

Original Research Article

Our experience with the management of penile fracture: a single institutional prospective observational study in eighteen patients over a two-year period

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Received: 24 May 2021

Accepted: 17 June 2021

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ABSTRACT

Background: Penile fracture is a not an unusual encounter in urological emergency. The condition results from disruption of the tunica albuginea which envelops the corpora cavernosa as a result of any condition which leads to the sudden rise of intra-cavernosal pressure. The study was designed to analyse the clinical spectrum and complications of penile fracture.

Methods: This is a prospective observational study undertaken from April, 2019 to March, 2021 on 18 patients. The demographic profile of all the patients, aetiology of penile fracture, management strategies and pre-operative sexual functions were documented. Erectile function was evaluated using international index of erectile function (IIEF).

Results: Seventeen out of 18 patients (94.44%) gave a history of injury during sexual intercourse. Out of the seventeen patients with history of injury following sexual intercourse, only 9 (52.94%) were married. Fifteen patients (93.75%) had disruption of the tunica albuginea in the ventrolateral position with 10 patients (66.66%) on the right side. Patients were followed up in the OPD after 2 weeks and then at 6 month and 1-year intervals. At 12 months postop, none of the patients complained of sexual inactivity. Average time to return to sexual activity was 3.2 months. Two patients complained of penile curvature >20 degree. Six patients complained of penile nodules at the site of repair.

Conclusions: Penile fracture is a urological emergency which is primarily diagnosed clinically. Prompt diagnosis and surgical exploration gives good outcome in terms of preservation of sexual function.

Keywords: Curvature, Erectile dysfunction, Fracture, Nodule, Penis, Surgery

INTRODUCTION

Penile fracture is not an unusual encounter in urological emergency. The reported incidence is 1 in 175,000.¹ The condition results from disruption of the tunica albuginea which envelops the corpora cavernosa due to any condition which leads to the sudden rise of intra-cavernosal pressure. It has been linked to injury sustained during sexual intercourse (especially during reverse cow boy position), vigorous masturbation or rolling over or falling on the erect penis. Patients usually present late due

to fear and embarrassment. This condition needs careful consideration with respect to correct diagnosis and management as it has long term consequences. In this study we report the clinical presentations, aetiology, management as well as sexual function of patients with penile fracture who reported to our centre.

METHODS

This is a prospective observational study of all the penile fracture patients who reported to the outpatient

department and emergency of a tertiary care centre in Kolkata, West Bengal, India. The study duration was from April, 2019 to March, 2021. In total, 18 patients were included in the study. The demographic profile of all the patients, aetiology of penile fracture, management strategies and pre-operative sexual functions were documented.

None of the patients who presented to the emergency underwent colour Doppler or magnetic resonance imaging of the penis as the history was very straight forward and clinical examination was sufficient for us to reach to a conclusive diagnosis. These patients as well as their attendants were counselled regarding the cause of injury and the possibility of erectile dysfunction, penile nodules and penile curvatures in postoperative period which might hinder sexual satisfaction. They were also informed that conservative management leads to worse outcomes as documented in literature.

Patients usually presented with an eggplant deformity of the penis with one patient having a history of haematuria with blood at the meatus. Patients were followed up at regular intervals.

All patients who presented to the ER underwent repair of penile fracture after circumcoronal degloving incision of the penile skin. Repair of the tunica albuginea was undertaken with 4-0 polydioxone inverting interrupted suturing. The area was reinforced with penile dartos using interrupted inverting suture with chromic catgut. They reported on any sexual disturbances, urinary problems, penile nodules or curvatures in post-operative period. Erectile function was evaluated using IIEF.

The study was conducted after taking institutional ethical committee clearance and followed the norms laid down by the declaration of Helsinki. All the statistical analysis, where needed, were performed using IBM IPSS 26.0 software.



Figure 1: Eggplant deformity following penile fracture.

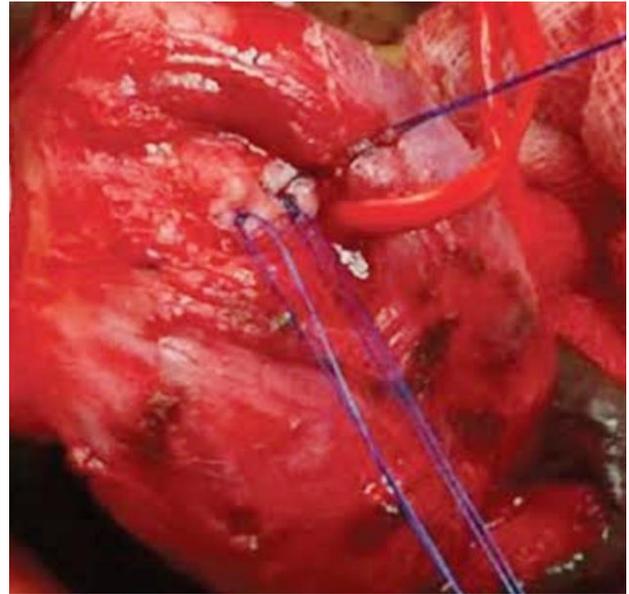


Figure 2: Intra-operative image of suturing of tunica albuginea with 4-0 polydioxone.

