EARLY SURGICAL INTERVENTION IN PENILE FRACTURE

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ABSTRACT

Objective: To know the mechanism of injuries resulting in penile fractures and the results of early surgical intervention in these cases.

Material and Methods: 24 consecutive patients who presented with a history of blunt penile trauma and clinical signs and symptoms indicating penile fracture during a period of 03 years i.e. from Jan 2000 to December 2002, were included in the study. All of them underwent an emergency operation within 6 hours to 4 days after the incident. Vicryl 3/0 was used as a suture material for repair. Patients were followed upto one year.

Results: Among the 24 patients, 18 turned up for follow-up. Fifteen with excellent functional results, while 03 had penile curvature and pain during coitus. These three patients had undergone surgery more than 48 hours after the incident.

Conclusions: Fracture penis is not very rare and manipulation resulting into blunt trauma to the penis was the commonest cause. An immediate surgical intervention is recommended to avoid serious complications.

Key words: Fracture penis, Early surgical intervention, Vicryl.

INTRODUCTION

Sporadic reports of penile fracture gives the impression of a rare trauma[1,2], but it is probably under reported.[3] As recently many authors have reported series of considerable numbers[4]. The true incidence is unknown, but in 183 publications 1331 cases were reported between Jan 1935 to July 2001 with most reports from Mediterranean region[5].

Fracture of the penis is defined as a rupture of the Tunica albuginea of the corpus cavernosum. The usual cause is abrupt bending of the erect penis by blunt trauma, thus excluding penetrating trauma and injury to the flaccid penis[6]. Erection

converts the flaccid penis into a vulnerable rigid organ, where the thick tunica albuginea (2mm) becomes very thin (0.5 - 0.25mm) and prone to fracture[2]. Angulation or compression of the erect penis shaft results in an increase in intracavernous pressure to a level which exceeds the tunical tensile strength and results in its rupture[7]. The common causes include coitus[8,9,10], masturbation and nocturnal unconscious manipulations[11,12]. Pathologically the lesion consists of a tear in the tunica albuginea, resulting in bleeding, hematoma formation, distortion and discoloration of the penis[6]. There may be an associated injury to the corpus spongiosum or urethera[13]. The extravasation of blood and / or urine may extend to the scrotum, the perineum and the inguinal region, if Buck's fascia is torn[11,14]. The patient may recall hearing a cracking sound followed by detumescence of the erect penis and severe pain, followed by hematoma formation, bruising, swelling and deformity of the penis. Urethral bleeding indicates an associated urethral injury[6,13]. A palpable tunical defect and a hematoma with a "rolling sign" are usually pathognomonic[15]. Cavarnosography[16,17], Ultrasonography[18,19] or even MRI[20,21] have been used for diagnosis. Ascending urethrography is recommended in suspected urethral injury[22,23].

We present here our experience in the management of 24 patients with penile fracture in our unit over the last 03 years.

MATERIAL AND METHODS

Between Jan 2000 and December 2002, 24 patients were admitted with penile fracture. Patients characteristics were documented by taking a careful history including age, marital status, the activity culminating in the incident and the interval since the injury. Physical examination included the extent of penile hematoma, blood at the external meatus and side of penile curvature. An ascending urethrography was performed only in patients with blood at the meatus. A standard operative management technique was adopted in all these patients. A 16F uretheral Foly's catheter was placed to prevent inadvertent uretheral damage during exploration. A circular subcoronal incision was used followed by degloving of the penis to its base. The hematoma was evacuated and the tunical tear was repaired with 3/0 vicryl interrupted sutures, while the skin was closed with 3/0 catgut. No drains were used but a pressure dressing was applied. Prophylactic antibiotics were given to all patients, starting pre-operatively, while anti-inflammatory drugs were given post-operatively. The urethral catheter was removed after 24 hours and patient was discharged 2-3 days post-operatively. Post-operative complications, hospital stay and progress of the patient on follow-up visits in the outpatient were recorded. Follow-up continued until restoration of normal penile function without complaints, including penile deformity, potency and painful coitus (average 3 months).

