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Genito-Urinary Trauma
Case report

Successful penile reimplantation and systematic review of world literature

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Abstract
Introduction: There is paucity of case reports that describe successful non-microscopic penile reimplantation. We report a case of a self-inflicted penile amputation in an apparently normal patient with first psychotic break.
Observation: To report on a case of successful macrosurgical penile reimplantation, discuss the etiologies, surgical techniques and outcomes of world literature on penile reimplantation and an update of current trends in penile surgery. A 40 year-old male, father of 3 children and a proprietor of a nursery school with no prior pschiatric disorder was rushed to our trauma centre following a self-inflicted total penile amputation at its base with incomplete laceration of the scrotum due to command hallucination. He was immediately resuscitated and underwent a non-microscopic penile reimplantation and scrotal closure by an experienced urologist (JEM) by reattaching the dorsal vein, urethra, corporal, fascial and skin layers. A functional outcome with respect to voiding, penile erection and cosmesis was excellent.
Conclusion: Self-inflicted penile amputation may manifest as first psychotic break in apparently normal subjects. Though microscopic neurovascular reconstruction is the gold standard, macrosurgical reimplantation of penis by an experienced surgeon in the absence of a microscope yields satisfactory results.

Introduction

Males are prone to have external genitalia injuries more frequently than female because males are more exposed to violence or extreme exercise [1]. External male genitalia injuries can be categorized as accidental i.e during circumcision, zipper injury or penile frac-

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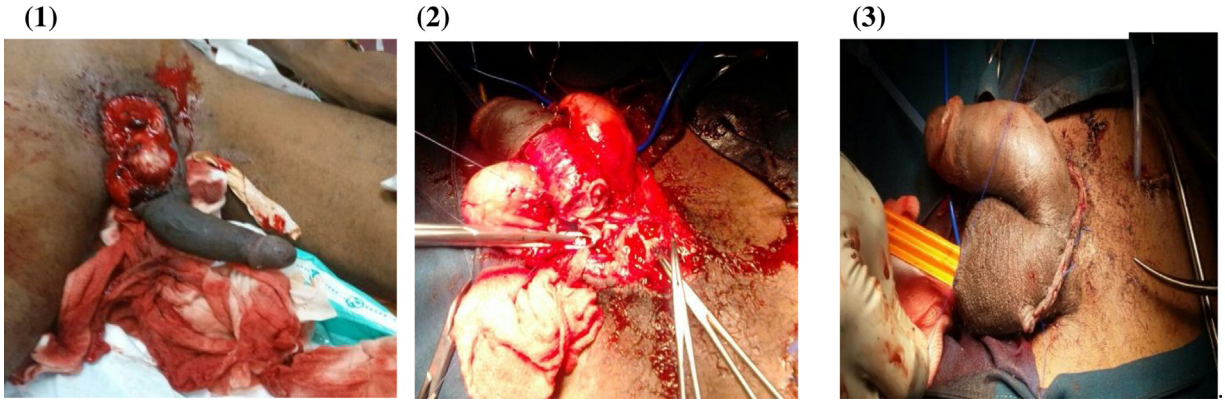
Images of amputated penis before and after reimplantation.



Figures 1–3 (1) ER-Amputated penis. (2) Tunica albuginea closure. (3) Reimplanted penis.

ture or as traumatic in origin i.e motor vehicular accident (MVA), animal bite, gunshots, penetrating injury, strangulation injury, self-ampulation, criminal, assault injury [2]. Self-emasculation of the penis may be as a result of Klingsor syndrome (disease of self-mutilation by a psychiatric patient, often suffering from religious delusions). About 87% of penile amputations are due to an underlying psychiatric disorder [3,4]. Self-mutilation is a way of expressing and dealing with deep distress, anger, dissociation, and emotional pain in order to have self-purification [5]. However, self-purification by self-mutilation does not last very long [5]. Also self-mutilation may present an individual's first psychotic break. Historically, there was an epidemic of penile amputation by Thai women in the decade after 1970s [6].

External male genital injury by self-mutilation involves injury to the penis, the scrotum and the testicles. The type of injury varies from simple skin laceration to total amputation of the penis and laceration of scrotum and or testis as occurred in our patient.

We, therein, report a case of a self-inflicted penile amputation in an apparently normal patient who had first psychotic break and review literature on penile amputation.

Case report

A 40 year old man, father of 3 children and a proprietor of a nursery school with no prior medical history was rushed to our trauma centre following a self-inflicted penile amputation and partial laceration of his scrotum due to command hallucination from first psychotic depression. Further interrogation revealed he had been summoned by Metropolitan Authority to close down his nursery school or face demolition of his infrastructure due to unlawful citing. The directive triggered a reactive psychotic depression with command hallucination resulting in dismemberment of his penis at its base with a razor blade. He was discovered 6 h later in his washroom lying in a pool of blood. He was in haemorrhagic shock on arrival at the ER with blood pressure of 98/66 mm Hg, weak and thready pulse of 121 beats per minute. His haemoglobin level was 6.5 g/dl (reference range 11–18 g/dl). He was immediately resuscitated with intravenous fluids and haemotransfused with 2 units of whole blood and tetanus prophylaxis given. He was subsequently counseled and consented for macroscopic penile reimplantation.

The surgery was done under general anaesthesia. Prophylactic intravenous third generation cephalosporin antibiotic was given. A formal cystostomy was done to divert the urine with a 16Fr silicon catheter followed by meticulous reimplantation of the penis (Fig. 1).

We placed interrupted 3–0 monocryl sutures through the tunica albuginea of the corporal bodies on the ventral aspect and snapped them for future tying (Figs. 1 and 2). Next, we freshened and spatulated the urethra and attached it in a tension-free 360-degree fashion using interrupted 4–0 monocryl sutures over a 20Fr silicon urethra catheter. The corporal bodies were then closed in interrupted fashion using 3–0 monocryl sutures. Careful reapproximation of the tunica albuginea near the vessels on the dorsal aspect was done in order not to compromise the blood supply. Tension-free approximation of the dorsal vein then followed. Reimplantation was completed by closing the corporal bodies, fascial layers and skin (Figs. 1 and 3). The wound was then covered with povidone-soaked gauze and the scrotum elevated. His would was complicated by partial dorsal skin necrosis which healed with continuous wound dressings. Whilst on admission, he was referred and reviewed by the psychiatrist and put on oral olanzapine 10 mg nocte and oral fluoxetine 20me nocte. He was discharged home on postoperative day 20 after clearance the by psychiatrist to continue treatment on outpatient basis. He is happy with the penile cosmesis (Figs. 2 and 4) though regrets his action. He has since been voiding well (peak flow = 21 ml/s) and has mild erection dysfunction (IIEF-$_5$ = 17).

Discussion

Penile amputation is a urological emergency which requires urgent surgical intervention because the associated hemorrhage can be torrential and life threatening as occurred in our patient due of the rich penile vasculature (Figs. 2 and 5). Different weapons have been utilized in penile amputation cases, which range from sharp blades, heavy machinery to projectile objects [7]. Razor blades was the most common weapon used, as occurred in our case and other reported cases [7–17]. Earlier case reports of self -penile mutilation were published in the mid 1800s and successful penile reimplantation was reported in 1926 [18].

There is no consensus on the classification of external genitalia injuries because of the diverse nature of injury mechanism. Rashid