



Fracture Penis: Early Operative Treatment and Outcome

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Received: 28-06-2025
Accepted: 29-11-2025
Conflicts of interest: None

Keywords: Penile fracture, Corpora cavernosa tear, Tunica albuginea disruption, sexual intercourse induced trauma, early repair, International Index of Erectile Function-Erectile Function Domain Scores, urethral injury, erectile dysfunction.

Abstract

Introduction: Penile fracture is a rare andrological emergency. Disruption of tunica albuginea of penis and tear of corpus cavernosum occur during sexual intercourse. Majority of the patients come to the emergency department immediately after the trauma and should be corrected early surgically.

Objective: To evaluate outcomes of repairing in patients who had sexual intercourse-induced fracture penis and underwent early surgical repair.

Materials and Methods: We retrospectively evaluated records of 97 patients who underwent early surgical repair due to sexual induced fracture penis between January 2012-July 2024 at Cumilla Medical College Hospital and private clinics. Age was 20-65 years, mean 45 years. Patients preoperative, peroperative and postoperative data were analyzed meticulously. Patients clinical features, penile trauma characteristics, pre-trauma and postoperative International Index of Erectile Function, Erectile Function Domain Scores (IIEF-ED), and operation note were evaluated. Follow up period was 6 months to 7 years.

Results: Total 97 patients who underwent early repair due to sexual intercourse induced fracture penis were investigated. 85 (87.62%) patients had unilateral corpus cavernosum rupture and 9 (9.27%) had bilateral corpus cavernosum rupture and 3(3.09%) patients had bilateral corpus cavernosum rupture with concomitant urethral rupture. 91 patients (93.42%) showed successful repair. Postoperative erectile dysfunction was observed in 4 patients (4.12%). Penile curvature developed postoperatively in 2 patients (2.06%). Whereas none of the patients developed voiding dysfunction.

Conclusion: Early repair with degloving approach is effective method in sexual intercourse-induced penile fracture for satisfactory outcome. Early repair also helps postoperative erectile success in young patients with isolated unilateral fractures.

Introduction:

Penile fracture is a rare andrological emergency.¹ It occurs typically as a result of buckling injury of the engorged penile corpora due to sexual intercourse induced trauma. Majority of the patients come to the hospital immediately after the trauma and few patients

come delayed. In majority of cases diagnosis can be established with history and clinical examination. In doubtful cases some investigations may be needed. These are ultrasonography (US), magnetic resonance imaging (MRI) of penis, urethrography.^{2,3,4} Most of the fractures occur during the sexual intercourse as a

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result of dislocation of the penis from the vagina due to vigorous movement and hitting the perineum or the pubic bone.⁵ During history patients complained of slipping of penis from vagina and there was cracking sound followed by pain, detumescence, penile swelling. Per urethral bleeding may be present in few cases. On examination penis is edematous, bruised, tender and deformed. Patients fracture penis should be corrected early surgically.

Materials and Methods:

We retrospectively evaluated records of 97 patients who underwent early surgical repair due to sexual intercourse induced fracture penis between January 2012-July 2024 at Cumilla Medical College Hospital and private clinics. Age were 20-65 years, mean 45 years. Patients preoperative, per operative and postoperative data were analyzed meticulously. Patient's clinical features including, weight, comorbidity, cause of trauma, presence of urethral injury, pre-trauma and postoperative Erectile Function Domain Scores of International Index of Erectile Function (IIEF-ED), erection hardness grade during sexual intercourse were evaluated. After exploration location of the fracture on the penis, fracture length, unilateral or bilateral, presence of urethral injury record was evaluated. Operation time, postoperative erectile dysfunction, postoperative IIEF-ED value, post-repair development of penile curvature and voiding dysfunction were evaluated. Preoperative and postoperative IIEF-ED scores were compared in order to predict the repair success. Furthermore, absence of postoperative erectile dysfunction, penile curvature and voiding dysfunction was considered as early surgical success. Late presented patients at hospital and the patients not agreed for operation, were excluded from our study. Follow up period was 6 months to 7 years.

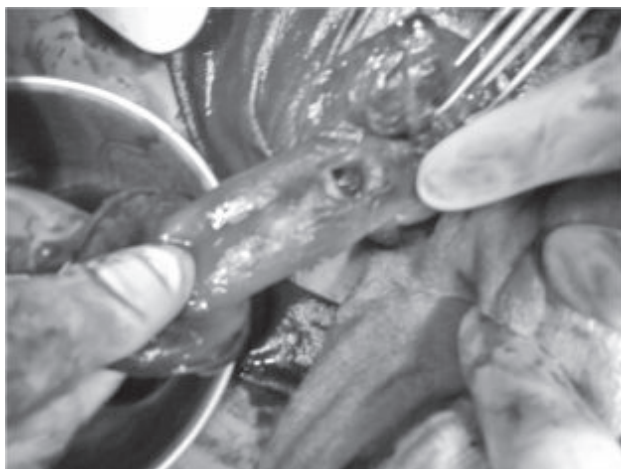


Photo 1: *Fracture penis, unilateral*



Photo 2: *Repaired fracture, unilateral*



Photo 3: *Fracture penis, bilateral involvement*



Photo 4: *Repaired fracture, bilateral*

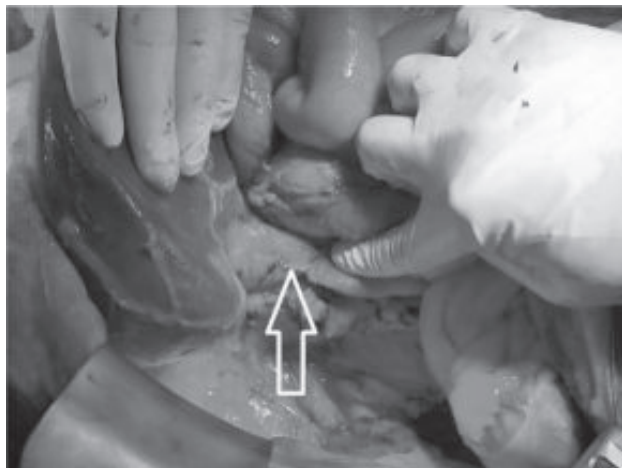


Photo 4: Repaired fracture, bilateral

Results:

