ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 10 | October - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

IMPACT OF TIMING OF REPAIR OF PENILE FRACTURE ON THE OUTCOMES

Urology

Dr Arshad Hasan* Department of urology, SCB Medical College & Hospital, Cuttack, Odisha. *Corresponding Author

Dr S. Panda Assistant professor, Department of urology, SCB Medical College & Hospital, Cuttack, Odisha.

Dr Samir Swain Assistant professor, Department of urology, SCB Medical College & Hospital, Cuttack, Odisha.

Dr PK Mohanty Assistant professor, Department of urology, SCB Medical College & Hospital, Cuttack, Odisha.

Dr G.P.Singh Associate professor, Department of urology, SCB Medical College & Hospital, Cuttack, Odisha.

Prof. Dr D. Hota Professor, Department of urology, SCB Medical College & Hospital, Cuttack, Odisha.

ABSTRACT

Background: Traumatic injuries to penis are uncommon due to its mobility. It is the disruption of tunica albuginea with rupture of orpus cavernosum. Traditionally it assumed as urological emergency and require immediate surgical intervention but time on patients reported to surgeons after fracture varies which affects the outcomes of repair and complications. **Objectives:** This present study was aimed to analyze effects of timing gap from fracture to surgical repair of fractures penis on postoperative outcome and complications. **Materials and Methods:** This is a prospective observational study conducted between 2017 and 2019 in all patients with penile fracture who reported to our urology departments .Detailed history and physical examination was done. Mode of fracture, deformity & associated injury especially urethral were noted . Appropiate Surgical repair was done and post-operatively outcome parameters like including penile sensation,penile curvature, tunical scar and erectile dysfunction. **Results:** A total of 31 patients were admitted and studied. Usual causes of fracture penis were masturbation , sexual intercourse in abnormal position and roo over bed on erect penis . Penile swelling, deformity were present in all the patients. Specific pop-up sound followed by loss of erection was heard by in 90% . Common reasons for increase timing gap of reporting to clinicians were fear & embarrassment , ignorance and poverty. Penile curvature and penile paresthesia were common post-operative complications. Mild degree of ventral chordee with appropiate satisfactory erection were noted in all the patients who had associated urethral injury. **Conclusion:** The results showed that timing gap of repair did not affect outcomes of repair significantly without any impact on erectile function and sexual satisfaction.

KEYWORDS

Penile deformity, Urethral injury ,Surgical repair, Tunical scar, Penile sensation, Erection

INTRODUCTION

Traumatic penile injuries are uncommon injuries which is the disruption of tunica albuginea with rupture of one or both corpus cavernosum.[1] Fracture of the penis usually occurs when rigid penis bends or strikes some hard objects like bone. It most commonly occur during vigorous sexual intercourse but also reported with masturbation, falling over erect penis , direct blunt trauma, sudden forced flexion.[1-4] It is traditionally recognized as a urological emergency which requires immediate surgical repair .[5] Most of the patients with penile fracture describe an audible cracking or popping snap, at the time of injury, followed by loss of penile rigidity and pain immediately. Rapid swelling ,altered skin discolouration, ecchymosis and bleeding from urethra .[1-5] Time of presentation to clinicians after initial injury usually varies and catagorized into early verse delayed presentation. Early when patients present in less than 24 hours from injury and delayed when presents in greater than or equal to 24 hours.[5] Delay seeking medical care is due to fear ,embarrassment, ignorance and poverty . Traditionally immediate surgical repair of fracture penis has been considered better due to better outcomes and minimal risks of complicatins.[3] But few previous studies focuses on advantage of delay presentation and repair which allow medical optimization of the patient before surgery, decrease tissue edema, and easy demarcation of necrotic and healthy tissue. It also allow for preoperative imaging with ultrasound or magnetic resonance imaging (MRI) which helps in clear planning of the management.[6] Few study reported that the delay between timing of injury and surgical repair was related to higher rates of complications.[7,8] The present study analyze the outcome and complications after surgical repair of penile fractures related time gap of presentation and surgical repair to initial injury.

