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Total phallic reconstruction using radial forearm free flap after iatrogenic penile amputation☆

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KEYWORDS
Penile amputation;
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Abstract
Introduction: The iatrogenic loss of the penis is a rare situation. We present a challenging case of deferred total penile reconstruction in a genetic male.
Material and methods: A 57-year-old man with the loss of the penis due to a penile abscess and necrosis secondary to penile curvature surgery. The reconstruction was performed over several operations using a radial forearm free flap (RFFF) and placement of a customized inflatable prosthesis a year later.
Results: During the first operation, the penile abscess was drained, the necrotic residues were debrided and placement of hypogastric drainage. Seven weeks later, phalloplasty was performed with RFFF and a tube-in-tube neourethra was constructed. Multiple microsurgical anastomosis was performed, and the donor site was coated with a skin graft from the thigh of partial thickness. The surgery lasted 10 h and had the complication of hair growth in the neourethra, which required mechanical endoscopic depilation on repeated occasions. The patient regained penile sensitivity. Eighteen months after the phalloplasty, a Zephyr single-body inflatable prosthesis (Geneva, Switzerland) was implanted, using the tunica albuginea of the proximal corpus cavernosum. The patient was satisfied with the esthetics and urinary and sensory function. Four months later, the patient is gaining confidence to consider penetration.
Conclusions: Despite the risk of postoperative complications and the need for multiple operations, phallic reconstruction with RFFF and the placement of a customized prosthetic implant can improve urinary and sexual function secondary to the loss of the penis.

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PALABRAS CLAVE
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Faloplastia;
Colgajo libre de antebrazo radial;
Prótesis peneana

Reconstrucción fálica total con colgajo libre antebraquial radial tras amputación peneana iatrogénica

Resumen
Introducción: La pérdida del pene de causa iatrogénica es una circunstancia muy infrecuente. Se presenta un caso desafiante de reconstrucción peneana total diferida en varón genético.
Material y métodos: Varón de 57 años con pérdida del falo por absceso peneano y necrosis secundaria a cirugía de incurvadura peneana. La reconstrucción se realizó en varios tiempos empleando colgajo libre de antebrazo radial (CLAR) y colocación de prótesis inflable personalizada un año después.
Resultados: En un primer tiempo quirúrgico se llevó a cabo drenaje de absceso peneano, desbridamiento de restos necróticos y colocación de talla hipogástrica. Siete semanas después se llevó a cabo faloplastia con CLAR y construcción de neouretra tubo-en-tubo, anastomosis microquirúrgica múltiple y recubrimiento del sitio donante con injerto de piel del muslo de espesor parcial. La duración de esta cirugía fue 10 horas y tuvo como complicación crecimiento de vello en la neouretra, que obligó a depilación mecánica endoscópica en repetidas ocasiones. El paciente recuperó sensibilidad peneana, y 18 meses tras la faloplastia se le implantó prótesis Zephyr (Ginebra, Suiza) inflable de un solo cuerpo, utilizando la propia albugínea del cuerpo cavernoso proximal. El paciente se encuentra satisfecho desde el punto de vista cosmético, miccional y sensitivo. Cuatro meses después se encuentra ganando confianza para abordar la penetración.
Conclusiones: A pesar del riesgo de complicaciones postoperatorias y de la necesidad de operaciones múltiples, la reconstrucción fálica con CLAR y colocación de implante protésico personalizado puede mejorar el impacto en la función urinaria y sexual secundario a la pérdida del pene.

Introduction

Loss of penile tissue is a serious complication for urinary, copulatory, and ejaculatory function. Different techniques of phalloplasty have been described, useful for individuals with congenital aphalia, traumatic loss of the phallus, or gender dysphoria.[1] The simplest technique of phalloplasty is the rotation pedicled tubular flap with skin of the abdomen or groin, lacking sensitivity.[2] Microsurgical advances have allowed plastic surgeons to develop phalloplasty techniques with free grafting. Thus, since Chang and Hwang[3] described phalloplasty with radial forearm free flap (RFFF), this technique has become the standard for the construction of a neophallus.[1] For this reason, female to male transsexualism is used.[4,5] Also in genetic males, it is the first choice to perform total genital reconstruction, thanks to the fact that it makes it possible to recover sensitivity and can accommodate a penile prosthesis.[6]

We present a case of penile loss due to abscess after oral mucosal graft cavernoplasty to treat Peyronie's disease.[7] In this patient, the performance of RFFF and penile prosthesis implantation has made it possible to partially recover his psychological, cosmetic, urinary, orgasmic, and copulatory sequelae.

Material and methods

A 57-year-old male was referred to our center for having been operated on in another institution due to Peyronie's disease, where cavernoplasty was performed with an oral mucosa graft, which presented postoperative complications leading to penile necrosis, requiring serial debridement resulting in subtotal penile amputation. The patient had severe anxiety syndrome. The CT scan performed at our institution showed a necrotic collection in the cavernous body with air inside (Appendix A, supplementary material). Therefore, abscess drainage, new debridement to the root of the cavernous bodies, and placement of hypogastric carcass were performed. The cultures obtained showed amoxicillin-clavulanate-resistant *Escherichia coli*, piperacillin, tazobactam and trimethoprim-sulfamethoxazole, and *Streptococcus viridans* sensitive to all antibiotics evaluated. Treatment with iv vancomycin was performed.

Seven weeks later, after confirmation of repeated negative cultures, a complete reconstruction of the penis is carried out, and a year and a half later, placement of a 3-component inflatable penile prosthesis, personalized with a single body implanted in the root of its own corpus cavernosum.

Surgical technique

Penile reconstruction was performed by left-sided RFFF and neourethral formation using the 'tube-in-tube' technique, keeping the radial artery and the concomitant veins as pedicles (Fig. 1). The cephalic vein and the lateral antebrachial cutaneous nerve were included. De-epidermization and folding of the area corresponding to neourethra around the 16