

SEXUAL MEDICINE REVIEWS

Penile Lengthening, Girth, and Size Preservation at the Time of Penile Prosthesis Insertion

Henry Tran, MD, Robert Goldfarb, MD, Anika Ackerman, MD, and Robert J. Valenzuela, MD

ABSTRACT

Introduction: Penile prosthetic devices are the gold standard treatment of medication-refractory erectile dysfunction. Inflatable penile prosthetic (IPP) devices have been available and used for more than four decades. Oftentimes, medical conditions causing erectile dysfunction also cause penile shortening, causing decreased patient quality of life.

Aim: To identify and review all available penile lengthening procedures that can be performed at time of IPP insertion.

Methods: An extensive, systematic literature review was performed using PubMed searching for key terms *penile lengthening, inflatable penile prosthesis, penile girth, corporoplasty, glans augmentation, and penile enhancement*; all articles with subjective and/or objective penile length outcomes were reviewed.

Main Outcome Measures: A review of various techniques for penile length and girth preservation and enhancement during penile prosthesis insertion.

Results: Several advanced and novel techniques were found for penile length preservation and enhancement at time of IPP insertion, including the sub-coronal IPP insertion technique, and adjuvant maneuvers during insertion, such as the sliding technique, modified sliding technique, multiple slice technique, and circumferential incision and grafting. Other adjuvant techniques that can enhance perception of increased length include ventral phalloplasty, suprapubic lipectomy, and suspensory ligament release. Further enhancement can be obtained using augmentation corporoplasty and glans augmentation with hyaluronic acid and other fillers. The different techniques vary in complexity and could require specialized training and experience. Maximum length gain appears to be limited by the length of the neurovascular bundles.

Conclusion: Overall, surgical penile lengthening procedures at time of IPP insertion appear safe and effective for treatment of patients with penile shortening and severe erectile dysfunction. These therapies can significantly improve patient self-esteem and quality of life in properly selected patients. **Tran H, Goldfarb R, Ackerman A, Valenzuela RJ. Penile Lengthening, Girth and Size Preservation at the Time of Penile Prosthesis Insertion. Sex Med Rev 2017;X:XXX–XXX.**

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Key Words: Penile Prosthesis; Penile Augmentation; Penile Lengthening; Inflatable Penile Prosthesis; Malleable Penile Prosthesis; Penile Implant

INTRODUCTION

Penile prosthetic devices are the gold standard treatment of medication-refractory erectile dysfunction (ED). Available prosthetic devices include the malleable penile prosthesis (MPP) and the two-piece and three-piece inflatable penile prostheses (IPPs). IPPs have been available and used for more than four decades.^{1,2}

Recent studies have shown that IPP devices account for 96.2% of all penile prostheses inserted in the United States and MPPs constitute the remainder.^{3,4} Multiple studies have shown high patient and partner satisfaction rates for treatment of ED with the penile prosthesis. In a series of 200 patients, Montorsi et al⁵ reported 98% patient and 96% partner satisfaction rates. Oftentimes, medical conditions causing ED also can cause loss of penile length. Patients with decreased penile length and girth have higher rates of dissatisfaction and decreased quality of life.⁶ Men commonly associate the length of their penis with their degree of masculinity.⁷ Penile shortening can be caused by conditions such as Peyronie disease (PD), priapism with corporal fibrosis, and prostate cancer treated with radical prostatectomy,

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Department of Urology, Columbia University Medical Center, New York, NY, USA

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radiation, and or/androgen deprivation therapy.^{8–12} Up to 80% of patients with PD have subjective loss of penile length. The impact on quality of life can be tremendous. The most common issue after any prosthesis insertion is subjective loss of length. The insertion of an IPP has not been shown to change stretched penile length, which is shorter than the normal erect length.¹³ Some patients who have subjective loss of length can have lower International Index of Erectile Function (IIEF) and Erectile Dysfunction Inventory of Treatment Satisfaction scores.¹³ Other studies have shown no difference in erectile function domain scores even with subjective loss of length.^{11,12} Nonetheless, patients with penile shortening in addition to severe ED can benefit from penile lengthening surgical techniques at time of penile prosthesis insertion. Numerous techniques to preserve and enhance penile length and girth at time of IPP and MPP insertion have been reported in the literature and are reviewed in this article.

NOVEL TECHNIQUE FOR IPP INSERTION

Since the introduction of the IPP in 1973 by Brantley Scott et al,¹⁴ there has been a steady evolution of the device and techniques for surgical implantation.¹⁵ The two classically described surgical techniques include the infra-pubic and penoscrotal approaches. Advantages of the penoscrotal approach include the ability to anchor the pump directly into the scrotum, improved exposure of the corporal bodies, and lower risk of dorsal nerve injury. The advantages of the infra-pubic approach include direct visualization of reservoir insertion and more rapid device insertion. Infection rates and patient satisfaction appear comparable.^{3,16,17} The most common complaint associated with these techniques is loss of penile length. This perception might be due to lack of glans engorgement.¹⁸ Smith¹⁹ described a sub-coronal technique for the insertion of a semirigid penile prosthesis in 1981. This technique demonstrated excellent cosmetic results and lower risk of corporal crossover during dilatation. The sub-coronal approach to the MPP is already commonly used.²⁰ Recently, a novel technique for the insertion of a multicomponent IPP using the sub-coronal approach has shown promising results for greater penile length preservation.^{15,21}

The sub-coronal approach begins with a distal circumcising incision 2 cm proximal to the coronal sulcus of the glans. After the circumferential incision, the penis is completely degloved to the level proximal to the penoscrotal junction, taking care to avoid entry through the Buck fascia and damage to the neurovascular bundles. The penile and scrotal skin is excluded from the surgical field using 0-0 braided polyglactin sutures circumferentially to evert the Dartos fascia (Figure 1). A space for the reservoir is developed through the external inguinal ring (Figure 2). Stay sutures using 0-0 braided polyglactin are placed through the corpora bilaterally lateral to the urethra and proximal to the penoscrotal junction. A 1.5-cm corporotomy is made, followed by corporal-sparing dilation dorsally to the level of the mid-glans



Figure 1. Penile degloving incision used for the sub-coronal inflatable penile prosthesis insertion technique. Corporotomy incisions are made at the base of the cavernosal bodies bilaterally.

using 9-inch Metzenbaum scissors. With this approach, the entire urethra and corporal bodies are visualized during device insertion. Then, the Furlow inserter is used for measurements. The reservoir and then the corporal cylinders are inserted (Figure 3). Penile modeling, plication stitches, relaxing incisions, and glans fixation can be performed to correct any abnormal curvature or hypermobile glans. The scrotal pump is inserted posterior to the testes, and all tubing is buried and attached. Then, the Dartos fascia and sub-coronal incision are closed.¹⁵

A recently published single-surgeon series of 200 patients treated with the sub-coronal approach showed that patients

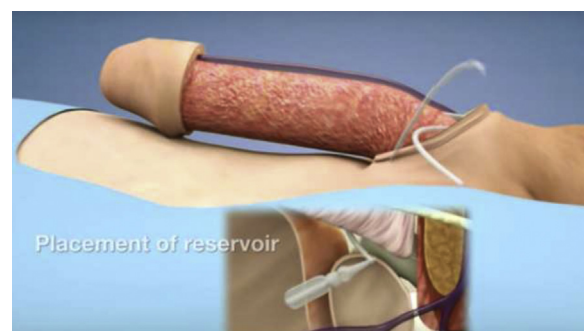


Figure 2. Sub-coronal technique of reservoir placement. Blunt dissection develops space within the external inguinal ring, followed by reservoir insertion.

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