MATERIALAND METHODS

We conducted a prospective observational study 2017 and 2019. All the patients with history and clinical features of penile fracture were analyzed pre-operatively and post-operatively. Total 31 patients were recruited. Time gap between patients presentation to clinician and initial trauma of penile fracture was noted. Early when patients present in less than 24 hours from injury and delayed when presents in greater than or equal to 24 hours. A detailed clinical history, clinical symptoms, Sexual relationship type, trauma mechanism, sexual position of the patient during trauma if sexual intercourse history there, history of any substance abuse noted. Thorough clinical physical examination was done and penile swelling, hematoma , skin discoloration, tenderness and associated urethral injury were noted. Figure 1 & 2 showing pre-operative image of fracture penis of two patients. Ultrsound of penis with colour Doppler was done to document the corporal defect. Patients with a history of urethral bleeding underwent retrograde urethrogram (RGU).

Immediate surgery was performed in all patients . Penile exploration was done by circumcoronal penile degloving incision .The hematoma was evacuated. Corpora cavernosa and Corpora spongiosa were inspected and defect delineated. Devitalized tissue removed and washed with hydrogen peroxide and normal saline. Figure 3 showing Intraoperative image of fracture penis with urethral injury on left lateral side seen during exploration. Defect in was repaired with polydioxanone (PDS) 3-0 suture. Defect in corpora spongiosa & urethra were closed in two layers . Per urethral catheterization was done with 14 fr Foleys catheter.Skin was sutured with 3-0 chromic catgut suture. Per urethral catheter was removed on second post-operative day but in patients with repaired urethra it was maintained for 7 days. All patients were followed up at 4, 12,24, and 48 weeks after surgery. During the all follow-up visits, outcome parameters and penile complications of penile fracture repair noted especially patients' complaints of wound-site complication, tunical scar formation, any micturating problem, penile bending and satisfactory erection. Poat-operative erectile dysfunction was assessed by international Index of Erectile Function-5 scores.

Figure 1

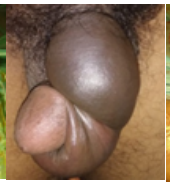

Figure 2

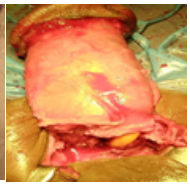

Figure 3

OBSERVATION

This is a prospective observational study conducted between 2017 and 2019. Total 31 patients were analyzed. Timing of presentation from injury of penis to beginning of medical care ranges from 4hours to 17 days. 17 out of total patients presented with in 24 hours where as 2 patients after 7 days. Sexual intercourse was the most common mode of penile injury followed by masturbation. History of typical pop-up and cracking sound and then sudden loss of rigidity were present in majority of patients. Penile swelling & ecchymosis were present in all patients . Pain and tenderness were in 76.4% of the patients and bleeding per urethra in 29.4% among who presented with early period in less than 24 hrs. Intra-operatively Majority of the patients had single transverse tunical tear in range of 1–2.5 cm. Most of the tear were in proximal part of shaft of penis. Bilateral corporal tear and urethral injuries were in 29.4% of the patients respectively.

Post-operatively penile paresthesia and altered penile sensation was present in 29.4% in patients who presented with 24 hrs and 33.3% in patients who presented between 1-7 days and in 1 patients who reported after 7 days. Penile plaque and nodule was felt in 11.7%,16.6% & 50% in patients presented within 24 hours, 1-7days & after 7 days respectively. Penile curvature also noted in 11.7%,16.6% & 50% in patients presented within 24 hours, 1-7days & after 7 days respectively. Patients who had mild penile pain during erection, got improved during follow-up period. Mild degree of ventral chordee were noted in the patients in whome urethral injury repair was done. Erectile dysfunction was present in 5.8% in patients presented with in 24 hrs where as 8.3% in patients who presented in between one to seven days. Table 1 showing different parameters according to time of patients presentation.

