

Diagnosis and Management of the Fracture of the Penis - a seven year experience at Jinnah Hospital, Lahore

S S A JAFRI K H GONDAL M N CHUGHTAI

Department of Urology, Allama Iqbal Medical College/Jinnah Hospital, Lahore
Correspondence to Dr. Syed Saleem Abbas Jafri, Assistant Professor of Urology

Objective: To establish that management of penile fractures by operative repair of corporeal tear is safe and effective because operative repair speeds recovery and lessens the chance of erectile deformity or dysfunction. **Design:** A prospective study. **Place and duration of study:** This study was conducted in the department of Urology of Allama Iqbal Medical College/Jinnah Hospital, Lahore from December, 1995 to October 2002. **Material and Methods:** Twelve patients with fracture of penis have been treated in this department during the last seven years. Their mean age was 38 years (range 21-53) and 58% of the injuries resulted from coitus. All these patients underwent immediate surgical exploration, which included degloving of the penis, evacuation of the haematoma and closure of the corporeal tear. **Results:** During the follow up period, all patients reported firm and straight erections. Postoperatively, there was no infection, haematomas or complaints of a lack of penile sensation. The patients did not report any disturbances in sexual function. **Conclusion:** We conclude that operative management of fractured corporeal body is safe and effective.

Keyword: Penile fracture, penile rupture penile injuries.

Penile fracture has been defined as a rupture of the tunica albuginea of the corpus cavernosum. The most common etiology is direct blow to the erect penis during intercourse or masturbation¹. Erection changes the flaccid penis into vulnerable rigid organ in which the thick tunica albuginea becomes very thin and prone to fracture². Angulation or compression of the erect penis shaft will result in an increase in the intercavernous pressure to levels that might exceed the tunical strength and results in its rupture³. This harmful angulation usually occurs during intercourse⁴, masturbation or nocturnal unconscious manipulation⁵.

Pathologically, the lesion consists of a tear in the tunica albuginea of the corpus cavernosum or spongiosum. The bleeding results in the formation of hematoma, and distortion and discoloration of the penis, the extent of which depends on the size of the tear⁶. The patient often recalls hearing-crackling sounds followed by collapse of the erection and at times intense pain locally. These may be a urethral bleeding indicating associated urethral injury^{6,7}. The tunical defect may be palpable once the hematoma resolves⁷.

The optimal management of the patients with penile fracture is not definite. Both operative and non-operative treatment alternatives have been proposed^{2, 8,9,10,11}. Proponents of non-operative management state that penis will heal satisfactorily with bed rest, ice packs and abstinence. On the other hand, proponents of operative treatment assert that immediate surgical exploration will ameliorate the possibility for residual curvature and decrease the time for convalescence. This study presents our experience in the management of 12 patients with fracture of penis.

Materials and methods

Between December, 1995 and October 2002, 12 patients were admitted in the department of urology, Jinnah

Hospital, Lahore with the diagnosis of fracture of the penis. Their ages ranged from 21 to 53 years (mean 38 years). The aetiology of the fracture is shown in the table I. In 7 patients the injury occurred during sexual intercourse, in 2 during masturbation, in 1 from falling out of bed, and in 1 just rolling over in bed and in 1 patient aetiology was unknown.

The diagnosis was made by history and physical examination made the diagnosis. The common presenting complaint was a painful swollen penis noted after intercourse. Six patients described the classical cracking sound at the time of injury. Physical examination of the penis demonstrated areas of ecchymosis confined to Buck's fascia and an increase in the circumference of the shaft of the penis in almost all patients. Retrograde urethrogram was done in only one patient in whom urethral injury was suspected. Cavernosograms were not done in our patients. All these twelve patients underwent immediate surgical exploration. An informed consent explained the potential broad-spectrum antibiotics. After the insertion of foley catheter, a circumferential sub coronal incision was made followed by degloving of the penis to its base. The hematoma was evacuated and the tunical tear was identified. The tear was repaired with 4/0 vicryl. In one patient with a urethral injury, the mucosa was closed primarily with interrupted 4/0 catgut and spongiosa with interrupted 4/0 vicryl. The penis was regloved and penile skin was reapproximated. No drains were placed but a pressure dressing was applied in all patients. Antibiotics were routinely given postoperatively. Finally, during hospital stay, onset of any postoperative complications and progress of patients on follow up in the outpatient were recorded.

Results

The patients ranged in age from 21 to 53 years (mean 38). All these 12 patients were treated by immediate surgery

using the standard technique detailed earlier. The time between occurrence of penile fracture and presentation to our ward varies between penile injury and operation was 28 hours (range 5 to 86 hours). Table 2 describes the anatomical sites of the various tunical tears.

All the twelve operated patients experienced early resolution of swelling and correction of deformity after surgical repair. The mean hospital stay was 4 days (range 2-6). There was no immediate post-operative complication. However, one out of 12 patient had wound infection that healed by secondary intention, leaving a cutaneous scar at the incision site.