RESULTS

During this 03 years period between Jan 2000 to December 2002, 24 patients with penile fracture were admitted in our unit. The mean age was 34 years (range: 18 to 54 years). Among these 19 patients were married and interestingly two were going to get married within next one month. The most common cause was manipulation in our series (19 patients), i.e. the patient awakened with an erect penis which he forcibly and manually deflected. Other causes included sexual maneuvers, masturbation and a fall onto the erect penis (see table). Characteristically all patients heard a cracking sound associated with a sharp pain, loss of erection, deformity, discoloration and swelling. Blood was present at the external meatus only in 3 patients .Ascending urethrography revealed no extravasation. Average interval

PATIENT CRITERIA

Age:

Age (years)	Number of Patients
< 20	01
20 – 50	21
> 50	02

Marital Status:

Married – 18

Unmarried – 06

Cause:

Cause	Number of Patients
Sexual Maneuvers	02
Manipulation	19
Fall to floor during coitus	01
Fall onto erect penis	02

Site of Injury:

Rt. Dorsolateral distal penis – 16

Lt. Dorsoleteral distal penis – 08

Complications:

Penile Corvature – 02

Pain during coitus – 01

Minor wound infection – 02

to presentation was 18 hours. The delay time between the incident and the surgery ranged from 6 – 96 hours. In 20 patients the tunica albuginea of corpora cavernosa in the proximal one third of the penis was torn, while midshaft was torn in 3 patients and distal one third in one patient. But the corpus spongiosum was intact and no urethral damage was noted. The tear in the tunica albuginea was unilateral and transverse in all the cases.

There were no significant early postoperative complications, with good wound healing and no skin necrosis. Minor wound infection occurred in 02 patients, which healed by secondary intention leaving a scar at the incision site. Hospital stay ranged from 02 – 05 days (average 3.5 days). Out of 24 patients, who underwent surgery for penile fracture, 18 turned up for follow-up. In 16 patients the follow-up period was limited i.e. 01-02 months (average for all patients 03 months), with no need of re-admission or corrective surgery. Six patients were lost to follow up. During the early follow-up period all the patients had painful erection, as would be expected. Among the 18 patients who turned up for follow-up, 15 had a normal penis on erection with excellent functional results, while 02 had a mild curvature and one had pain at the repair site during erection. All these 03 patients had undergone surgery more than 48 hours after the incident. Patients with penile curvature had no difficulty with coitus and did not seek any treatment, but the cosmetic appearance was altered. The patient with painful repair site reported tolerable pain that occurred only in the erect penis and had no problems with coitus and no treatment was required. All the patients were potent.

DISCUSSION

Penile fracture is a moderately common injury that is easy to diagnose, but there is some controversy regarding the investigations and the therapeutic approach. The mean age in our series was 34 years. This falls within the range reported in the literature[6,11,24,25]. Manipulation was the commonest cause of fracture penis in our study (79.1%), while it was related to sexual maneuvers only in 02 patients (8.3%), which is similar to the 9.5% reported by EL-Sherif et al[11] from a Gulf state and 3.1% reported by M.A. Asgari et al [26] from Tehran, Iran, but varies greatly with the 57% and 58% reported by El-Fadil et al[27] and Nicolaison et al[24] respectively. The former has also reported a patient who had a penile fracture twice in five years.

Routine pre-operative cavernosography has been strongly recommended by some

authors to demonstrate the site of injury and to aid in planning the surgical approach[28,17,29,30,31]. They also argue that some patients with the classical symptoms and signs of penile fracture may not have a tear on cavarnosography and that the gap in the tunica considered to be pathognomonic of fracture may not be easily felt[6]. On the other hand others discourage its use unless the diagnosis is in doubt[11,32,9]. Hiner A[33] has reported a case where cavernosography was complicated by post-procedural priapism. Our own experience would support the latter view as none of our patient underwent cavernosography. Ultrasonography has also been suggested as a non-invasive alternative[19], but we have no experience with it.

