

## CASE REPORT

## Management of Partial Penile Amputation Injury: Case Report and Review of Literature

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**ABSTRACT**

Partial penile injuries though rare are associated with much distress and anxiety. The management of the penile-injured patients can be challenging. Prompt surgical intervention may result in good outcome. We present a young man with near- total penile amputation injury who did well following prompt penile reconstruction attempt.

**Keywords:** *Penile injury, Penile trauma, Penile reconstruction, Urethral injury*

## INTRODUCTION

Injury to the penis though rare, presents a difficult physical and psychological challenge to the patient, spouse, family and the surgeon due to the socio-cultural and emotional attachment to the organ.<sup>1,2</sup> The rarity of penile injuries is due to its being enveloped by loose skin, its protection by the thighs, buttocks and importantly, its

mobility.<sup>1</sup> Majority of reported penile injuries are due to blunt trauma from coitus with resultant penile fracture; from metal rings, constrictive devices applied for masturbation and autoerotic stimulation as well as penile entrapment by bogus clothes worn by machine operators.<sup>3,4,5,6,7,8</sup> Much rarer still, are penile amputation injuries which have been reported as part of self-mutilation syndrome

in schizophrenic patients;<sup>9,10</sup> following delirious states in alcoholics suffering from withdrawal states;<sup>11</sup> in patients who sustained animal bite injuries to the genitalia;<sup>12,13,14</sup> as a complication of ritual circumcision in children and interestingly, penile amputations by angry housewives against their philandering husbands.<sup>15,16,17</sup> In addition, penile amputation injuries have been reported as part of ritual attack.<sup>18</sup>

The type and extent of the injury to the penis depends on the aetiology of the injury and the severity may range from mild to severe that may involve total amputation.<sup>1</sup> Management of patients with injuries to the penis is challenging due to its not so common presentation and as such most urologists do not have sufficient experience and expertise in the treatment of severe injuries to this organ.

We present a case of a young man who sustained near-total penile amputation injuries under suspicious circumstances and also the outcome of his penile reconstructive surgery.

### Case Report

A young unmarried 20-year old Fulani cattle herdsman was referred to our unit through the hospital Trauma Centre two days after injury and after initial first aid at a peripheral hospital, with a history of being attacked by an assailant during sleep at night during which he sustained machet wounds on the left side of the face, the trunk and the penis. Patient had no past history of use of alcoholic drinks or recreational drugs.

Examination showed an acutely looking young man in pains who was pale. He was well oriented in place and time. His pulse rate was 110 beats per minute and blood pressure was 90/77 mm Hg. External genitalia

examination showed circumcised phallus, a sharp, deep laceration extending from left side of the base of the phallus diagonally and inferiorly to the right hemiscrotum with complete transection of both the corpus spongiosum and the corpora cavernosa at the bulbo-penile junction. The phallus was held by a flap of skin on the right side (Figures 1 and 2).

At admission, his packed cell volume (PCV) was 21%, urinalysis was negative for glucose and protein, serum urea and electrolytes were essentially normal. He was resuscitated with intravenous fluids and transfusion of 3 units of blood while being prepared for surgery.

Under general anaesthesia, he subsequently had penile exploration, debridement and corpora cavernosa anastomosis. The urethra was mobilized proximally and distally with spatulation of both ends, and an end-to-end urethral anastomosis effected using absorbable (Vicryl®) 5/0 sutures (Figures 3 and 4). The urethral repair was stented with size 16F silicone catheter and suprapubic urinary diversion was achieved with size 20F Foley's catheter.

The transected corpora cavernosa were debrided and end-to-end tension-free corporal anastomosis was effected with Vicryl® 5/0.

The corpus spongiosum enclosing the urethra was mobilized proximally and distally, both ends were spatulated and a tension-free, water-tight, end-to-end suturing over a size Fr 16 silicone Foley's catheter effected. He had post-operative intravenous fluids, antibiotics and analgesics.

Patient had an uneventful post-operative recovery with satisfactory wound healing.