Follow up ranged from 6 months to 3 years. During follow up period, routine physical examination was done in all patients and they were inquired about any penile deformity and potency. During the early follow up period all the patients had painful erection, as would be expected. There was minimal penile deviation in five patients. But the potency was not affected in these patients. Neither the painful erection nor the penile deviation continued to bother patients. All these twelve patients regained normal erection with full sexual activity within two to five months (mean 3 months and did not report any disturbances in sexual function).

In our study, one patient with urethral injury continued to complain of progressive difficulty on micturition. Retrograde urethrogram was done in this patient who revealed a stricture urethra. This patient was again admitted and his stricture was treated by internal urethrotomy. Later on, this patient voided with a forceful stream, complaining of neither penile deformity or potency problems.

Table 1. Aetiology of fracture of the penis.

| Aetiology | n= | %age |
|---------------------|----|--------|
| Sexual intercourse | 07 | 58.33 |
| Masturbation | 02 | 16.66 |
| Falling out of bed | 01 | 08.33 |
| Rolling over in bed | 01 | 08.33 |
| Unknown | 01 | 08.33 |
| Total | 12 | 100.00 |

Table 2: operative finding in 12 patients with penile fracture.

| Aetiology | n= | %age |
|------------------------------|----|------|
| <i>Tunica tear laterally</i> | | |
| Right corpus | 07 | 58 |
| Left corpus | 05 | 42 |
| <i>Site</i> | | |
| Proximal | 06 | 50 |
| Mid shaft | 03 | 25 |
| Distal | 03 | 25 |
| Associate urethral injury | 01 | 08 |

Discussion

The fracture of the penis was first described by Malis in 1925. This is an unusual and probably under reported injury. In 183 publications, 1331 cases of penile fracture

were reported between January 1935 and July 2001. Most reports were from the Mediterranean region¹². The age of the patients with penile fracture discussed in the literature ranges from 26-41 years^{5,6,12,13,14}. The average age in our series 38 years falls within this range. The commonest causes of penile fracture reported in the literature are coitus and penile manipulation especially masturbation^{1,5,12,13}. In our study, the majority of the cases occurred during sexual intercourse and the incidence of 58% in this series corresponds with that of 58% reported by Nicolaisen and associates and others^{12,14}.

In our study, the diagnosis was made on the history and physical examination and was confirmed upon exploration. Some authors in order to diagnose and lateralize the rupture of the corpus cavernosus had advocated Cavernosography,¹⁵ while others discourage its use⁵. Our own experience has supported the latter view. Ultrasonography has been suggested as a non-invasive alternative, but we have no experience with it^{16,17,18}.

The frequency of urethral injuries associated with fracture of the penis ranged from 20 to 38% of cases^{2,14,17,18}. In our study, one urethral injury was documented (8%). El-Shefir and co-workers⁵ noted the similarly low incidence in their study to the high incidence of non-coital fracture, whereas Tan and associates reported a similarly low incidence despite a high percentage of coital fractures in their series. It is therefore not clear what predisposes to urethral injuries in association with fractured penis^{19,20}. In our study, urethral injury was suspected in only one patient who was confirmed by retrograde urethrogram. This supports the view the urethrography should be performed for suspected urethral injury and not for all cases of urethral injury.

It has been customary to treat fracture penis non-operatively by providing pain relief and pharmacological suppression of the erection. Most surgeons because of its high complication rate, reaching 25% to 53%²¹ have now abandoned this conservative management practiced by some workers in the past^{8,21}.

In our study, all 12 patients were managed by early operative intervention. Some workers⁵ advocate the use of a direct incision for basal tears, while subcoronal circumferential incisions have been used for distal tears. Others⁷ recommend the use of direct incisions for recent trauma and subcoronal for cases with large hematomas. All 12 patients in our series had subcoronal circumferential incisions with degloving of the penis. In view of the fact the diagnosis was made on clinical grounds, as well as the diversity of localization of the tear, we feel that it was preferable to expose the corpora cavernosa and repair any gaps in the albuginea which might be wider or more irregular than suggested by physical examination before surgery. Although non-absorbable suture is recommended in the repair of tunical tears²² many surgeons have reported use of absorbable sutures^{5,6,7,13}. In the current study vicryl was used in all patients with out significant sequelae.

Another area of controversy is whether or not a urethral catheter should be inserted. Some authors recommending its routine use while others prohibiting such insertion^{5,23,24}. In the present study, a urethral catheter was inserted preoperatively after exclusion of any associated urethral injury and postoperatively in all patients. The urethral catheter helped the intra operative dissection without harming the urethra. Moreover, urethral catheterization helped the application of a pressure dressing. There was no harmful effect as a result of such insertion.

Some authors advocate the need for postoperative suppression of penile erections which diazepam or estrogen¹⁰ but its was declared unnecessary by other workers^{5,13}. We did not use such drugs in our study and our patient did not experience any complication related to postoperative erections. The excellent results achieved in our patients who underwent immediate surgical evacuation hematoma and repair of the ruptured tunica albuginea suggest that this is the treatment of choice. We conclude that prompt surgery allows the penis to regain normal anatomical shape and physiological function and minimizes the occurrence of sexual dysfunction.

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