Abstract: Traumatic injuries to the genitalia are uncommon, in part because of the mobility of the penis and scrotum. Penile fracture is the disruption of the tunica albuginea with rupture of the corpus cavernosum. Fracture typically occurs during vigorous sexual intercourse, when the rigid penis slips out of the vagina and strikes the perineum or pubic bone, producing a buckling injury. The diagnosis of penile fracture is often straightforward and can be made reliably by history and physical examination. Immediate surgical reconstruction results in faster recovery, decreased morbidity, lower complication rates, and lower incidence of long-term penile curvature.

Keyword: penile fracture, tunica albuginea, sexual intercourse, clinical exam

A CASE OF FRACTURE PENIS WITH TOTAL DISRUPTION OF URETHRA

45 yr old male came with complaints of swelling, deformity, pain in the shaft of penis, inability to pass urine of 6 hrs duration following sexual intercourse. On examination, there was diffuse swelling, deformity, tenderness present in the shaft of penis, blood at the urethral meatus present, bladder palpable, vitals stable. Investigations–complete blood count, renal function test, BT, CT found normal. He underwent emergency surgical exploration of penis under spinal anaesthesia.

Intraoperative findings:

A CASE OF FRACTURE PENIS WITH TOTAL DISRUPTION OF URETHRA

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Intraoperative findings
fig 1: upward curvature of the penis

fig 2: sub coronal incision shows fracture involves tunica albuginea, both corporal bodies and urethra with hematoma

fig 3: After evacuation of clots and wash with saline, foley’s catheter introduced upto distal cut end of urethra.

fig 4: Urethral suturing (ventral to catheter) done, then catheter advanced proximally, and foley’s bulb inflated and clear urine drained, urethral suturing completed dorsal to catheter also with 4/0 vicryl as interrupted sutures. Corpora cavernosa [both] sutured with prolene as interrupted sutures. Skin with 3/0 catgut (absorbable suture) followed by circumcision.

fig 5: at the end of surgery Postop period uneventful Discharged after 1 week with catheter, Catheter removed after 2 weeks.

fig 6: postop picture

DISCUSSION

Traumatic injuries to the genitalia are uncommon, in part because of the mobility of the penis and scrotum. Blunt phallic traumatic injury is usually of concern only with an erect penis, when fracture of the tunica albuginea may result. In general, prompt surgical reconstruction of most penile injuries usually leads to adequate and acceptable cosmetic and functional results.

Etiology

Penile fracture is the disruption of the tunica albuginea with rupture of the corpus cavernosum. Fracture typically occurs during vigorous sexual intercourse, when the rigid penis slips out of the vagina and strikes the perineum or pubic bone, producing a buckling injury. The tunica albuginea is a bilaminar structure (inner circular, outer longitudinal) composed of collagen and elastin. The outer layer determines the strength and thickness of the tunica, which varies in different locations along the shaft and is thinnest ventrolaterally.
The tensile strength of the tunica albuginea is remarkable, resisting rupture until intracavernous pressure rise to more than 1500 mm Hg. When the erect penis bends abnormally, the abrupt increase in intracavernous pressure exceeds the tensile strength of the tunica albuginea, and a transverse laceration of the proximal shaft usually results.

Whereas penile fracture has been reported most commonly with sexual intercourse, it has also been described with masturbation, rolling over or falling onto the erect penis, and myriad other scenarios. In the Middle East, self-inflicted fractures predominate; the erect penis is forcibly bent during masturbation or as a means to achieve rapid detumescence, the practice of taghaandan.

The injury is usually unilateral, although tears in both corporeal bodies have been reported. Although the site of rupture can occur anywhere along the penile shaft, most fractures are distal to the suspensory ligament. Injuries associated with coitus are usually ventral or lateral, where the tunica albuginea is the thinnest. Diagnosis and Imaging.

The diagnosis of penile fracture is often straightforward and can be made reliably by history and physical examination.

Patients usually describe a cracking or popping sound as the tunica tears, followed by pain, rapid detumescence, and discoloration and swelling of the penile shaft. If the Buck fascia remains intact, the penile hematoma remains contained between the skin and tunica, resulting in a typical eggplant deformity. If the Buck fascia is disrupted, hematoma can extend to the scrotum, perineum, and suprapubic regions.

The swollen, ecchymotic phallus often deviates to the side opposite the tunical tear because of hematoma and mass effect. The fracture line in the tunica albuginea may be palpable. Because fear and embarrassment are commonly associated, the patient’s presentation to the emergency department is sometimes significantly delayed.

The incidence of urethral injury is significantly higher in the United States and Europe (20%) than in Asia, the Middle East, and the Mediterranean region (3%), probably owing to the different etiology—intercourse trauma versus self-inflicted injury. Most urethral injuries are associated with gross hematuria, blood at the meatus, or inability to void, although the absence of these findings does not definitively rule out urethral injury.

Given that urethral injury occurs infrequently, preoperative urethrography should be considered when urethral injury is suspected. However, because urethrography can be time consuming and inaccurate, intraoperative flexible cystoscopy is now performed routinely just before catheter placement at the time of penile exploration when urethral injury is suspected.

The typical history and clinical presentation of fractured penis usually make adjunctive imaging studies unnecessary. Cavernosography is discouraged in the evaluation of a suspected penile fracture because it is time consuming. Ultrasonography, although noninvasive and easy to perform, has also been associated with significant false-negative studies.

Magnetic resonance imaging (MRI) is a noninvasive and accurate means of demonstrating disruption of the tunica albuginea. Arguments against the routine use of MRI are the expense, limited availability, and time requirements involved with the study. MRI is reasonable in the evaluation of patients without the typical presentation and physical findings of penile fracture.

Another condition that may mimic penile fracture is rupture of the dorsal penile artery or vein during sexual intercourse.

Multiple contemporary publications indicate that suspected penile fractures should be promptly explored and surgically repaired. Although small lateral incisions may be used for localized hematomas or palpable tunical defects, a distal circumcision incision is appropriate in most cases, thus providing exposure to all three penile compartments.

Closure of the tunical defect with interrupted 2-0 or 3-0 absorbable sutures is recommended; deep corporeal vascular ligation or excessive debridement of the delicate underlying erectile tissue must be avoided. Induction of an artificial erection with saline or colored dye may aid in locating the corporeal laceration.

Partial urethral injuries should be oversewn with fine absorbable suture over a urethral catheter. Complete urethral injuries should be debrided, mobilized, and repaired in a tension-free fashion over a catheter. Therapy with broad-spectrum antibiotics and 1 month of sexual abstinence are recommended. In uncircumcised patients, strong consideration should be given to performing limited circumcision at the conclusion of the repair because wide mobilization of the foreskin may place the distal prepucce at risk for ischemia. Outcome and Complications.

Immediate surgical reconstruction results in faster recovery, decreased morbidity, lower complication rates, and lower incidence of long-term penile curvature. Although immediate repair results in penile curvature in less than 5% of patients, conservative management of penile fracture has been associated with penile curvature in more than 10% of patients, abscess or debilitating plaques in 25% to 30%, and significantly longer hospitalization times and recovery.

Timing of surgery may also influence long-term success—those undergoing repair within 8 hours of injury had significantly better long-term results than did those having surgery delayed 36 hours after the fracture occurred.

Reference: