Andrianne Mini-Jupette Graft at the Time of Inflatable Penile Prosthesis Placement for the Management of Post-Prostatectomy Climacturia and Minimal Urinary Incontinence

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ABSTRACT

Background: After radical prostatectomy (RP), erectile dysfunction, often necessitating the need for inflatable penile prosthesis (IPP) insertion, and urinary incontinence and climacturia can ensue.

Aim: To assess the efficacy and safety of the mini-jupette, a mesh used to approximate the medial aspects of the 2 corporotomies at the time of IPP insertion, for the management of climacturia and urine leakage in patients with minimal incontinence.

Methods: We conducted a pilot multicenter study of patients with post-RP erectile dysfunction and climacturia and/or mild urinary incontinence (≤ 2 pads/day [ppd]) undergoing IPP insertion with concomitant placement of a mini-jupette graft.

Outcomes: Pre- and postoperative erectile function, continence and climacturia, and overall surgical outcomes were assessed.

Results: 38 patients underwent the mini-jupette procedure. The mean age of the population was 65.3 years (SD = 7.7). 30 had post-RP climacturia and 32 patients had post-RP incontinence (mean = 1.3 ppd, SD = 0.8). 31 patients received Coloplast Titan, 4 received AMS 700 LGX, and 3 received AMS 700 CX IPPs. Mean corporotomy size was 2.9 cm (SD = 1.0). Mean graft measurements were 3.2 cm (SD = 0.9) for width, 3.3 cm (SD = 1.3) for length, and 11.0 cm² (SD = 5.1) for surface area. At a mean follow-up of 5.1 months (SD = 6.9), there were 5 postoperative complications (13.2%) of which 4 required explantation. Climacturia and incontinence were subjectively improved in 92.8% and 85.7%, respectively. Mean ppd decreased by 1.3 postoperatively.

Clinical Implications: The Andrianne mini-jupette is a feasible adjunct to IPP placement that can be used for subsets of patients with post-RP climacturia and/or minimal incontinence.

Strengths and Limitations: Strengths of this study include the novel nature of this intervention, the multi-institutional nature of the study, and the promising results demonstrated. Limitations include the retrospective nature of the study and the heterogeneity of the techniques and grafts used by different surgeons involved.

Conclusion: Longer follow-up and larger patient cohorts are needed to confirm the long-term safety and benefits of this intervention. Yafi FA, Andrianne R, Alzweri L, et al. Andrianne Mini-Jupette Graft at the Time of
INTRODUCTION

Erectile dysfunction (ED) is the most common consequence of radical prostatectomy (RP), with a wide range of reported incidence from 6% to 68%. For patients with severe ED that is non-responsive to medical therapy, an inflatable penile prosthesis (IPP) is recommended. This procedure is associated with lasting results and excellent patient and partner satisfaction rates. Similarly, after RP, urinary incontinence can develop in 2.5% to 90% of patients. For patients with significant stress urinary incontinence, the artificial urinary sphincter (AUS) offers good results and is considered the gold standard. For patients with mild to moderate incontinence, a male suburethral sling can be considered. When ED and stress urinary incontinence occur together, concomitant placement of an IPP and a urinary continence device (AUS or sling) might be advisable.

A much less commonly discussed complication of RP is climacturia, or the involuntary leakage of urine during sexual intercourse. Data suggest that climacturia occurs in 15% to 64% of patients after RP. Despite its considerable prevalence, very little literature is currently available on its management. Some suggested treatment strategies include pre-coital voiding, condoms, constricting loops, and medications that usually are not efficacious. More recently, Christine and Bella reported excellent results in potent men with climacturia using a male suburethral sling.

In 2005, Robert Andrianne conceived placing a graft across the urethra during IPP placement as a means to address climacturia at the time of IPP placement. He sutured the graft to the urethra during IPP placement as a means to address climacturia at the time of IPP placement. He hypothesized that, as the IPP cylinders expanded at inflation, the graft would apply tension on the urethra, thus limiting climacturia and potentially minimal incontinence. His results have never been formally published but he has been an enthusiastic proponent of the intervention and performed multiple procedures over the ensuing 13 years. We report on the results of this adjunctive procedure to IPP placement in this prospective multicenter, multinational, investigational pilot study.

PREOPERATIVE PREPARATION

Preoperative preparation for the mini-jupette consists of preoperative evaluation of the ED and incontinence aspects of the patient. The ED component can be evaluated clinically in multiple ways: history, previous unsuccessful conservative ED treatment, ED questionnaire (eg, 5-item International Index of Erectile Function [IIEF-5]), physical examination, and/or preoperative objective assessment of erectile function with intracavernosal injection of a vasodilating agent with or without penile duplex Doppler ultrasonography.

Urinary incontinence is similarly assessed with a combination of history, physical examination, quantification of incontinence (ppd), cystoscopy, and urodynamic studies if urge incontinence is suspected. All patients who have undergone RP should be queried on the presence, severity, and duration of climacturia and any previous treatments to solve the problem.

Patients were thoroughly advised about the risks and benefits of this intervention. They were clearly informed that although this was an investigational procedure, it followed well-established surgical principles and was likely less invasive than alternatives such as a male sling or AUS. Risks such as device infection, mechanical failure, cuff or pump complications, mesh erosion, urinary obstruction, and pain, among others, were discussed with the patients.

INTRAOPERATIVE CONSIDERATIONS

As for routine IPP placement, preoperative antibiotics are administered, the patient is shaved and prepped, and a sterile urethral catheter is placed. Then, a penoscrotal or sub-coronal incision is performed. After exposure of the urethra and the corpora, proximal bilateral symmetrical corporotomies at least 2 cm in length are made and their lengths are recorded. Stay sutures are placed at the discretion of the surgeon. The distance between the medial aspects of the corporotomies is measured. Then, a mini-jupette graft is fashioned according to these measurements: length is defined as the size of the corporotomy and width is defined as the medial inter-corporal distance. Surgeons could select the graft material of their choice to create the sling. Once the graft is tailored appropriately, it is sewn to the medial corporotomies with running non-absorbable sutures to the medial corporotomies while taking care not to injure the urethra (Figure 1). A clamp can be placed under the sling to make sure there is no tension on the urethra. If tension is noted, then the sling is revised and a wider sling is used. Once the sling is in place, the IPP reservoir and bilateral cylinders are placed and the corporotomies are

INDICATIONS FOR PROCEDURE

The mini-jupette is indicated for patients with ED who have concomitant climacturia and/or mild stress urinary incontinence after prostate surgery. Minimal stress urinary incontinence was defined as using no more than 2 pads per day (ppd).
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