ORIGINAL RESEARCH

Penile Prosthesis Implantation in Patients with a History of Total Phallic Construction

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ABSTRACT

Introduction. Outcomes following penile prosthesis implantation in patients with a history of total phallic construction are not well described.
Aim. The aim of this study was to evaluate outcomes following neophallus penile prosthesis placement.
Methods. Retrospective review penile prosthesis placement in patients with prior total phallic construction. GORE-TEX® (Gore Medical, Flagstaff, AZ) sleeve neotunica construction was utilized in all patients.
Main Outcome Measure. Success defined as patient sexual activity with a functioning prosthesis.
Results. Thirty-one patients underwent neophallic prosthesis implantation at a mean 35.6 years of age. Prosthesis placement occurred at an average 56.3 months following phallic construction and follow-up was a mean of 59.7 months. Malleable prostheses were placed in 21 patients and inflatable in 10; implants were bilateral in 94%. Six percent experienced operative complications including a bladder injury (1) and phallic flap arterial injury (1). Postoperative complications occurred in 23% at a median 5.5 months following placement. Five prostheses were explanted secondary to infection or erosion and two additional required revisions. Of the explanted prosthesis two were later replaced without further complication. Eighty-one percent of patients were sexually active following prosthesis placement.
Conclusions. Penile prosthesis placement is possible in patients with prior penile reconstruction/phallic construction. Although complications rates appear to be elevated in this population compared with historic controls of normal anatomic men, the majority of patients in this series were sexually active following prosthesis placement. This demonstrates the utility of prosthesis implantation in these difficult patients. **Zuckerman JM, Smentkowski K, Gilbert D, Storme O, Jordan G, Virasoro R, Tonkin J, and McCammon K. Penile prosthesis implantation in patients with a history of total phallic construction. J Sex Med 2015;12:2485–2491.**

Key Words. Phallic Construction; Penile Prosthesis; Neophallus; Transsexual

Introduction

Since its initial description by Borgoras in 1936, flaps have been used for phallic reconstruction for a variety of indications [1]. Techniques have evolved over the years, with the majority of phallic constructions performed today utilizing free flap tissue transfer, primarily from the ulnar forearm [2,3]. While achieving an acceptable cosmetic result for many patients, these phalluses often do not achieve rigidity sufficient for sexual function. A multitude of surgical and non-surgical "stiffeners" have been attempted, including autologous cartilage, bone, and acrylic

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splints [4–7]. Contemporary procedures employ the use of either a semi-rigid or inflatable prosthetic for implantation.

Placing an implant into an insensate neophallus significantly increases the risk for implant erosion and subsequent need for explantation of the device. For this reason, we do not consider a patient to be a candidate for prosthesis placement until the development of protective tactile sensation of the flap. This process usually takes 6–9 months and therefore we counsel patients to anticipate waiting 1 year after phallic construction before considering implantation. Early in our experience with phallic free flaps, we created sensation through coaptation of cutaneous nerves of the flap to either the genitofemoral or ilioinguinal nerves. While successful, we found improvements in both protective and erogenous sensibility utilizing the pudendal or dorsal penile/clitoral nerves and this continues to be our preferred approach [8].

Our center placed its first neophallus penile implant in 1983, a device that subsequently migrated, became infected, and was explanted. We have previously described our early experience utilizing a variety of devices and surgical approaches with mixed results [9,10]. We have since refined our technique with improved results and present a more contemporary series of neophallus prosthesis implantation, including our current technique.

Materials and Methods

After approval by the local institutional review board committee, we performed a retrospective review of patients at our institution that underwent penile prosthesis placement from 1993 to 2013. We selected for review only those patients we identified as having previously undergone a total phallic construction at our center. Details regarding the phallic construction, including indication, surgical approach, vascular/nervous supply and complications were tabulated. Penile implant data were extracted for type of device, operative and postoperative complications, and surgical revisions. The prosthetic implant was considered successful if patients were sexually active with a functioning device at last follow up.

Early in this series, we used primarily the Duraphase malleable prosthesis for implantation. Over the last 10 years our preference for malleable prostheses has been replaced almost entirely by that of a three-piece inflatable device, and this is currently our implant of choice.

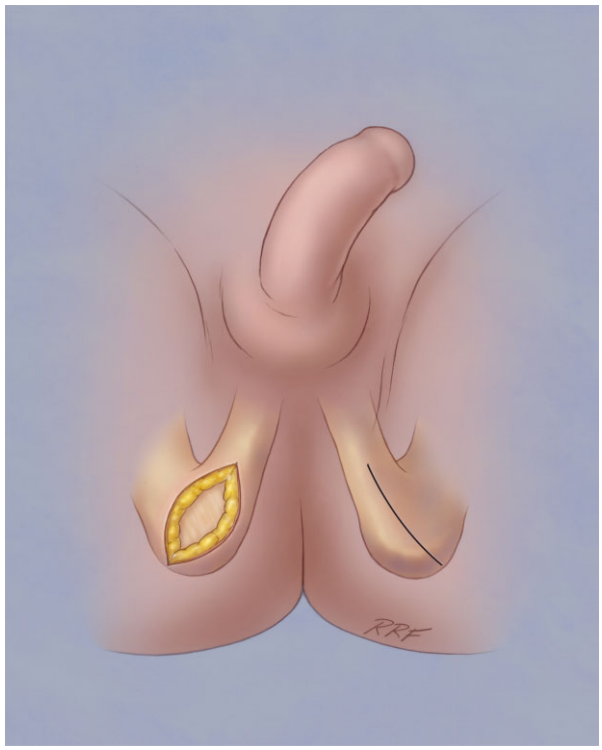

Figure 1 Illustration of incisions overlying the ischial tuberosities.

We have standardized our surgical approach for this procedure. Vancomycin and Gentamicin are administered preoperatively unless medication allergies preclude their use. Sequential compression devices are placed on the lower extremities and the patient is placed in the dorsal lithotomy position. Just as with virgin prosthesis placement patients are shaved in the operating room on the day of surgery and undergo a 10-minute surgical site prep with chlorhexidine and alcohol. Bilateral incisions are made in the perineum overlying the ischial tuberosities (Figure 1). The inferior pubic rami are exposed, as they are the sites used to anchor the prosthesis. The neophallus shaft is then dilated bilaterally through the perineal incision, first with scissors then using Hegar sounds or Brooks dilators (Figure 2). We take care to leave some soft tissue on the distal phallus to provide a cushion and limit erosion.

Once we have successfully created a space for the implant and measured its length, the prosthesis is opened and prepared on the back table. We create "neotunica" utilizing polytetrafluoroethylene (GORE-TEX®, Gore Medical, Flagstaff, AZ, USA) sleeves fashioned around the prosthesis cylinders (Figure 3). The prosthesis is then placed into