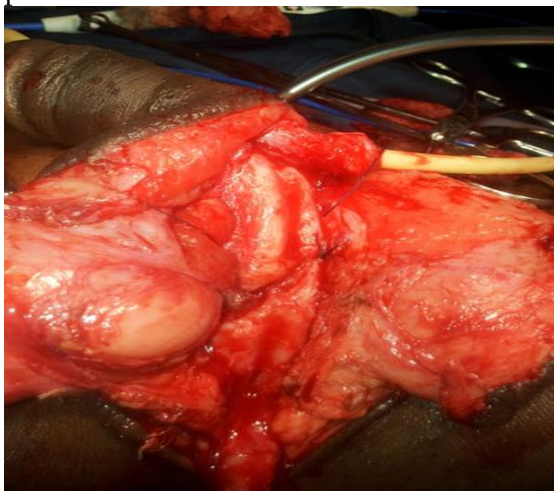
The urethral stent was removed on the twenty-first post-operative day while the suprapubic catheter was clamped to allow the patient to void per urethra. The suprapubic tube was removed two days later after patient had demonstrated normal voiding. The patient self-reported return of nocturnal penile tumescence twenty-one (21) days post-operatively and was discharged subsequently.

However, patient defaulted from out-patient follow-up and efforts to locate him was futile being a wandering herdsman with no constant address and no telephone contact.

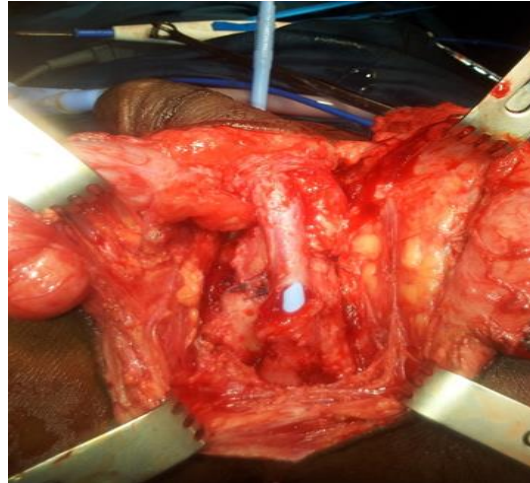
**Figure 1.** Sharp laceration extending from the base of the phallus



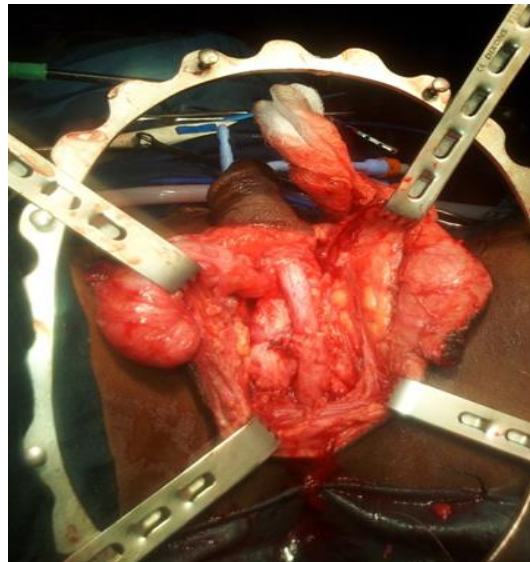
**Figure 2.** Intraoperative image showing complete corpora cavernosa and bulbo-penile urethral transection



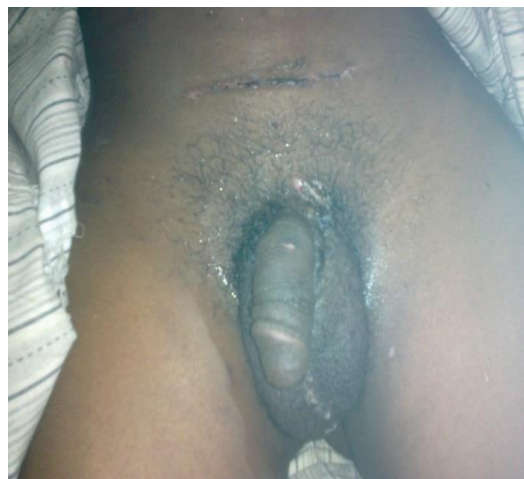
**Figure 3.** Dorsal urethral anastomosis with 16F silicone catheter in-situ



