

Late management of traumatic complete penile amputation: A Case Report

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Abstract. Traumatic complete penile amputation is a rare condition. Despite the implementation and success of known repair strategies, rural hospitals nevertheless face limitations. Furthermore, the amputation of the penis is accompanied by significant challenges and complications in the later stages. We present a case of a 43-year-old man who had previously undergone complete amputation of his penis and is now experiencing urine retention. A suprapubic cystostomy procedure was performed on the patient to divert urine. The patient planned to have a reconstructive operation by seeking treatment at a specialized tertiary referral hospital with expertise in reconstructive urology. However, the patient displayed a hesitancy to interact with healthcare practitioners. The purpose of this case report is to illustrate the complexities of traumatic total penile amputation and the early care of a rare urology case that may arise in peripheral hospitals without urologists.

Keywords: penile amputation, trauma, urine retention, urology

Introduction

Traumatic Complete penile amputation is an infrequent event within the field of urology. This is substantiated by the fact that the majority of published papers consist of individual case studies or brief reviews [1]. Zou and Fu conducted a 10-year retrospective analysis in Shanghai. The study found that genitourinary trauma accounted for 22.12% of all injuries in male patients [2]. Penile injuries can arise from motor vehicle or automobile accidents, heavy machinery mishaps, burns, industrial incidents, or deliberate self-harm [3-4]. Penile amputation, whether partial or complete, might result in delayed consequences if not addressed with careful postoperative care. Possible complications of penile amputation include infection, penile curvature, fistulae or urethral strictures, erectile dysfunction, urine retention, and persistent pain. Moreover, the surgical removal of the penis has resulted in significant impairments in both physical function and psychological well-being, greatly impacting the patient's overall quality of life [5]. We present the case of a 43-year-old male who presented with urine retention as a delayed consequence following a complete amputation of the penis 12 years ago.

Case Report

A 43-year-old Melanesian male arrived with urinary difficulties one day prior to admission to the emergency room. The patient reported the absence of a penis while noting that the scrotum remains intact. The patient's medical history indicates that 12 years ago, he experienced an unintentional trauma resulting from machinery damage during work. This incident led to a complete amputation of the penis up to the base. The excised portion of the penis was not conserved. The residual portion of the penis fragmented, and the foundation of the penis was unsuitable for reattachment. At that moment, the Surgeon decided to do surgical debridement and subsequently closed the area where the penis was amputated, yet ensuring that the urethra was preserved obtaining urinary function. The patient reported experiencing urinary retention for the first time following a complete amputation. Subsequently, following a comprehensive examination of the patient's medical background, it was discovered that the individual has been experiencing urinary troubles for the past two years. Additionally, it was noted that the patient had ceased attending medical appointments after undergoing a surgical procedure to amputate the penis twelve years earlier. In addition, the patient had sexual dissatisfaction and a diminished quality of life as a result of the urinary issue.

Upon arrival, the patient exhibited stable hemodynamics. The initial vital signs following arrival were as follows: blood pressure (BP) measured at 145/92 mm of Hg, pulse rate at 124 beats per minute, and respiration rate at 20 breaths per minute. The physical examination revealed a swollen abdomen that was fully inflated, with a visual analog score of 6/10. The genitourinary physical examination revealed complete amputation of the penis, with both testes remaining intact (Figure 1). Additionally, the external urethra was still visible between both testes (Figure 2).



Figure 1. Clinical presentation of the patient's genitourinary region, with both testes but no penile shaft



