



EVALUATING THE IMPORTANCE OF TIMELY SURGICAL INTERVENTION IN LONG-TERM ERECTILE AND URINARY FUNCTION AFTER TRAUMATIC PENILE FRACTURE

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INTRODUCTION

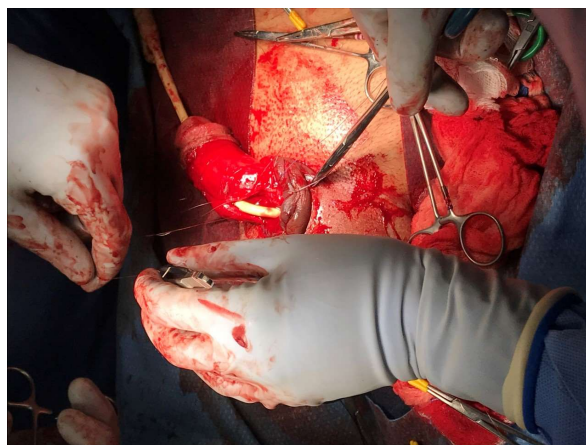
- Penile fracture is an uncommon injury often necessitating surgical intervention
- Penile fracture occurs during rupture of the tunica albuginea
- Diagnosis is based on clinical judgment plus imaging such as ultrasonography and/or MRI
- Penile fracture may lead to functional, physical and psychological complications
- Recommended treatment is degloving surgical incision, evacuation of hematoma and repair of the tunica albuginea
- Timely surgical repair is an important principle of treatment as delayed surgery may leave the patient vulnerable to untreated urethral injury, stricture or fistula, penile abscess, curvature, untreated hematoma, or erectile dysfunction

METHODS

- Retrospective study including 23 patients treated for traumatic penile fracture from March 2010 to October 2019 at a single institution
- Penile fracture was diagnosed on proper history and clinical examination with some cases also utilizing imaging
- The International Index of Erectile Function (IIEF-5) was utilized for objective post-operative erectile assessments



From Metzler IS, Reed-Maldonado AS, Lue TF. Suspected penile fracture: to operate or not to operate? *Transl Androl Urol.* 2017;6(5):981-986.



Outcomes	Early Repair (≤24hrs) N=18 (78%)	Delayed Repair (>24hrs) N=5 (22%)	p-values
Surgical Approach			
Degloving circumcision	14	4	p<0.05
Ventral raphe incision	4	1	NS
Penile Fracture Components			
Unilateral corpora cavernosa rupture	13	4	NS
Bilateral corpora cavernosa rupture	5	1	p<0.05
Concomitant corpora spongiosum rupture	5	1	p<0.05
Outcomes			
Erectile Dysfunction	4 (22%)	2 (40%)	NS
Erectile Function recovery at 6 mos	15 (83%)	1 (20%)	p<0.05
Penile curvature (<30 degree)	6 (33%)	2 (40%)	NS
Penile shortening	1	1	NS
Reoperative intervention	0	1	NS
Urethral stricture disease	0	1	NS
Transient priapism	0	1	NS

RESULTS

- Mean follow up was 11.6 months, with a range of 6-18 months
- Patient ages ranged from 18-52 with a mean of 38.5
- The average BMI was 28.6
- There were 11 African-American patients, 6 Caucasian patients, 4 Hispanic patients and 2 patients unknown race
- All patients received unilateral or bilateral corpora cavernosa repair
- Six patients underwent anastomotic urethroplasty for corpora spongiosa rupture
- Patients in both the early repair and delayed repair groups experienced erectile dysfunction, the most common complication following surgery
- Patients in the early repair group were significantly more likely than the delayed group to recover erectile function at 6 months follow up

CONCLUSIONS

- Traumatic penile fracture requires urgent attention, most likely necessitating emergent surgery
- Early surgical intervention produced favorable long-term outcomes
- Delayed surgical intervention left patients susceptible to significantly worse recovery of erectile function
- This study is limited by its small size – large multi-institutional studies are necessary to further investigate the relationship between time of surgical intervention and long-term erectile and urinary outcomes after traumatic penile fracture

1. Mahapatra RS, Kundu AK, Pal DK. Penile Fracture: Our Experience in a Tertiary Care Hospital. *World J Mens Health.* 2015;33(2):95-102. doi:10.5534/wjmh.2015.33.2.95

2. Ory J, Bailly G. Management of penile fracture. *Can Urol Assoc J.* 2019;13(6 Suppl4):S72-S74. doi:10.5489/cuaj.5932

3. De Luca F, Garaffa G, Falcone M, Raheem A, Zacharakis E, Shabbir M, Aljubran A, Muneer A, Holden F, Akers C, Christopher N, Ralph DJ. Functional outcomes following immediate repair of penile fracture: a tertiary referral centre experience with 76 consecutive patients. *Scand J Urol.* 2017 Apr;51(2):170-175. doi: 10.1080/21681805.2017.1280532. Epub 2017 Jan 26. PubMed PMID: 28125311.