**Figure 4.** Completed urethral and corporal anastomosis



**Figure 5.** Wound healed and urethral catheter removed





## DISCUSSION

The initial management of the index subject was focussed on resuscitation consisting of intravenous fluid administration, blood transfusion, intravenous antibiotics, analgesia and antiseptic wound dressing.<sup>19</sup>

The circumstance of injury was suspicious as we depended on the history that was given by the subject and his accompanying relatives. From the history, there was no prior demonstration of abnormal behaviour indicative of pre-injury psychosis, use of alcohols or recreational drugs as have been reported by other authors.<sup>10,11,20,21</sup>

Physical examination of the subject showed no evidence of self-inflicted violence which might have been indicative of genital-self mutilation syndrome found in psychotic patients. The history given by the patient and corroborated by his relatives was that he had sustained the penile injury as a result of being attacked at night during sleep by an unknown assailant who stabbed him with a knife on the left side of the face, trunk and penis.

In our environment where there are strong family bonds and subsequent social embarrassment, the real cause of the injury may not be disclosed by patient or relatives for fear of involving the law enforcement agents and consequent social stigmatization if the real cause of the injury involving close family members is known to the public. We know that this type of genital injury is uncommon and could have been inflicted by a known family member if there was any suspicion of the subject meddling with a younger wife within the clan. The fear of family ridicule may induce such attempts at concealment such that everybody in the family is mandated to tell the same story.

The technique of penile reconstruction in the patient with traumatic penile injury depends on the extent, tissue involvement, the training/experience of the surgeon as well as the equipment available. Our goals for the repair were to achieve functional anastomosis of the urethra and corpus cavernosum, restore penile cosmesis as well as restoring normal penile erectile function.<sup>22</sup> Our patient sustained penile injury involving complete transection of the urethra and corporal bodies, leaving the penis hanging on a pedicle of penile skin flap. After the initial resuscitation, he underwent macrosurgical repair consisting of corpora cavernosa anastomosis, spatulated end-to-end anastomotic urethroplasty and skin closure.

Surgical treatment of complete penile amputation injuries consists of urethral reconstruction and re-anastomosis of the corporeal bodies most preferably by using magnifying loupes with the microsurgical repair of the penile vessels and nerves. Better results are achieved due to the important role of magnification which enables better visualization of tiny vessels and nerves.<sup>23</sup> Ideally, the patient should be handled in a facility with microsurgical capabilities even though in some other reports, good results have been obtained without the use of microsurgery.<sup>24,25</sup>

Franklin *et al.* outlined the cardinal principles in microsurgical penile replantation to include the following; short total ischaemic time of about six hours or cooling of the penile stump at 4 degree Centigrade for up to 24 hours, proper identification of the vessels and nerves, proximal urinary diversion by suprapubic cystostomy, stented urethral anastomosis, anastomosis of the corporal bodies and micro neural/ microvascular anastomosis.<sup>26</sup> Raheem *et al.* reported

successful microsurgical repair of complete penile amputation injury in a substance-induced psychotic while Fujiko *et al.* also demonstrated similar outcome in a schizophrenic patient with previous history of genital self-mutilation.<sup>27,28</sup>

In this report, we did not have the facility for microsurgery at the time of presentation of the index patient, however, this did not affect the immediate outcome of the procedure. Our immediate outcome was similar to that of Franklin *et al.* as earlier noted though the latter had employed microsurgery in the surgical procedure<sup>26</sup>.

The return of nocturnal penile tumescence in our patient even without the benefit of microsurgical repair may be due to the unique dual arterial supply of the male urethra from the proximal and distal branches of the internal pudendal artery which ensures urethral viability after transection of the corpus spongiosum occurring following trauma and in urethral reconstructive surgeries.<sup>28,29</sup>

The patient was lost to for follow-up after discharge from the hospital thus preventing the long-term assessment of the outcome of the procedure. The patient is a cattle herdsman and people of that occupation do not have a permanent residence as they follow their herds in search of pasture thus making follow-up and contact tracing almost impossible.

#### CONCLUSION

Partial penile amputation can be repaired with good cosmetic and functional outcome even in the absence of microsurgical training and facilities.

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