RESULTS

The median age of presentation was 24.4 years. Out of the 18 patients, sixteen (88.88%) presented to the emergency department. The remaining 2 patients (11.11%) presented to the outpatient department (OPD). Those who presented to the emergency had history of injury of <12 hours. The remaining two patients who presented to the OPD had a history of 7 days and 8 days respectively.

Seventeen out of 18 patients (94.44%) gave the history of injury during sexual intercourse either in woman-on-top position or reverse cow boy position. One gave history of rubbing erect penis against the edge of the bed when he fell on the floor on the erect penis. Out of the seventeen patients with history of injury following sexual intercourse, only 9 (52.94%) were married.

One patient gave history of haematuria and blood at the meatus. He did not undergo retrograde urethrogram (RGU) though it is a standard practise. He was easily catheterised with 16 Fr Foley catheter which drained clear urine.

Out of the sixteen patients explored, 15 (93.75%) had disruption of the tunica albuginea in the ventrolateral position with 10 patients (66.66%) on the right side. The two patients, who came to the OPD had moderate ecchymosis with penile oedema and were managed conservatively as they refused any kind of intervention.

All the patients were discharged on the second postoperative day.

Patients were followed up in the OPD after 2 weeks and then at 6 month and 1 year interval. At 12 months postop,

none of the patients complained of sexual inactivity. Average time to return to sexual activity was 3.2 months. Two patients complained of penile curvature >20 degree. Six patients complained of penile nodules at the site of repair. Those two patients who were managed conservatively were lost to follow up.

DISCUSSION

In our series, the most common cause of penile fracture was sexual intercourse. Most of the patients reported a pop sound with sudden detumescence. Seventy percent of the patients presented with eggplant deformity with diffuse ecchymosis while remaining 30% of the patients had localised penile oedema with hematoma.

Though, USG of the penis is recommended to safeguard against any medico-legal hassles in future, we did not opt for it as we do not have emergency USG facility in our ER and also because USG may be false negative in 50% cases. European association of urology (EAU) guidelines suggest MRI to be a more sensitive test but its cost and availability restricts its use.

Tunica defect is usually transverse and 1-2 cm in length.² Fracture is usually in the ventrolateral tunica albuginea (as it is thinnest at this site) and unilateral.^{3,4} Ten percent of cases have bilateral tunical disruption, most of which are associated with urethral injury.⁵

Urethral injury is usually suspected in patients with gross haematuria, blood at the meatus or inability to pass urine.¹ Though RGU is recommended in these cases, it is not a standard practise in our institution. Instead, we make a gentle attempt at catheterisation by the most senior member of the urology team. In most cases patients are easily catheterised, probably villainising contusion of urethra as the cause of blood at the meatus.

Urgent operative management is always recommended as conservative management can lead to erectile dysfunction (ED), penile deformities and sexual dysfunction in 10-30% patients.⁶ In our study, we could not comment on conservative management outcomes as both the patients were lost to follow up.

Distal circumcoronal degloving incision is preferred. However lateral incisions were made when defects were palpable.⁷⁻¹¹ In our study, we preferred the former in all patients.

Common cause of ED after fracture penis was cavernosal arterial insufficiency and veno-occlusive dysfunction.¹² The emergent repair of fracture penis has good erectile function compared to general population.

None of the patients in our study developed urethro-cavernous fistula or urethral stricture. The limitation of our study is less sample size. Further studies are needed

to facilitate the identification of complications at the earliest and a standard follow up protocol.

CONCLUSION

Penile fracture mostly presents in ER and the diagnosis is mainly by clinical judgement. Prompt diagnosis and surgical exploration gives good outcome. Long term problem with regards to penile nodules or curvature needs to be discussed and proper informed consent taken before embarking on any surgical intervention.

ACKNOWLEDGEMENTS

Author would like to thank whole trauma care unit team and above all our patients who give us wisdom.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Sengupta S, Basu S, Ghosh K, Sengupta S. Our experience with the management of penile fracture: a single institutional prospective observational study in eighteen patients over a two-year period. *Int Surg J* 2021;8:2089-92.