The incidence of urethral injuries associated with penile fracture ranged from 20 – 38% of the cases in previous reports[8], but in our series it was found in none. The absence of associated urethral rupture in our series seems to be due to high incidence of manipulation injuries. As the trauma that occurs during manipulation is much less severe than with injury caused by fall or during sexual maneuvers. Probably the cause of the urethral bleeding in 03 cases was a mucosal injury. The same view has been reported by El-Sherif et al[11] and El-Fadil et al[27]. On the other hand Tan LB et al[25] also reported a low incidence of associated urethral injury despite a high percentage of coital fractures in their series. It is therefore not clear what pre-disposes to urethral injuries in association with fracture penis. This low incidence of associated urethral injuries supports the view that urethrography should only be performed for suspected urethral injury[11,14,24] and not for all cases of penile fracture.

All our patients were managed by early operative intervention. The conservative management advocated by some workers in the past[34,35], has now been abandoned by many surgeons because of its high complication rate reaching 25 – 53%[36,37] and majority now support the necessity for immediate surgery [38,9,39,33,40,41,42,43,44,45]. In our series two patients with a residual fibrous area and a slight deviation of the penis during erection were among the group of patients in whom the surgical intervention was late, though regular sexual function was possible. The aim of immediate surgery is to avoid formation of the fibrous tissue that causes penile curvature, achieve good cosmetic results, shorter hospital stay and prevent possible penile deformity. With lesions diagnosed soon after injury the hematoma was limited but with late presentation and delayed treatment the hematoma had spread to the scrotum, perineum and groin.

The surgical approach is by a subcoronal circumferential[9,10] or dorsal longitudinal incision. A simple dorsal longitudinal incision[15,46] may be sufficient for a recent simple lesion with limited hematoma and edema, but the site of injury must be identified by palpating the penile shaft between the thumb and the index finger. To identify the site of lesion, cavarnosography may be performed. In the present series, all the patients had subcoronal circumferential incisions with degloving of the penis. In view of the fact that the diagnosis was based on clinical findings, as well as the diversity of localization of the tear, we felt that it was preferable to expose the corpora cavernosa and repair any gap in the tunica albuginea which might be wider or more irregular than suggested by physical examination before surgery. Also all of our patients had a previous circumcision scar and we felt that it was more cosmetic to perform the incision at the site of the scar. In fact in a large reported series i.e. 172 cases of penile fracture, Zargooshi J et al[47] used circumferential incision. Although non-absorbable suture is recommended in the repair of tunical tear[48], many surgeons have reported the use of absorbable sutures[6,11,13,25]. In the current study vicryl was used in all

cases without significant sequelae. The insertion of a urethral catheter preoperatively is still controversial with some advocating its routine use[6,14,36], and others prohibiting its insertion[22]. In the current study a urethral catheter was inserted pre-operatively after exclusion of any associated urethral injury, and it helped the intra-operative dissection without harming the urethra, facilitated the application of a pressure dressing and prevented wound contamination post-operatively. There was no harmful effect of catheter insertion, which was removed after 24 hours.

There is also lack of consensus on the need for post-operative suppression of penile erection with diazepam or estrogen routinely used in some studies[36,49,27], but declared to be unnecessary in other reports[25,26]. In the present study we did not use any of these drugs because the dosage of diazepam required for flaccidity causes pronounced somnolence as a side effect[50].

CONCLUSION

Fracture of the penis is not very rare and is easily diagnosed by proper history and physical examination. If there is doubt, the diagnosis should be confirmed by cavernosography. A urethrogram should be performed on patients with suspected urethral injury. An early surgical repair of the tunical defect seems to give excellent results, i.e. early resumption of sexual activity, with less likelihood of fibrous tissue formation, chordae, painful erection and psychological, social and medicolegal problems.

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