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Case Report

Fractured penis with concomitant urethral injury: a challenging presentation at a tertiary hospital in north-central Nigeria-case report and literature review

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ABSTRACT

Fractured penis is reported as a traumatic rupture of the tunica albuginea by following blunt injury to an upright penis. Though a rare urological emergency due to blunt trauma to a turgid penis. The rupture of the tunica albuginea is often single involving either of the two corpora cavernosa; however concomitant urethral injury is an exceptionally infrequent condition requiring primary urethral anastomosis. Many of the patients are likely to have urethral strictures following surgery. Buccal mucosal graft is repeatedly used for substitution urethroplasty in urethral stricture management; however, its use is not commonly reported for immediate treatment in the background of fractured penis. Herewith is the report of a 33-year-old male with rupture of both corpora cavernosa, as well urethral rupture, after coitus. The urethral injury was repaired using buccal mucosal graft. At follow-up, patient did not encounter erectile or voiding issues. The implementation of this technique would go a long way at ameliorating the occurrence of urethral strictures in these subsets of patients, however there is still room for larger sample-sized prospective studies in the future. Consistent with our index case, surgery for the fractured penis is expedient with a view to conserving urethral and sexual function.

Keywords: Fractured penis, Urethral injury, Concomitant, Case report, Challenging

INTRODUCTION

Fractured penis (FP) is a rare urological emergency and is defined as the rupture of the tunica albuginea of the corpus cavernosum as a result of blunt trauma to a turgid penis.[1,2] Direct trauma to the penis during coitus is the paramount reason for fractures of the penis.

FP is often unilateral however both corporal bodies could be involved and may have concomitant urethral injury.[2,3] The main aetiology of fracture of the penis in the Western world is vigorous coital encounter, which differs from the experience in the Middle-east following self-inflicted injury of 'Taqhaandan' as the predominant aetiology in a bid to achieve rapid detumescence, the erect phallus is bent.[2,4] The diagnosis of FP is often clinical premised on the history of injury and physical examination.[2-4] The spectrum of clinical presentation ranges from a cracking sound, pain and consequent detumescence and a combination of localised penile haematoma, swelling and phallic deviation to the contralateral side ('egg-plant deformity).[4] The involvement of the buck's fascia may expand the scrotum, perineum and suprapubic region.[4] There is a need for a high index of suspicion of concomitant urethral injury with blood at the tip of the urethral meatus, gross haematuria of difficulty voiding. Some facilities may require retrograde urethrography or flexible cystoscopy to confirm the urethral injury, however the non-appearance of the aforementioned symptoms does not rule out the possibility of a ruptured urethra.[2,3] There is

a variation in the occurrence of urethral injury on background FP from 0-3% to 20-38% across the continents-Iran and Japan to USA and Europe and this may be explained by the differing aetiologies.[5] Injuries to the urethra may be classified as partial or complete with the former being more common but when the complete forms occur, they are associated corporal tears bilaterally.[2,3,6]

With the advent of published report showing significantly higher complications with conservative approach to management, immediate surgical exploration and repair of the tunicle tear remains the gold standard for the treatment of FP.[7] The repair of urethral tear is often via suturing over a urethral stent with its attendant urethral stricture complication and voiding impediments.[3,8] This report seeks to access the delayed repair of urethral tear that is related to fractured penis using buccal mucosal graft (BMG) in a poor resource setting in North central Nigeria.

CASE REPORT

We report a 33-year-ol male, who sustained injury during coitus with symptoms of pain, immediate detumescence, penile swelling and bruising, as well as urethral bleeding and urinary retention. He presented 20 hours after the injury to our facility necessitating suprapubic catheter placement. Physical examination revealed a swollen and bruised phallus, and blood at the meatus, while the retrograde urethrography revealed urethral injury by filling defect and extravasation of the contrast (Figure 1). Packed cell volume (PCV) was 22% necessitating transfusion of two units of blood. After an informed consent, the patient had an immediate surgical procedure performed. A subcoronal circumferential incision was made after which the phallus was degloved and haematoma evacuated (Figure 2). The ruptured corpora cavernosa was recognised, as well as the ruptures of the penile urethra 1 cm long (Figure 3).

Figure 1: Retrograde urethrogram showing the area of urethral injury as a contrast extravasation.

Closure of the corpora cavernosa bilaterally was performed using interrupted vicryl 2-0 sutures. BMG was harvested from the inner cheek making sure the stenson's duct is avoided. The hydrodissection was implemented by infiltration of 1% xylocaine and adrenaline (1:200,00) solution under the mucosa. The graft was dissected using scissors and careful attention along the submucosal plane avoiding damage to the buccinator muscle. The graft was spread and quilted to the corpora cavernosa using 4-0 vicryl sutures, and the torn urethral margins sutured to the graft edge over a 16 Fr 2-way 100% silicone catheter using 4-0 vicryl interrupted sutures (Figures 4-6). Patient was discharged on the eight postoperative day, urethral catheter removed after 21 days, suprapubic catheter removed after additional 7 days since there was no challenge with voiding. At follow-up, patient had no occurrence of erectile dysfunction and voiding difficulties.

