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Case Report

Emergency surgical management of double penile fracture at a peripheral hospital

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ARTICLE INFO

Article history:

Received 13 September 2012

Accepted 29 December 2012

Available online 10 May 2013

Keywords:

Penile fracture

Eggplant deformity

High-frequency sonography

Introduction

Penile fractures are an uncommon surgical emergency. They result from trauma to the erect penis leading to rupture of the tunica albuginea of the penile corpora. Prompt diagnosis and early surgical repair are essential to ensure a successful outcome.¹ We report a case of a young male with penile fracture who presented late to the hospital. Urgent imaging and emergency surgery were undertaken. He was found to have two separate fractures of the tunica which were repaired successfully without any complications. The aim of the report is to highlight the importance of imaging, and complete degloving of the penile shaft and meticulous search to avoid missed injuries. This would avoid devastating physical and psychological disabilities.

Case report

A 23 year old patient presented with history of penile injury while asleep at night. He had apparently turned prone on an erect penis, followed by a 'snap' sound and severe pain. There was immediate loss of tumescence and swelling of the entire penis. He reported to our hospital almost 36 h after the incident. On examination, his penis was swollen, deviated to the right and had a classical 'eggplant' deformity (Fig. 1). There was no history to suggest associated urethral injury. An urgent penile ultrasound was performed which revealed significant subcutaneous penile and scrotal oedema. A large haematoma was noted near the root of the penis with a 9 mm long discontinuity in the tunica over the right corpus cavernosum. Emergency exploration was done under spinal anaesthesia. On degloving the penile skin, two fractures of the corpus cavernosa were found near the root of penis (Figs. 2 and 3), measuring approximately 10 mm and 7 mm, respectively. Repair of the two lacerations was done with interrupted Vicryl 2-0 (Ethicon Inc). The oedema resolved by the second post-operative day (Fig. 4) and complete erectile function was regained by the fourth post-operative day. The patient has been on follow-up for over 18 months with no complications.

Discussion

The penile shaft is composed of three columnar erectile structures – the two dorsolateral corpora cavernosa and one

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<http://dx.doi.org/10.1016/j.mjafi.2012.12.004>

Fig. 1 – Penile fracture with eggplant deformity.

ventral corpus spongiosum, each enclosed in tunica albuginea. The glans penis is formed by expansion of the corpus spongiosum. The corpus spongiosum is traversed throughout its length by the anterior urethra. Buck's fascia surrounds both cavernosal bodies dorsally and splits to surround the spongiosum ventrally.

Fracture of the erect penis is an uncommon but emergent urological condition.² Activities causing trauma to the erect penis like masturbation, self-manipulation, coitus and rolling over in bed can result in fractures. Vaginal intercourse remains the most common cause. Use of pharmaceutical agents which enhance the duration of erection, pre-existing urethral or periurethral infections and injuries to the penis increase the chance of penile fractures.³ A rapid rise of pressure inside the corpus cavernosum as a result of an extrinsic force breaks the already thinned (due to erection) tunica albuginea of the erect penis. The thickness of the tunica reduces from 2.4 mm to between 0.25 mm and 0.5 mm in the tumescent state.⁴

In a review of 1331 cases from 183 publications by Eke,⁵ most cases were reported from the Mediterranean region and most patients were in their fourth decade. Clinical features included sudden penile pain, detumescence, voiding

Fig. 3 – Two fractures visible – distal repaired & proximal under repair.

difficulties, penile swelling and deviation. Most authors advocated early surgical repair using absorbable sutures. Complications of the condition include coital difficulty, urethral fistula, penile plaque and erectile dysfunction.

The diagnosis of the condition is clinical; however various imaging techniques have been used to confirm the diagnosis and delineate the exact location and extent of injury, such as cavernosography, retrograde urethrography, magnetic resonance imaging and ultrasonography-colour Doppler. Cavernosography is an invasive method which entails radiation and is rarely used. Retrograde urethrography is also an invasive technique, and is required only if associated urethral injury is suspected. Magnetic resonance imaging is excellent for evaluating patients with penile trauma because of its multiplanar capability and excellent tissue contrast. However, its high cost and restricted availability limit its routine use. High-frequency sonography (7.5 MHz–12.0 MHz) is the preferred imaging technique in penile trauma because it allows evaluation of normal and pathologic structures generally smaller than 1 mm, and also allows evaluation of penile vascularity.⁶ Sonography can detect the exact site of the tear as a disruption of the thin linear echogenic tunica albuginea

Fig. 2 – Fractured corpora cavernosa seen after degloving.

Fig. 4 – Second post-op day after repair of penile fracture.

and show evidence of associated haematoma. Small tunica tears may be identified on colour Doppler by squeezing the penile shaft and producing a leak from the cavernosal bodies through the defect. Evaluation of the urethra with sonography can help identify interruption of the urethral wall, but retrograde urethrography may be needed. In the absence of external penetrating traumas, an indirect sign of urethral injury is the presence of air in the cavernosal bodies.⁷

Most studies mention a solitary fracture of the corpus. In our patient, the corpus was found to have two fractures at a distance of almost 3 cm from each other. The omission of a careful search for a second site of injury might have led to an unsatisfactory outcome in this patient. It therefore seems important to completely deglove the penile shaft before closure is planned while operating upon such cases.

Traditionally urgent surgery has been advocated in cases of fracture penis.^{1,8} However, recent studies have revealed that there is no serious deformity or erectile dysfunction as a consequence of delayed surgery in the long term in patients with no urethral involvement. In a study by Kozacioglu et al⁹ of 56 patients with penile fracture, the mean time interval from trauma to surgery was 11.3 ± 8.5 h. Favourable outcomes of delayed surgery have also been noted by others.^{10,11} In our case, surgical repair was offered more than 36 h after trauma due to the delayed presentation. However, the outcome was favourable and not much data is available with surgery as late as 36 h post-trauma.

Conclusion

Fracture of the penis is a rare surgical emergency. The diagnosis is clinical, however high resolution sonography and colour Doppler are helpful in delineating the site and extent of injury. Degloving of the entire penis and a meticulous search for multiple fractures is recommended. This case also highlights a situation where delayed surgery was undertaken with good results. Future trials comparing large number of cases of

early and late surgery will better outline any difference in surgical outcomes.

Conflicts of interest

All authors have none to declare.

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