Table 1

Patients parameters	Patients presented within 24 hr	Patient presented in between 1-7 day	Patient presented after 7 days
Number of patients	17	12	2
Mechanism of trauma			
Sexual intercourse	58.8%	41.6%	50%
Masturbation	35.2%	41.6%	
Falling on hard surface	5.8%	16.6%	50%
Kick on erect penis	0	0	
Clinical features			
H/o pop-up sound	100%	83.3%	50%
Penile swelling & ecchymosis	100%	100%	
Pain and tenderness	76.4%	0	0
Bleeding per urethra	29.4%	0	0
Reason for delayed presentation			
Fear & embarrassment		66.6%	100%
Negligence		33.3%	
Intra-operative findings	100%	100%	
Hematoma	29.4%	16.6%	50%
B/L corporal injury	76.4%/23.5	75%/25%	0
Site(proximal/mid)	%	0	100%
Urethral injury	29.4%		0
Outcome & complications			
Penile paresthesia	29.4%	33.3%	50%
Penile plaque/nodule	11.7%	16.6%	50%
Penile curvature	11.7%	16.6%	50%
Decrease sexual satisfaction	11.7%	16.6%	50%
Erectile dysfunction	5.8%	8.3%	0

DISCUSSION

Although penile fracture is uncommon entity & its characteristic symptoms are a "snapping" or "popping" sound, penile pain, followed by immediate loss of rigidity and then development of ecchymosis and swelling of the penile shaft.[9] it is easily diagnosed by history and clinical examination some time physical examination do not differentiate it from a superficial penile hematoma or penile ecchymosis. Preoperative imaging like penile USG, magnetic resonance imaging, cavernosography, and retrograde urethrography are useful diagnostic tools to confirm diagnosis & to assess the site and extent of damage of penile fracture but it may result in delaying surgical treatment.[10] Urethral injury could be an associated lesion in 10% to 33% of penile fractures.[11] In the previous published literature mentioned causes of penile fractures were mixed. Yamacake Kg et al noted that 80.9% of patients had penile fracture due to sexual intercourse.[12] Al ansari A et al reported that in 54.1% of patients , manual bending of the erected penis was the cause.[13] Tijan K H observed sexual intercourse in 53.38% of patients & forceful bending of erected penis in 47.6% reason behind of penile fracture.[14] In the present study sexual intercourse was the most common mode of penile injury followed by masturbation. Common reasons for delay medical seeking were fear, embarrassment & personal negligence. Wong NC et al reported delay in seeking treatment for penile fracture is due to fear and embarrassment and had risk of more complications.

Previous studies defined time gap of seeking medical care in early repair (less than 24 hours) and late repair (greater than 24 hours).In the present study it is divided into less than 24 hours, 1-7 days & greater than one week to better correlate with time gap of presentation of penile fracture. Its surgical management results in excellent outcomes and less complications & early surgical management provides superior results and conservative approach should be avoided.[12] Bennani et al. demonstrated complication rates of 40.7% and 8.2% for conservative treatment and surgery, respectively.[15] There is no definitive consensus on the timing of the surgical repair but some authors are in favour of delayed repair for penile fracture.[16,17] They assumed that the penile edema and hematoma at the acute stage lead to greater injury to the blood vessels and nerves, requiring longer operative times, wound infection , skin necrosis and other complications.[18] In the present study , post-operatively penile paraesthesia and altered penile sensation 29.4%,33.3%,1 patients, Penile plaque and nodule in 11.7%,16.6% & 50% , Penile curvature in 11.7%,16.6% & 50% in patients presented within 24 hours, 1-7days & after 7 days respectively. Erectile dysfunction was present in 5.8% in patients presented with in 24 hrs where as 8.3% in patients who presented in between one to seven days. El-Assmy et al found in his study erectile dysfunction in 9/149 patients, penile plaque in 13/149 & penile curvature in 5/149 patients who presented and operated early and erectile dysfunction in 2/31 patients, penile plaque in 1/31 & penile curvature in 3/31 patients who presented and operated delayed.[19] Kozaciglu Observed that erectile dysfunction in 9/39 patients, penile plaque in 4/39 & no penile curvature who presented and operated early and erectile dysfunction in 1/3 patients, & penile curvature in 1/3 patients who presented and operated delayed. These study suggested complications and outcomes are comparable and slight delayed repair may acceptable.[20] Penile fracture is a heterogenous entity and outcome influenced by a number of factors includ mechanism of Injury , location and extent of injury, time gap of presentation and associated injuries. But the present study has small sample size and larger study is required to validate this.

CONCLUSION

The results showed that timing gap of repair did not affect outcomes of repair significantly without any impact on erectile function and sexual satisfaction.

REFERENCES

1. Campbell-Walsh Textbook of Urology, 11th edition, ch. 101, p .no. 2379 – 81.
2. Naouar S, Boussaffa H, Braiek S, El-Kamel R. Management of penile fracture: Can it wait? Afr J Urol 2018;24:56-9.
3. Nerli RB, Sharma V, Mungarwadi A, Pingale ND, Wagh AT, Sarnaik SM,et al. Long term outcome of patients with penile fracture undergoing delayed repair. Open J Trauma 2017;1:32-6.
4. Ibrahiem HI, El-Tholoth HS, Mohsen T, Hekal IA, El-Assmy A. Penile fracture: Long-term outcome of immediate surgical intervention. Urology 2010;75:108-11.
5. Can Urol Assoc J 2017;11(1-2):53-60. http://dx.doi.org/10.5489/cuaj.4032
6. Agarwal MM, Singh SK, Sharma DK, et al. Fracture of the penis: A radiological or clinical diagnosis? A case series and literature review. Can J Urol 2009;16:4568.
7. Karadeniz T, Topsakal M, Ariman A, et al. Penile fracture: Differential diagnosis, management, and outcome. Br J Urol 1996;77:279-81. https://doi.org/10.1046/j.1464-410X.1996.86420.x
8. Gottenger EE, Wagner JR. Penile fracture with complete urethral disruption. J Trauma 2000;49:339-41.https://doi.org/10.1097/00005373-200008000-00025
9. Metzler IS, Reed-Maldonado AB, Lue TF. Suspected penile fracture: to operate or not to operate?. Transl Androl Urol. 2017;6(5):981-986. doi:10.21037/tau.2017.07.25
10. Koga S, Saito Y, Arakaki Y, Nakamura N, Matsuoka M, Saita H, et al.Sonography in fracture of the penis. Br J Urol 1993;72:228-9.
11. Mydlo JH, Harris CF, Brown JG. Blunt, penetrating and ischemic injuries to the penis. J Urol. 2002;168(4 Pt 1):1433–1435.
12. Yamacake KGR, Tavares A, Padovani GP, et al. Long-term treatment outcomes between surgical correction and conservative management for penile fracture: Retrospective analysis. Kor J Urol 2013;54:472-6.https://doi.org/10.4111/kju.2013.54.7.472

13. Al Ansari A, Talib RA, Shamsodini A, Hayati A, Canguven O,Al Naimi A. Which is guilty in self-induced penile fractures: Marital status, culture or geographic region? A case series and literature review.Int J Impot Res 2013;25:221-3.
14. Tijani KH, Ogo CN, Ojewola RW, Akanmu NO. Increase in fracture of the penis in South-West Nigeria. Arab J Urol 2012;10:440-4.
15. Bennani S, Dakir M, Debbagh A, Hafiani M, el Moussaoui A, el Mrini M, et al. Traumatic rupture of the corpus cavernosum. Prog Urol. 1998;8:548–552.
16. Nasser TA, Mostafa T. Delayed surgical repair of penile fracture under local anesthesia. J Sex Med. 2008;5:2464–2469.
17. Naraynsingh V, Hariharan S, Goetz L, Dan D. Late delayed repair of fractured penis. J Androl. 2010;31:231–233.
18. Mansi MK, Emran M, el-Mahrouky A, el-Mateet MS. Experience with penile fractures in Egypt: long-term results of immediate surgical repair. J Trauma. 1993;35:67–70.
19. El-Assmy A, El-Tholoth HS, Mohsen T, Ibrahiem HI. Does timing of presentation of penile fracture affect outcome of surgical intervention? Urology 2011;77:1388-91.
20. Kozacioglu Z, Degirmenci T, Arslan M, et al. Long-term significance of the number of hours until surgical repair of penile fractures. Urol Int 2011;87:75-9. https:// doi. org/ 10.1159/000325589