Successful Replantation of Amputated Penile Shaft following Industrial Injury

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Abstract

Penile amputation is an uncommon urological emergency. Although rare, traumatic amputation of penis is a challenging injury to treat. However, modern microsurgical reconstruction techniques have improved success rate of penile replantation and become the procedure of choice for managing these patients. Herein, we report on a case of penile amputation following an industrial accident.

Keywords: Amputation, traumatic; Safety, occupational; Replantation; Industrial accident; Occupational accident

Introduction

Penile amputation is a rare type of genitourinary tract injury that negatively affects victim’s quality of life. The majority of these cases occur as a result of self-mutilation in psychiatric patients as a response to hallucinatory command or else as a result of violent assault.\(^1\) It may also occur secondary to industrial work accident or war injury.\(^2\) Penile amputation has also been reported as a rare complication of circumcision.\(^3,4\) Herein, we report on a case of penile amputation following an industrial accident.

Case Report

A 26-year-old man presented to the emergency room with bleeding from his penis. He was injured with high speed fragments of the disk of an electrical air angle stone grinder suddenly broken when he was working with. On physical examination, the penis was almost completely amputated from the mid-shaft with complete dissection of the urethra and both corpora cavernosa (Fig 1).

During surgical replantation of the shaft, urethral ends were spatulated and anastomosis was created with continuous 4-0 poly-diaxanone (PDS) sutures on a 16-F silicon catheter. The corpora cavernosa were repaired with interrupted 3-0 PDS sutures. The deep dorsal arteries and vein were anastomosed with 8-0 prolene sutures using a 2.5× magnified loop (Fig 2). The skin was closed with 4-0 chromic sutures.

In the hospital course, the patient received systemic antibiotics (cephalothin and amikacin). The post-operative course was uneventful and the patient was discharged one week after operation with oral antibiotics and anti-androgen drugs. The urethral catheter was removed after four weeks and the patient voided without difficulty.

On a two-year follow-up, the patient had no voiding problems and no erectile dysfunction though he had a mild left lateral chordee and penile skin numbness.
Discussion

In 1926, Ehrich reported the first case of penile replantation in a patient who had amputated his penis by a radial saw. Amputation of the penis is usually an act of self-emasculating done by acutely ill psychotic patients. Greilsheimer and Groves showed that 87% of patients who amputate or mutilate their genitalia are believed or shown to be psychotic at the time of the accident and that 51% of whom are in a decompensated schizophrenic state. Another group of these patients has severe character disorders or gender identity problems.

The majority of penile injuries are due to industrial machinery, motor vehicle accidents and burn. Traumatic penile amputations resulting from accidents are rare. Traumatic amputation resulting from felonious assault is also rare. A large series of assaults have been reported in Thailand where an epidemic of approximately 100 cases of penile amputation occurred during the 1970s when numerous women amputated their husband’s genitalia after marital indiscretion.

War-related penile amputations may also occur—5% of urologic injuries during the Vietnam war were penile.

Decreased ischemic time of the amputated penis significantly affects the outcome of surgery. Hypothermia has been shown to prolong the ischemia time and tissue survival. Therefore, the amputated portion should be placed on a saline-soaked gauze and put into a sterile or clean plastic bag. The bag is then immersed in iced slush.

Penile amputation is a catastrophic event during life of a man. Therefore, all attempts should be made for saving the penis. The goal of surgery is both cosmetic and functional to provide sufficient penile length with normal erection and a patent urethra for comfortable voiding.

In summary, microsurgical replanta-

Figure 1: Photograph shows amputated corpora cavernosa and urethra. The silicon catheter is inserted in the urethra. The injured dorsal penile artery is clamped.

Figure 2: Amputated penis after reconstruction of urethra and corpora cavernosa (arrow head) and dorsal penile artery (thin arrow). Thick arrow shows deep dorsal vein before reconstruction.
tion is the treatment of choice for penile amputation. If microsurgery is not feasible, macroscopic replantation should still be offered.

References