

Early Management of the Fractured Penis: A Report of 16 Cases

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ABSTRACT

INTRODUCTION: The purpose of this retrospective study was to review the effect of early surgical exploration and repair of penile fractures. The authors report the overall healing of these injuries and the patient's ability to regain erectile function.

METHODS: The participants were 16 patients with a fractured penile shaft following blunt trauma to the erect penis. Data were gathered over a period of 36 months. Retrograde urethrography was done in all cases. All patients were treated by early surgical repair within 24 hours of the injury.

RESULTS: Associated urethral injuries were found in 3 out of the 16 patients (18.75%). These patients had bleeding from the urethra at presentation. Seven patients had tears in the tunica albuginea only; the 9 remaining patients also had disruption of the corpus cavernosum. All tears involved the distal two-thirds of the penile shaft. The wounds healed successfully. All patients reported normal psychogenic, reflexogenic, and nocturnal erections with full sexual activity at 3-month and 6-month evaluations after surgery. Results of pharmacocavernosometric testing showed that all patients had rigid erections that occurred within 3-10 minutes and lasted for more than 30 minutes.

CONCLUSION: The authors recommend early surgical repair of penile fractures because of short hospitalization, successful healing, and early return to full sexual activity.

KEYWORDS: Penile fracture; Erectile function; Management; Prognosis

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INTRODUCTION

The erect penis is very vulnerable to blunt trauma [1-4], which may be sustained during sexual intercourse or through vigorous manipulations during masturbation or other violent sexual activities [3]. The blunt trauma diagnosis is usually evident from the history of the specific incident as well as on physical examination [2]. Patients usually hear a loud cracking noise at the moment of the injury and present with penile pain and hematoma [4].

Ruckle et al [5] found that 20% of patients with a fractured penis had urethral injury. In other reports [6,7], the incidence of associated urethral injury ranged from 14% to 33%. Therefore, retrograde urethrography should be done for all patients before operative repair, to identify or rule out associated urethral injury. This evaluation is mandatory in cases with urethral bleeding at the time of presentation.

Long-term consequences of blunt trauma to the erect penis include erectile dysfunction [6-8]. The aim of the present retrospective study was to review the effect of early surgical

exploration and repair on the overall healing of these injuries and to determine the maintenance of erectile function.

METHODS

Participants

The participants were 16 patients with a mean age of 32 years (range, 18-54 years). The patients presented with a fractured penile shaft following blunt trauma to the erect penis. Data were gathered over a period of 36 months.

All patients presented within 24 hours of the injury. On admission, 15 patients gave a clear history of having sustained blunt trauma to the erect penis; 9 injuries occurred during intercourse and 6 injuries occurred during vigorous penile manipulations. The remaining patient was a single man who claimed to have discovered swelling and discoloration of his penis upon awakening in the morning. He denied any history of trauma. Of the 16 patients, 7 heard a snapping sound, 6 heard a crack, and the remaining 3 did not hear any sound at the time of injury.

Procedures

All cases were initially managed with analgesics and cold fomentations to control the pain and progression of the local hematoma. Antibiotics were given to prevent infection.

Retrograde urethrography was done in all cases under strict aseptic precautions to reveal any associated urethral injuries prior to exploration. All cases were explored within 24 hours of the injury.

The surgeons performed a circumferential subcoronal incision and degloved the penile skin. They then evacuated the hematoma, identified any local tears in the tunica albuginea and corpus cavernosum, and explored any associated urethral injury.

Associated urethral injuries were repaired over a catheter with the synthetic absorbable material polyglactin 910 (Vicryl 5°; Ethicon Inc, Somerville, NJ). The tunical-corporeal tear was closed with nonabsorbable nylon or polypropylene mesh (Prolene 4°; Ethicon Inc, Somerville, NJ). The tear was stitched with inverted knots to avoid irritation to the patient's future erections. The skin was closed with absorbable material (Vicryl 4°) without drains.

Postoperatively, antibiotics were continued for 5 days. Analgesics were prescribed as needed. The urethral catheter was removed after 2-3 days if there was no urethral injury and after 7-10 days if injury was present. The patients were

discharged 1 day after the catheter had been removed, provided that they voided well.

All patients were seen at the outpatient department after 2 weeks to review the wound. Subsequent evaluations at 3 and 6 months included cavernosometry [9] to evaluate the erection. The physicians used prostaglandin E1 (10ug) which was injected via a 19-gauge needle.

RESULTS

Concomitant urethral injuries were found in 3 of the 16 patients, as confirmed by retrograde urethrography. These patients had bleeding from the urethra at presentation. Seven patients had tears in the tunica albuginea only; the 9 remaining patients also had disruption of the corpus cavernosum. All tears involved the distal two-thirds of the penile shaft.

The average hospital stay was 5 days. When reviewed at the outpatient clinic after 2 weeks, the skin wounds of all patients had healed well; only 2 patients showed minimal residual swelling. There were no incidences of wound infection.

All patients reported normal psychogenic, reflexogenic, and nocturnal erections with full sexual activity at the 3-month and 6-month evaluations after surgery. Results of pharmacocavernosometric testing showed that all patients had rigid erections that occurred within 3-10 minutes and lasted for more than 30 minutes. The maximum intracavernosal pressure reached 120-150 mmHg in all patients. The maintenance flow needed to maintain the intracavernosal pressure averaged 3 mL/min (range, 0-5 mL/min). The pressure loss after cessation of saline infusion averaged 30 mmHg (range, 6-47 mmHg) over 30 seconds.

DISCUSSION

Fractures may occur in the erect penis as a result of sexual intercourse or vigorous manipulation during masturbation or other violent activities [3,4]. The fractures may result in the rupture of the corpora cavernosa by blunt trauma that may occur during sexual intercourse, when the corpus is impacted against the pubic bone of the partner [10]. Accidents such as rolling out of bed and striking a wall, hitting a toilet seat, being thrown against the knob of a saddle, rolling out of a chair onto the floor, or trying to put the erect penis into the pants may also result in a direct trauma [11].

In the present study, 60% of the patients reported that the fractured penis occurred during sexual intercourse and 40% of the patients gave a history of vigorous penile manipulations. Diagnosis was established from the history and physical

examination. In other reports, penile fracture was diagnosed by physical examination and occasionally confirmed by cavernosography [12]. The classic pathological injury to the erect penis is tunical rupture which is usually transverse and most commonly involves the distal third of the penis [11]. In the present study, the tunical rupture involved the distal-two thirds of the penis.

Associated urethral injuries were found in 3 (18.75%) of the 16 patients. Ruckle and his colleagues [5] found urethral injury in 20% of patients with fracture penis. In other reports [12,13], the incidence of associated urethral injury ranged from 14% to 33%.

Blunt trauma to the erect penis leads to a short-term marked increase in the intracavernous pressure that approximates or exceeds the tunical tensile strength [11,12]. These supraphysiological pressures result from the redistribution of corporeal blood to the nonloaded portions of the erect penile shaft. Such pressure elevations cause a spectrum of injuries to the tunica albuginea and the intracavernous vasculature. They resulted in midshaft cavernous artery occlusion in 28% of the patients studied by Penson et al [13]. These injuries, when treated promptly with immediate surgical exploration and repair, usually heal well without any long-term consequences such as erectile dysfunction [11,14-19].

In the present study, management of penile fracture included subcoronal circumferential incision and immediate repair of the tunical rupture with evacuation of any hematoma or associated intracavernous bleeding. Although some surgeons advocate the use of an upper scrotal incision with eversion of the penile skin, the present authors found that the circumferential subcoronal incision with degloving of the penis was very satisfactory. It provided excellent exposure of the site of the injury, the urethra, and both corporal bodies.

Conservative management of penile fractures has been used by some authors. However, 10% to 53% of the patients reported long-term complications of shaft deformity, suboptimal erections, and/or difficulty with coitus [16]. Moreover, the results of follow-up cavernosometric testing were abnormal in these patients [11]. The clinical results and normal pharmacocavernosometric values in the present patients indicate that the fractured penis is best treated by early surgical exploration and repair. Surgery is a safe and effective way to restore erectile function that is satisfactory for all patients and their partners. These encouraging results and the results of previous studies [20-22] suggest that surgical intervention is strongly recommended.

CONCLUSION

The authors recommend early surgical exploration and repair of penile fractures because of short hospitalization, successful healing, and early return to full sexual activity. Surgery helps to minimize the incidence of erectile dysfunction as a long-term complication.

Conflict of Interest: none declared

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