Total 97 patients who underwent early repair due to sexual intercourse induced fracture penis were investigated. Characteristics of the patient's age, weight, comorbidities were analyzed. The mean time to admission in hospitals of the patients was 8.5 (3-16) hours. Ultrasonogram was performed in 11 (11.34%) patients due to uncertainty of diagnosis. The rest of the patients were diagnosed clinically with history and examinations. Early surgical repair was performed in all patients by using the degloving technique with incision from the circumcision scar around glans penis. Physical examination was done meticulously. Operative findings of injury of the patients are given in Table I. Location was at proximal part of penis 43 (44.32%) patients, mid part of penis 31 (31.95%) patients and at distal part of penis were in 23 (23.71%) patients. All fracture were transversely placed. For unilateral involvement, right corpora cavernosa in 49 (46.39%) patient and left corpora cavernosa in 36 (37.11%) patients. Ventral surface involvement were in 62 (63.91%) patients and dorsal surface involvement were in 35 (36.08%) patients. Size of fracture was 0.5 to 2 cm mean 1.2 cm. The mean operation time was 45-90 minutes mean 60 minutes. 85 (87.62%) patients had unilateral corpus cavernosum rupture and 9 (9.27%) had bilateral corpus cavernosum rupture and 3 (3.09%) patients had bilateral corpus cavernosum rupture with concomitant urethral rupture. Perioperative urethral catheter was inserted in all patients. The catheters were removed at 3rd post operative day in patients without urethral injury and at 14th POD with urethral injury. 91 patients (93.42%) showed successful repair. Postoperative erectile dysfunction was observed in 4 patients (4.12%) and

all patients those developed ED, age was more than 50 years and had bilateral fracture involvement. Penile curvature developed postoperatively in 2 patients (2.06%) and all 2 patients had both corpora cavernosum involvement. Whereas none of the patients developed voiding dysfunction.

Table-I : Per operative findings of fracture penis

Unilateral corpus cavernosum rupture	85 (87.62%)
Bilateral corpus cavernosum rupture	9 (9.27%)
Bilateral corpus cavernosum rupture with concomitant urethral rupture	3(3.09%)

Discussion:

All patients in our series presented in hospitals early within 3-16 hours mean 8.5 hours of trauma and underwent repair immediately. Fracture was repaired by Subcoronal incision on the penis and the penile skin was degloved for all patients in our series. Ventral midline incision method is another method to repair but we never used in our patients (6) as postoperative complications have been reported to be higher with the ventral midline incision in the literature, although no statistically significant difference was found (7). After degloving the skin hematoma was evacuated and the tears were repaired in all the cases with 3-0 absorbable suture. Postoperative recovery was uneventful in all patients and they were discharged with advice to avoid sexual intercourse for one month. In our series postoperative complication rates were found to be lower than those reported in the literature. When the series of 300 patients reported from Tunisia is assessed, 5% of patients had concomitant urethral injury (8), whereas the rate of bilateral rupture of 10% has been reported and the rate of the presence of concomitant urethral ruptures was 18-38% according to the outcomes of the studies from the United States and Canada (5, 9). In our series 3(3.09%) patients had concomitant urethral injury and 9 (9.27%) had bilateral corpus cavernosum rupture. Results of our study near to the results of their study for concomitant urethral injury but the rate of bilateral corpus cavernosum rupture is lower than other studies reported in literatures. Outcomes of the studies from the Middle East countries showed success rate of early repair around 92-100% (10, 11). In series from Spain, Germany-Croatia and Switzerland, the early repair success rate was around 80-95% (12, 13,14). Serdar

Çelik et al from Turkey showed success rate was (86.4%) in their series (15). In our series 91 patients (93.42%) showed successful repair which is near similar to the results of other studies. In our patients we always use degloving method. Postoperative erectile dysfunction was observed in 4 patients (4.12%) and all patients those developed ED, age was more than 50 years and had fracture bilateral corpora cavernosum involvement. postoperative IIEF-ED value and mean erection hardness grades also contribute to the early surgical success, when compared to the values before the fracture. In our series before fracture IIEF-ED Domain Scores was 28.3 and after operation it was 24.6. Erection hardness grade before injury was 4.60 and post operatively 4.1, here. There was no statistically significant difference between the preoperative and postoperative values ($p > 0.05$). All patients should be informed before repair regarding chance of development of erectile dysfunction depending of findings. Penile curvature developed postoperatively in 2 patients (2.06%) and all 2 patients had bilateral corpora cavernosum involvement. None of the patients developed voiding dysfunction.

Table II : Results

Successful repair	91 patients (93.42%)
Erectile dysfunction	4 patients (4.12%)
Penile curvature	2 patients (2.06%)

Conclusion:

Early repair with degloving approach is effective method in sexual intercourse-induced penile fracture for satisfactory outcome. Early repair also helps postoperative erectile success in young patients with isolated unilateral fractures with minimal complication like postoperative curvature.

Financial Disclosure: This study has received no financial support.

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