the penis can occur. These conditions are not called penile fracture. Patients with penile fracture may have urethral injury (21%) and presents with hematuria, blood per urethra, or retention.[4-5]

In most of the cases the diagnosis of fracture penis is done on taking detail history from the patient and thorough clinical examination. The patient gives history of crackling sound, loss of erection, bruising, swelling, and pain, and sometimes bleeding per urethra. This presentation is considered diagnostic by many surgeons/ urologists. Others suggest that radiological investigations like retrograde urethrography, carvernosography or MRI should be done before surgery. Previously the penile fracture was treated conservatively by cold compresses, antibiotics, analgesics and anti-inflammatory drugs.[6] Currently due to these specific symptoms of penile fracture and clinical diagnosis, early exploration and repair of the rent in tunica albuginea, as well as any other injured structures of the penis is the standard treatment of choice.[2-7] Recent studies shows that early and immediate surgical repair of penile fracture is of utmost importance regarding its outcome. If penile fracture is suspected on clinical grounds, immediate surgical intervention should be carried out.[8]

The aim of our study is to share the experience of penile fracture with surgical repair on emergency basis and its outcome.

MATERIAL AND METHODS

All cases of penile fracture were received at emergency and outpatient department of Institute of

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kidney Diseases Hayatabad Medical Complex Peshawar Pakistan from Jan 2010 to July 2019. Out of these 11 patients, 1 had associated urethral injury as well. Data was collected over a structured proforma.

After taking proper history and performing clinical examination, emergency exploration was performed in all cases after necessary investigations on the same day. Subcoronal circumferential incision was made to deglove of the penis completely. A thorough careful examination of the tunica, corpora, and the urethra was performed to know about the injury to the structure, its site and size. The blood clots were removed and careful hemostasis was done. After identification of tear in the tunica albuginea repair was performed in all 10 cases with absorbable interrupted suture. In one case there was complete transection of the urethra along with tear in both the tunica albuginea. The tear in tunica albuginea of both sides was repaired in this specific case with interrupted absorbable suture separately and end to end anastomosis of the transected urethra over the catheter was done. Fig: 1. Urethral catheterization was done in all cases and dressing over the penis was performed. The catheter was removed on the second postoperative day in 10 cases, where as in one case of penile fracture associated with urethral injury, removal of the urethral catheter was done at 2 weeks interval after pericatheter contrast study and ruled out any extravasation of the contrast.

The patients average hospital stay was 3 days (2-5) and were sent home with instructions to continue medications properly to prevent erections for 3 weeks and abstain from sexual activity for 6-8 weeks. The patients were also instructed to come regularly for follow up visits at one, three, and six months to the hospital.

RESULTS

The diagnosis of all penile fracture was made after taking history and clinical examination. Most of the patients were of young age (18 - 45 years) and their mean age was 28$\pm$4 years. The patients presented to the hospital between 6 - 28 hours after sustaining the injury and the mean time interval between injury and presentation to the hospital was 15 $\pm$ 3 hours. Fracture of the penis occurred in 8 patients (72.7%) during vigorous sexual intercourse, while in 3 (27.3%) patients during masturbation and manipulation of an erect penis.

On presentation the complaints were sudden crackling sound, loss of erection, pain during sexual intercourse and penile deformity. They were treated surgically on emergency basis by using absorbable suture for the repair of tunica. 10 patients were having unilateral, transverse tear in the tunica albuginea of the corporal body, right corpus cavernosum was involved in 6 while left in 4 patients. One patient was having tear in both corpora cavernosae and complete transaction of the urethra. Postoperatively wound infection was developed in one case which was treated accordingly and mild penile curvature was developed in 2 cases which was not significant and was less than (<30°). The bruising and swelling of the penis resolved spontaneously. The average stay of patients in hospital was 3 days (range 2–5). During the follow up period, all patients were satisfied and were having good erection, sexual activity and no urinary voiding problem.

DISCUSSION

Penile fracture is a rare urological emergency. It affects the patients physiologically as well as psychologically. It is hidden or under-reported because of social embarrassment. Penile fracture is not correctly diagnosed or mismanaged when the patient seeks medical advice from physician.[9]

During erection the blood causes engorgement of the corporeal bodies and the surrounding tunica albuginea is thinned out from 2mm to 0.5–0.25mm and becomes more vulnerable to fracture at ventrolateral aspect.[10, 11] In case of bilateral corporal injury it is most commonly associated with urethral injury.[12]

Penile fracture is defined as the tear in the tunica albuginea along with the rupture of corpora cavernosum due to trauma. It usually occurs during vigorous sexual intercourse, when the erect penis misses the introitus and hitting the perineum or pubic bone, causing the injury. Cause of penile fracture may vary from region to region depending on the socio–cultural characteristics, masturbation habits and involvement in sexual activities.