Figure 2. Presentation of the exterior sections of the urethra

An attempt was made to handle the situation by inserting a urinary catheter. Short-term catheterization, which lasts for less than 30 days, is recommended for several purposes such as managing acute retention, decompressing the bladder during and after surgery, and monitoring urine output [6]. The installation of a urinary catheter is specific to the patient's age and the estimated dimensions of the urethra. In this case, we employed a Latex Foley catheter for the patient. For typical adult patients, catheters with a size of 14 F (14 French) or 16 F are appropriate, with bigger sizes exceeding 18 F being infrequently used. A size 12 F catheter was successfully used in a man experiencing acute urine retention [7]. In this instance, the effort to insert 12 F size objects was unsuccessful after multiple tries. The smallest catheter available was the pediatric catheter with a diameter of 8 F (8 French), nevertheless it was unable to penetrate the urethra. In order to prevent damage to the urethra, the patient underwent a suprapubic cystostomy procedure to address the acute urinary retention. Afterwards, it was decided to proceed with secondary reconstruction by referring the patient to a tertiary facility. The patient has authorized the referral centers to perform the secondary reconstruction under the supervision of a reconstructive urologist. The suprapubic cystostomy procedure was performed successfully, and the patient was thereafter transported to the ward. The patient declined the referral due to financial issues. The patient was discharged the day after receiving inpatient care, with instructions to follow up with outpatient care three days later. Regrettably, the patient has not arrived at the hospital up until this day. Despite our attempts, we tried to contact him using his contact information. The patient's whereabouts and progress were no longer being monitored.

Discussion

Traumatic complete penile amputation is an infrequent and complex injury. The rarity of this phenomenon can be attributed to occasional reporting, but it is highly probable that it is under-reported or concealed due to patients refraining from seeking medical assistance for ethical and psychological reasons, such as social disgrace. According to Reddy et al.,[4] a retrospective study was conducted on 156 cases of penile injuries in India over a period of 10 years. The study found that only 3.2% of the total cases involved patients with penile amputation injuries. Another literature review discovered that out of 118

patients with external genitalia trauma at a level one trauma center in the United States, the percentage of individuals with penile trauma was 38.0%. This is significantly lower than the percentage of individuals with scrotal injury (71.0%), but slightly higher than the percentage of individuals with testicular trauma (34%) [8].

The cause of physical injury to the male genitourinary system can be determined by examining the type of the injury mechanism. Iatrogenic reasons, such as circumcision, might be included under this category. Other reasons unrelated to medical treatment, such as sexual trauma resulting from penile fracture, and non-sexual trauma from road traffic accidents, burns, heavy machinery or agricultural machinery accidents, gunshot wounds, animal bites, strangling, and zipper damage, can also occur [3-4][9].

The categorization of physical injuries to the male genitourinary system can be determined based on either the type of injury mechanism or the specific anatomical location. The American Association for the Surgery of Trauma (AAST)-Organ injury scale was utilised to grade the severity of penile injury [10] (Table 1).

Table 1. AAST-Organ injury scale of penile injury

Grade	Description of Injury
I	Cutaneous laceration/contusion
II	Buck's fascia (cavernosum) laceration without tissue loss
III	Cutaneous avulsion/laceration through glans/meatus/ cavernosal or urethral defect
IV	Cavernosal or urethral defect >2 cm/partial penectomy
V	Total Penectomy

*Advance one grade for multiple injuries up to grade III.
Advance one grade for bilateral lesions up to grade V.

Rashid et al., [11] divided urethral injuries into four types based on the anatomical placement of the original urethra.

- A. Type I injury involves the intact proximal section of the corpora and the urine meatus is located on the surface of the palpable corporal stump. Both testes are intact and the scrotal skin is typically undamaged
- B. Type II injury involves near-complete loss of the corpora, except for the crura, along with partial loss of the scrotal skin and the loss of one or both testes

- C. Type III injury refers to injuries where the patient is expelling urine through a perineal urethrostomy and the scrotum is typically not present
- D. Type IV injury refers to injuries that the individual does not have a clearly visible urethra in the perineum and need the use of a suprapubic cystostomy

Based on the patient's physical examination, we determined that the penile injury is classified as grade V according to The American Association for the Surgery of Trauma (AAST)-Organ injury scale, indicating that a total penectomy has been performed previously. The urethral injury is categorised as Type I, which means that the proximal section of the corpora is intact and the urine meatus is located on the surface of the palpable left corporal stump. The testicles are fully intact and the skin of the scrotum is uninjured.

