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Surgical Outcomes of Erectile Implants After Phalloplasty: Retrospective Analysis of 95 Procedures

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ABSTRACT

Introduction: The creation of a neophallus is a complex surgery that must meet functional and esthetic requirements. It is a long and demanding surgical process whose final stage consists of the implantation of a rigid or inflatable material that can be used to reproduce an erection. Data in the literature are scarce, with only the pioneering series present, which includes the use of the first devices and techniques.

Aim: To report the outcome of patients with phalloplasty after implantation of erectile implants using standardized surgical techniques and the use of recent prosthesis types with or without a vascular graft.

Methods: This is a retrospective hospital-based analysis of all patients with phalloplasty who underwent implantation of an erectile prosthesis from March 2007 to May 2015. Factors associated with complications were investigated by multivariate logistic regression analysis.

Main Outcome Measures: Early-onset (during the first month after surgery) and late-onset complications, including erosion, infections, malpositioning, and dysfunction.

Results: Sixty-nine patients were included in the study and 95 procedures were analyzed. After a median follow-up of 4 years (minimum = 169 days, maximum = 6.1 years), the original prosthesis was still in place in 43 patients (62.3%). Patients underwent phalloplasty after female-to-male transsexualism (n = 62, 89.9%), malformation (n = 4, 5.8%), or trauma (n = 3, 4.3%). The proportions for the different types of phalloplasty were 58% for forearm free flap phalloplasty (n = 40), 33.3% for suprapubic phalloplasty (n = 23), and 7% for other (n = 6). The erectile prostheses used were the two-piece AMS Ambicor (n = 71, 74.7%), the Ambicor with a vascular graft (n = 19, 20.0%), and the AMS 700CXR, AMS 700CX, or AMS600-650 (n = 5, 5.2%). There were no early-onset complications in 89 procedures (93.7%) and, when present, they were always related to infection (n = 4, 4.2%). Late-onset complications were erosion (n = 4, 4.2%), infection (n = 4, 4.2%), dysfunction (n = 10, 10.5%), and malpositioning (n = 12, 12.6%). No significant difference was observed for malpositioning (12.7% vs 10.5%, $P = .87$) and dysfunction (7.0% vs 10.5%, $P = .78$) between the AMS Ambicor prosthesis and the Ambicor prosthesis with a vascular graft.

Conclusion: This study provides updated data on complications after the implantation of erectile implants. Multicenter studies, including the evaluation of patient satisfaction, are needed to increase our understanding of factors associated with the outcomes.

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Key Words: Erectile Device; Phalloplasty; Female-to-Male Transsexualism; Neophallus; Penile Prosthesis; Transsexualism

INTRODUCTION

The creation of a neophallus is a complex surgery that must meet functional and esthetic requirements. It is a long and demanding surgical process whose final stage consists of the implantation of a rigid or inflatable material that can be used to reproduce an erection.

Taking into account the increase in the prevalence of transsexualism during the past 50 years, the current transsexual population is estimated to be 2.6 per 100,000 individuals.[1]

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The application of this surgery to female-to-male (FtM) transsexuals has made it possible to have a large series of patients and to better understand the predictors of complications. Advances in our knowledge have resulted in the improvement of surgical techniques, in particular the insertion of the prosthesis. This is one of the main objectives of penile reconstruction, with phalloplasty rigidity being requested by nearly 86% of transsexuals.[2]

Since the first reported insertion of a penis implant in a phalloplasty by Puckett and Montie[3] in 1978, case series of varying degrees of significance have followed, including a series of 35 patients described by Hoebeke et al,[4] which reported 20% adverse events after surgery. Currently, the largest retrospective series is the one described by Hoebeke et al[5] involving 129 patients and which consists solely of forearm flap phalloplasty with the use of several prosthesis types, some of which are no longer commercially available. This series showed a tendency toward better results with the two-piece prosthesis than with one-piece prostheses.

Surgical techniques have diversified since this series, notably with the suprapubic phalloplasty technique,[6] in which the use of a prosthesis with a vascular graft aims to better anchor the prosthesis and to decrease the capsular formation around it. Therefore, new data are required to improve our knowledge of the results of these techniques.

AIM

The aim of this study was to describe the early- and long-term outcomes of patients with phalloplasty after the implantation of an erectile prosthesis and to investigate the patient and surgical factors associated with complications. We were specifically interested in analyzing the influence of the type of phalloplasty and the type of prosthesis used on the two main complications, malpositioning and dysfunction.

METHODS

Population

All patients with phalloplasty who were admitted to our unit from March 2007 through May 2015 and who underwent implantation of an erectile prosthesis were included in this study. Patients with any type of phalloplasty were included: forearm free flap phalloplasty or suprapubic phalloplasty with an inguinal or a femoral flap. Most phalloplasties were performed at our institution; however, this series includes patients who had their initial phalloplasty performed at other institutions.

All patients included in this study verbally accepted that their data could be published or used for scientific purposes in accordance with the Declaration of Helsinki on human rights and ethical standards of research.

Surgery

Surgical procedures have been standardized since 2007, although there is no gold standard for the phalloplasty technique.[7] In consequence, decisions were made after close collaboration between the patient and the surgeon. The most frequently used technique was forearm flap phalloplasty (Figure 1) or suprapubic phalloplasty (Figure 2).

Figure 1. Erectile implant after free radial flap phalloplasty (transgender patient).

Implantation of the erectile prosthesis was carried out as a secondary procedure. The implantation procedure was defined as

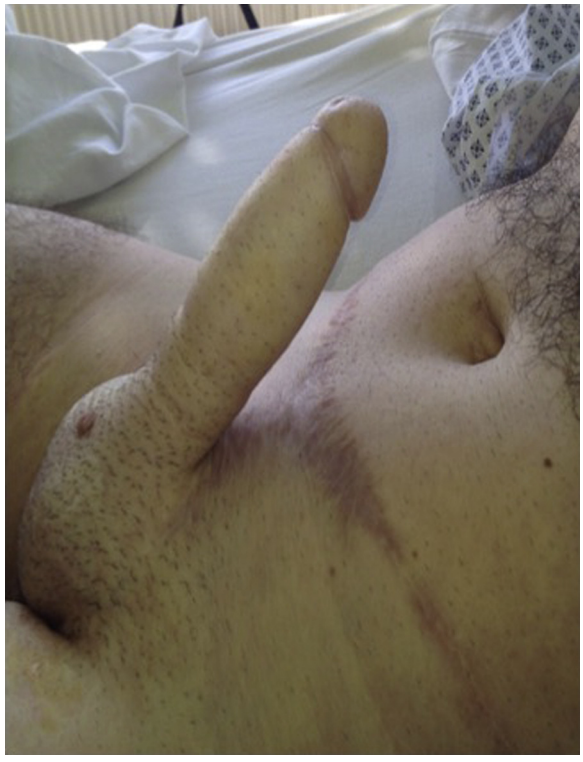

Figure 2. Erectile implant after suprapubic phalloplasty (transgender patient).