The most common cause of penile fracture in the western world and United States of America is the vigorous sexual intercourse when the penis slips out of vagina and hitting forcibly against resistance or those woman-on-top positions resulting in impact of erect penis against the female perineum or pelvis and bending laterally can cause fracture of the penis.[13] In the Middle East the major cause is the forceful bending of erect penis to have quick loss of errection.[14,15] The commonest cause of penile fracture in Japan is masturbation and rolling in bed over an erect penis for sexual satisfaction.[16] In our study, vigorous sexual intercourse (72.7%), masturbation and manipulation of an erect penis (27.3%) is the commonest cause.

Urethral injury may be confirmed by retrograde urethrogram, but may give false negative results. This false negative result is due to the overlying hematoma which masks the defect at the site of injury.[17] Due to this reason we do not recommend in our routine practice, as reported by Mydlo and colleagues in their study of small series.[18] In our study the diagnosis was clinical. We did not performed any radiologic investigations in any of our patients. Based on clinical diagnosis immediate surgical exploration was performed. After degloving the penis, complete evacuation of the hematoma, identification of the tear in tunica or injury to the urethra was done and repair of the tunica albuginea was performed with

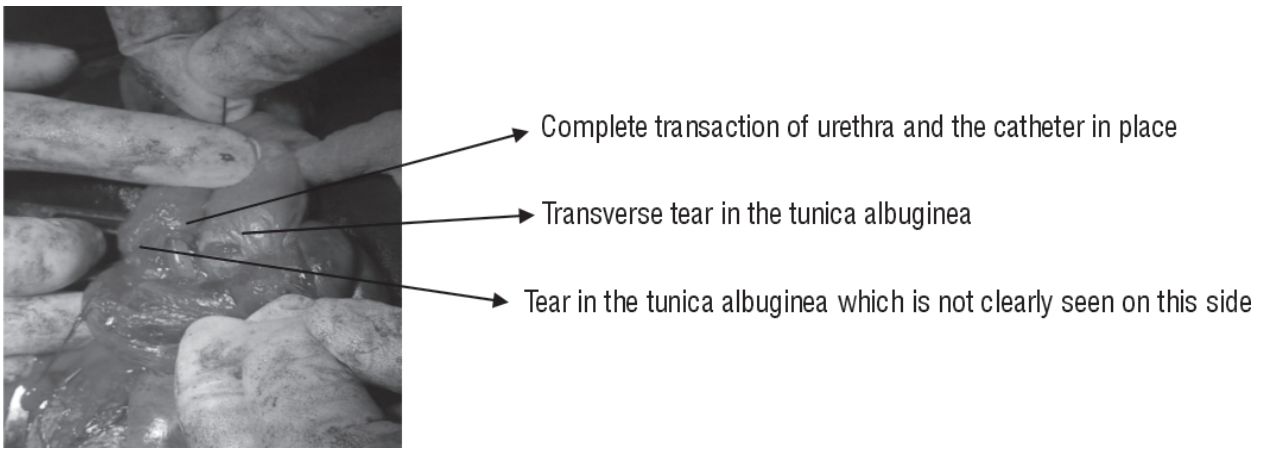

Fig 1: Penile fracture Repair in process

Fig 2: Operation completed and ready for dressing

absorbable suture, such as vicryl. Our procedure is comparable to the procedure of Jack GS et all.[17]and Rees RW et all.[19]

Early surgical exploration with removal of blood clots and repair of the tear in tunica albuginea has excellent results in the management of penile fracture.[20]

Early surgical repair has good outcome and delayed surgery can lead to missed urethral injury and stricture or fistula formation, persistent hematoma, penile abscess, curvature, and impotence. Postoperative complications are reported in 4–12%, with a 1–5% rate of erectile dysfunction.[21,22] In our study we noticed that one patient has developed wound infection which was treated accordingly and 2 patients developed mild penile curvature which was not significant and was less than (<30°). The bruising and swelling of the penis resolved spontaneously. The average hospital stay was 3 days (range 2–5). During the follow up period, all patients were satisfied and were having good erection and sexual activity.

CONCLUSION

Penile fracture is a surgical emergency and can be treated surgically on emergency basis which results in good erection, sexual activity and no urinary voiding problem.

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