The first management of Penile avulsion injuries and amputation focuses on stabilizing the patient's condition and making necessary preparations for surgical re-implantation of the penis, if it has been retrieved and is mildly injured. For all patients, it is advisable to seek surgical re-implantation, which should be carried out within 24 hours following amputation [3]. The therapy of penile amputation has two main goals: preserving the length of the penis and maintaining its erectile and voiding capabilities. Microsurgical replantation is the current standard treatment for all feasible cases [12]. As per the EAU Guidelines on urological trauma, it is recommended to cleanse the detached penis using sterile saline, then cover it with gauze soaked in saline solution. Next, the penis should be placed inside a sterile bag and submerged in chilled water. Avoid any direct contact between the penis and the ice. To prevent excessive blood loss, it is necessary to apply a pressure dressing or a tourniquet around the penile stump [13]. The success of penis replantation relies on the state of both the remaining stump and the severed portion. If the detached phallus cannot be located or is not suitable for reattachment, it should be sealed off in a manner similar to that used in partial penectomy. In certain cases, injuries that result in a very small or non-functioning penile stump may necessitate a postponed extensive reconstruction surgery, such as phalloplasty (either radial artery or pubic) [14]. The objective of penile damage repair is to achieve a visually pleasing form and to restore normal or nearly normal functional outcomes, such as erection and sexual penetration.

In our case, the patient was lost to follow-up 12 years ago after undergoing total penilectomy. A

major reconstructive treatment should have been performed several years ago to prevent the development of severe complications. For cases where the remaining part of the penis is not enough for a small-scale repair, it is recommended to undergo a complete phallic reconstruction or phalloplasty. The objectives of phallic reconstruction are producing a visually pleasing and sensitive new penis, complete with a newly formed urethra, in order to restore the patient's ability to urinate and ejaculate. This treatment involves the subsequent placement of a penile prosthesis to enable the requisite firmness for engaging in penetrative sexual intercourse. Prior to undergoing phalloplasty, it may be necessary to do urine diversion through suprapubic catheterization using cystostomy [14]. This reconstructive approach has the potential to serve as a comprehensive solution for enhancing the quality of life for patients.

Another objective of management is to enhance the psychological well-being affected by the trauma. Additional discoveries in the literature indicate that the act of seeking guidance on matters of health is not perceived as being masculine or manly [15]. The patient is reluctant to seek medical assistance until their urine function is completely affected. Given the patient's extensive medical background, it is highly probable that their psychological demands are intricate. Genital injury or trauma may lead to the development of Post-Traumatic Stress Disorder (PTSD) and sexual dysfunction. This might involve difficulties in dealing with changes in body image and integrity, as well as varied levels of dysfunction in sexual and physical intimacy. Other potential consequences include infertility, urinary incontinence, discomfort, weakness, and fatigue [16]. The trauma and other presenting problems are addressed using established evidence-based therapies, such as cognitive behavioral therapy (CBT), trauma-focused CBT, and eye movement desensitization and reprocessing, as recommended in the National Institute of Clinical Excellence Guidelines [17]. Additionally, a holistic approach is taken.

An inherent limitation of this case report is the geographical isolation of the health facility from the tertiary referral hospital. This has an impact on the procedure of referring patients. The main considerations are the financial, time-based, and logistical limitations. Another constraint arises from the presence of communication obstacles and the patient's insufficient educational attainment. Furthermore, the lack of adequate human resources

and medical equipment restricts our capacity to deliver advanced therapy.

Conclusion

Traumatic complete amputation of the penis is an uncommon injury. The objective of the management is to minimize the likelihood of subsequent occurrences, such as severe malformations and functional limitations. This patient needs immediate treatment from a reconstructive urologist. Furthermore, maintaining patient confidentiality and providing counseling are essential components in these circumstances to ensure comprehensive therapy.

Ethical Clearance

Ethical clearance was not necessary as per the regulation of Labuha General Hospital ethical committee.

Informed Consent

Verbal and written Informed consent was obtained and waived by the patient for publication of this case report and associated images in this study. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Conflict of interest

The authors declare that they have no conflict of interests.

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