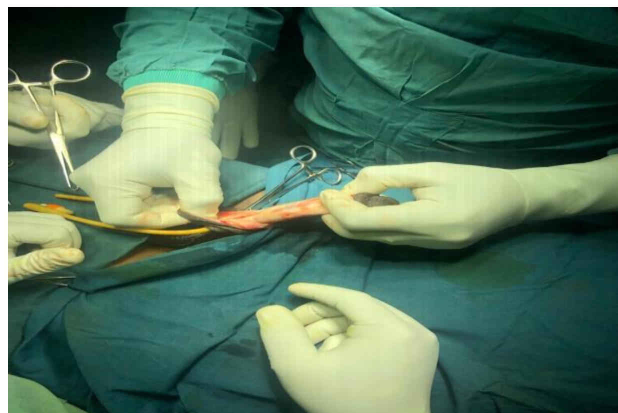

Figure 2: Circumferential and subcoronal incision with degloving of the Phallus.

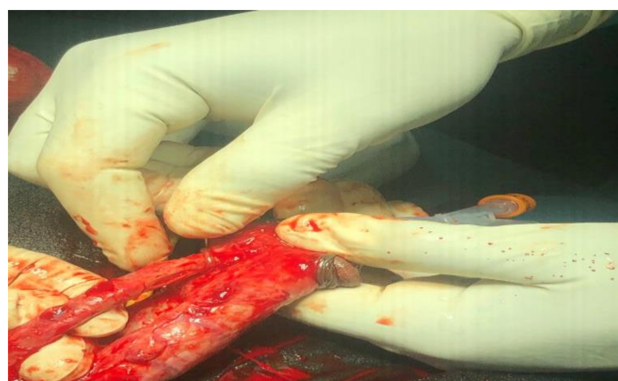

Figure 3: Site of the injury to the isolated urethra marked with the arrow.

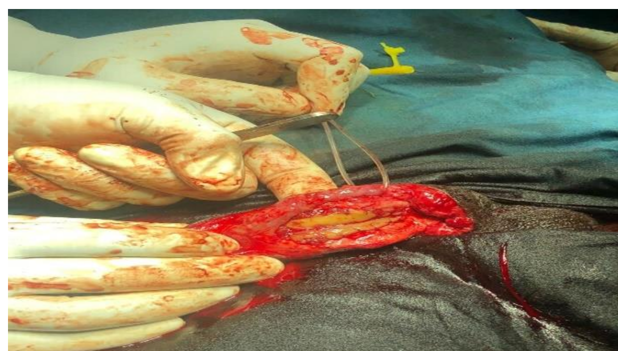

Figure 4: Laying of the buccal mucosal graft to the bed of the corpora.

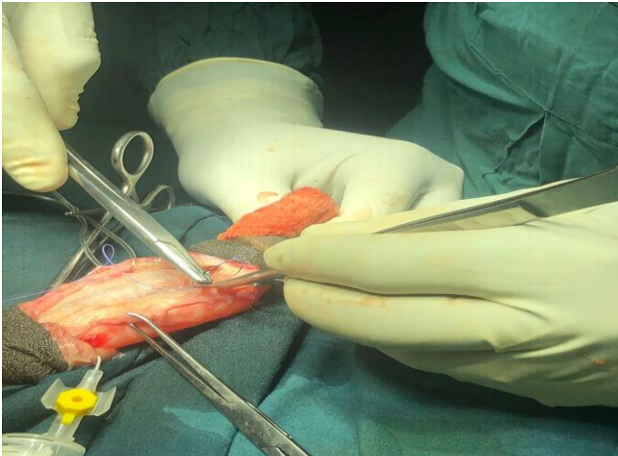

Figure 5: Quilting of the Buccal mucosal graft to the corpora.

Figure 6: Closure of the circumferential incision made over the phallus.

DISCUSSION

In 1924, the first recorded case of FP was made in the modern medical literature with the first surgical repair attempted several years later however not until the 1980s when early surgical intervention became an accepted standard of care in both European and American guidelines for the management of fracture of the penis.[9] Subcoronal circumferential incision remains the most widely used surgical approach after which the phallus is degloved as it allows for the visualization of all three corporal compartments resulting in satisfactory exploration and repair of any coexisting urethral and adjacent injuries with a resultant satisfactory cosmetic outcome.[2] Urethral rupture is often uncommon especially the complete variety however it can be repaired by primary anastomosis, interposition with a graft or use of urethral stenting but could be challenging if the injuries are complex.[10] Post-operative sequalae is more likely to occur in patients with concomitant urethral injury with reports lacking and not too many reportages on long-term outcomes. In patients who have undergone surgery, the complication rate is about 20.6% with those with worsening voiding function approaching 30.8%.[10]

Buccal mucosal graft remains a reliable substitute for urethral reconstruction with superb results in previous studies.[11] The aforementioned necessitated the use of this technique in the repair of the urethral injury as other techniques are associated with narrowed urethral lumen eventually leading to voiding decline and urethral stricture formation.

CONCLUSION

Fracture of the penis though a relatively infrequent urological emergency, especially with urethral injury. The presence of meatal bleeding or difficulty urinating should raise a high suspicion of urethral injury. The need for immediate surgical repair of both the corporal and urethral is the established treatment and would have acceptable outcome.

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