ORIGINAL ARTICLE

RESULTS OF IMMEDIATE REPAIR OF PENO-URETHRAL INJURIES

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ABSTRACT

Background: Peno-urethral injuries are common in young persons. This study was conducted to know the results of immediate surgical repair in these patients.

Patients and Methods: The study was conducted at Department of Urology, Bolan Medical College, Quetta, Pakistan, from January 2000 to December 2006. Forty-four patients were admitted during this period having penile fracture with associated urethral injury. Four mild cases were treated conservatively. Forty patients were operated as emergency cases within 2 to 72 hours of injury and followed up at 3 months and 2 years.

Results: The mean age of the patients was 32 years, 26 (59%) were married and 18 (41%) un-married. Thirty (68.19%) cases occurred during sexual intercourse and 14 (31.81%) cases due to non-coital causes including masturbation, forceful manipulation and trauma.

Out of the 40 patients undergoing immediate surgical repair, 36 (90%) showed neither erectile nor voiding dysfunction while only 4 (10%) had only mild penile curvature and pain during coitus.

Conclusion: Immediate surgical repair of traumatic peno-urethral injuries results in regaining complete penile and voiding function.

Key words: Urethra, Penis, Rupture, Surgical repair.

INTRODUCTION

Penile fracture is common in young persons and associated urethral injury occurs in 10% of these cases.[1] At presentation, the patients have severe penile pain and hematoma.[2] It comprises disruption of the tunica albuginea of one or both corpora cavernosa following severe injury to an erect penis.[3] The most common causes are blunt trauma during sexual intercourse, masturbation, unconscious nocturnal penile manipulation or a fall onto the erect penis.[4] Total avulsion of the penile skin with cavernosal injury occurs from machinery injuries.[5] The reason why rupture of the albuginea occurs only during erection lies in the fact that in the normal flaccid condition penis occupies a position which is well protected against blows or blunt trauma.[6] During erection, the tunica albuginea thins from 2 mm to 0.25-0.5 mm and thus it is more susceptible to traumatic tearing.[7] Penile amputation is seen occasionally in lunatic patients and the penis can be surgically replaced by micro surgical techniques.[8] Prompt diagnosis and immediate surgical repair allows complete resumption of sexual activity and gives a lower incidence of penile curvature and stricture urethra, secondary to blood clot absorption and fibrous tissue formation. Obstructing rings placed around the base of the penis may also cause gangrene and urethral injury.[9] These objects must be removed immediately without causing further damage. At times the corporeal tear is very large and in patients with concomitant lesions involving the urethra, surgical repair can become difficult and require particular technical shrewdness. Immediate surgical correction of both corpus cavernosum and urethra is mandatory for the prevention of late sequel following injury.

The aim of this study was to evaluate the voiding and erectile functions after immediate surgical repair of traumatic peno-urethral injuries.

PATIENTS AND METHODS

This study was conducted at Department of Urology, Bolan Medical College, Quetta, Pakistan, from January 2000 to December 2006. Forty-four patients were admitted during this period, having penile fracture with associated urethral injury.

Four mild cases were treated conservatively. Forty patients were operated as emergency cases within 2 to 72 hours of the injury. Age, marital status, activity leading to the injury, symptoms and

signs, management and outcome were recorded on a proforma designed for this purpose.

Patients had hematoma, shaft deformity and retention of urine after injury. Foley's catheters (16 Fr) was tried gently to relieve the retention before proper surgical repair and it was successfully passed in three patients and retained in the bladder. After routine blood investigations, ascending urethrogram was carried out. In operation theatre preoperative cystoscopy was performed to assess the site and extent of urethral injuries, followed by operation via a circumferential sub-coronal incision. After evacuation of hematoma with heparinized normal saline, the lesions of albugenia were identified and closed with 4/0 PDS interrupted suture. The lesions in corpus spongiosum and urethra were repaired using a 6/0 polyglactin sutures. In two cases the lesion was very large and reconstruction of the corpora was carried out by means of a split thickness dermal graft harvested from the thigh. A urethral Foleys catheter (18 Fr) was placed before stitches of urethra during surgery and repair of urethra was performed with absorbable sutures in order to prevent inadvertent urethral damage and the possibility of future strictures. The sub-coronal skin incision was stitched with interrupted 2/0 chromic catgut. Suprapubic cystostomy was performed at the end of procedure.

Catheter was removed 72 hours after the operation in cases of simple urethral contusion. Patients in whom urethral were reconstructed, the catheter was retained for a week and a cystostomy for 2 weeks. Third generation cephalosporins and aminoglycosides were administered pre and post operatively for a week in all the cases. All the patients were followed up at 3 months and 2 years.

RESULTS

Forty-four patients were admitted during this period having penile fracture with associated urethral injury and retention of urine. Four mild cases were treated conservatively. Forty patients were operated as emergency cases within 2 to 72 hours.

The mean age of the patients was 32 years, 26 (59%) were married and 18 (41%) un-married. Thirty (68.19%) cases occurred during sexual intercourse and 14 (31.81%) due to non-coital causes; masturbation (8/44), a fall on erect penis as a consequence of heavy alcohol intake (4/44) and 2/44 lunatic patients injuring their penises themselves.

There were no significant early post-operative complications and the patients were sent home 7 days following operation. These patients were followed at 3 months and 2 years.

Thirty-six (90%) patients had a normally conformed penis on erection with optimal functional and aesthetic results, while 4 (10%) patients had a mild curvature and pain during coitus due to residual fibrosis. These four were those patients who underwent surgery at 48 to 72 hours after trauma.

All patients were potent as evidenced by pharmacological (prostaglandin) induced erection and patient's inquiry. Erectile function was preserved and there was no penile curvature in 36 cases. Urethrography and cystoscopy demonstrated an excellent urethral healing.

Outcome was excellent and all patients regained complete penile function.

DISCUSSION

In a literature review a large number of cases of penile injury 10% of these had an associated urethral injury. Majority of workers prefer immediate operative repair to avoid long-term sequelae such as penile deformity, infected hematoma and impotence.[10,11,12] If signs such as blood at the urethral meatus or scrotal hematoma are present, a retrograde urethrogram needs to be performed to evaluate for urethral injury.[13] Preoperative cavernosography can be performed in cases with limited hematoma or ecchymosed penile skin because the extent of the lesion in corpora cavernosa is not always comparable to the physical signs.[14] We observed one case of urethral rupture and two cases of a large albuginea tear (more than 2 cm) with only a limited hematoma and slight penile swelling. Ultrasound examination can reveal the albuginea defect when the subcutaneous edema and hematoma are limited. When a urethral rupture is suspected following urethral bleeding or an inability to urinate, a preoperative cystoscopy is mandatory for the correct diagnosis in all cases.[15] Unlike urethrography, this maneuver can be performed during operation with a sterile technique avoiding surgical field contamination and a wastage of time. We recommend immediate explorative surgery in the presence of evident physical signs of major hemorrhage and penile deformity because ultrasound diagnosis is difficult in these patients due to the pronounced subcutaneous blood and edema.[16] In these conditions a corpora albuginea tear is present in 100% of patients. Prompt surgery gives better aesthetic and functional results, as evidenced by only four patients in our series with post-operative mild curvature who were operated on 2nd and 3rd day. Penile and urethral surgery is important when a lesion is severe or associated with urethral injury. Surgery prevents post-operative complications such as shaft curvature, corporal narrowing or urethral strictures.[17] When a corporal lesion is associated with urethral

injury, great care must be taken to avoid contact between the severed spongious tissue and corporal tissue in order to obviate the risk of post-operative impotence as a consequence of a spongio-cavernous fistula.[18, 19]

CONCLUSION

Immediate surgical repair of traumatic peno-urethral injury results in regaining complete penile and voiding functions.

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