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Case Report

Simultaneous Midurethral Sling Placement and Gender-Affirming Vaginectomy: A Case Report

Jaya Prakash[1*], Weinstein Milena[2], Kim-Ortega Youngwu[2]

[1]Department of Obstetrics and Gynecology, Mass General Brigham, USA

[2]Department of Urogynecology and Reconstructive Pelvic Surgery, Massachusetts General Hospital, 55 Fruit Street, Boston, MA 02114, USA

[*]**Corresponding author**: Jaya Prakash, Department of Urogynecology and Reconstructive Pelvic Surgery; Massachusetts General Hospital, 75 Francis Street Boston, MA 02115, USA

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Abstract

Background: Gender-affirming surgery (GAS) plays a vital role in the surgical transition for many transgender and nonbinary individuals, significantly improving quality of life. Among transgender men, vaginectomy is performed to alleviate gender dysphoria associated with presence of the vaginal canal. Stress urinary incontinence (SUI) is a common type of pelvic floor disorder though its prevalence is unknown among the transgender male population. Minimally invasive mid-urethral slings are considered the gold standard for surgical treatment of SUI. Limited data exist on the role of simultaneous sling placements performed for transmasculine patients undergoing pelvic GAS.

Case Presentation: We present the case of a 52-year-old transgender man with a history of SUI who underwent simultaneous gender-affirming vaginectomy and midurethral sling placement by the urogynecology team, followed by simultaneous urethroplasty and metoidioplasty by the urology team. The procedure was completed successfully. Postoperative recovery was largely uneventful9o0o aside from a small neo-urethrocutaneous fistula that was repaired surgically. At 12-month follow-up, the patient reported sustained urinary continence and high satisfaction with functional and aesthetic outcomes.

Discussion: This case highlights the feasibility and benefits of combining vaginectomy with midurethral sling placement in transgender men with underlying SUI. This approach may optimize patient outcomes by minimizing cumulative surgical burden, reducing anesthesia exposure, and streamlining the recovery process. However, careful patient selection and multidisciplinary planning are crucial to mitigate risks, particularly given the complex pelvic anatomy and the common prior surgical history in this population.

Keywords: Gender affirming surgery; Transgender health; Stress urinary incontinence; Vaginectomy

Introduction

Pelvic gender-affirming surgery (GAS) is a crucial component of surgical transition for many transgender and nonbinary individuals. Over the past two decades, the utilization of GAS has significantly increased throughout the United States. A review from 2019 showed that 25% to 35% of transgender and nonbinary patients have undergone a form of GAS. [1] These procedures involve multidisciplinary procedures (plastic, urologic, gynecologic) that can allow for significant improvements in quality of life. [2] Among transgender men, masculinizing pelvic GAS procedures can include colpocleisis, vaginectomy, scrotoplasty, metoidioplasty, and phalloplasty. [3] Vaginectomy is often performed as it can alleviate gender dysphoria associated with 1) presence of the vagina and 2) gynecologic screening. [3] The surgical technique for vaginectomy typically involves

excision and/or destruction of vaginal mucosa with subsequent closure of the vaginal remnant via colpocleisis. [4] Vaginectomy could be performed as a separate procedure or combined with hysterectomy. [5] This, in turn, can have repercussions for pelvic floor dysfunction. A systematic review and meta-analysis of 17 studies considered the consequences of pelvic GAS in pelvic floor function. Urinary incontinence was found to affect up to 50% of transgender men who underwent hysterectomy and other reconstructive pelvic surgeries. Vaginectomy was associated with higher rates of micturition disorders, stress urinary incontinence (SUI), and overactive bladder that were thought to be attributed to disruption of the surrounding pelvic floor muscles during surgical reconstruction [6].

Midurethral sling placement is considered the gold-standard surgical intervention for SUI, offering durable symptom relief through urethral support. [7] Unfortunately, as there is limited data regarding the postoperative development of SUI following pelvic GAS, there are no standardized techniques to prevent this complication. [8] Given the potential benefits of reducing the cumulative surgical burden and streamlining recovery, combining vaginectomy with midurethral sling placement in transgender men may play a role in improved management of this patient population. The following report describes the case of a transgender man who underwent simultaneous vaginectomy and mid-urethral sling placement, contributing to the growing body of evidence on best practices in transgender surgical care.

Case Presentation

A 52-year-old transgender man with a history of gender dysphoria and stress urinary incontinence presented to urogynecology and pelvic reconstructive surgery (UPRS) clinic for discussion of gender affirming surgery. He had been on testosterone therapy for four years and had previously undergone masculinization chest surgery as well as a total laparoscopic hysterectomy with bilateral salpingo-oophorectomy. He did not have a significant medical history other than adjustment disorder and dissociative disorder that were exacerbated by multiple psychosocial stressors at the time. His longstanding stress urinary incontinence was initially managed with pelvic floor physical therapy and behavioral modifications, though he had to discontinue this regimen after two months given a lapse in insurance coverage.

The patient was counseled on an anterior vaginal flap advancement and use for urethroplasty with resection of remaining vaginal tissue followed by closure of vaginal canal. Of note, he preoperatively endorsed bothersome SUI with physical exam findings notable for a positive cough stress test alongside complete emptying. He was provided options of a staged procedure with correction of SUI after vaginectomy versus simultaneous sling at the time of pelvic GAS. The risks, benefits, and alternative management options were reviewed. Given the potential advantages of a single operative session, the decision was made to proceed with simultaneous vaginectomy and midurethral sling placement.

Surgical Technique

The patient underwent gender-affirming vaginectomy, creation of anterior vaginal flap, placement of midurethral sling, cystoscopy with placement of suprapubic catheter, and perineoplasty. The sites of anticipated dissection (posterior, lateral, and apical vaginal walls) were injected with dilute solution of Vasopressin. A dissection of the vaginal epithelium was performed from the hymen posteriorly along the posterior and lateral vaginal epithelium to the apical region. The anterior vaginal epithelium dissection and preparation of anterior vaginal flap was performed. The vaginal epithelium was undermined with the flap along the entire anterior vaginal wall length and width with dissection down to the external urethral meatus. The muscularis layer at the apex was closed with purse-string sutures to serially obliterate the vaginal canal and close the opening just proximal to the urethrovesical junction, approximately 3-4 cm from the meatus.

The transobturator mid-urethral sling was placed at this time. The suburethral region had already been completely dissection with the entire urethra exposed as a result of the aforementioned anterior vaginal flap. An incision was made below the adductor longus tendon at the level of the clitoris, followed by guidance of an Obtryx™ II (Boston Scientific, USA) trocar through the left adductor region of the thigh and obturator membrane where it was met by a finger placed periurethrally on the left. The sling was attached, and the course of the trocar was reversed, with this procedure repeated on the contralateral side. Cystourethroscopy confirmed the integrity of the bladder and urethra. The sling was positioned tension-free under the urethra and anchored using 2-0 Vicryl sutures at 5 and 7 o'clock. The remainder of the muscularis was approximated using interrupted sutures that closed the rectovaginal septum posteriorly to the pubocervical and urethral fascia anteriorly.

Extended perineorrhaphy was then completed using a series of interrupted sutures on 0-Vicryl to approximate the perineal body. The reconstructive urology team then proceeded with release of suspensory ligament and tubulirization of the labia minora and the anterior vaginal flap that was created by the urogynecologist. At the end of the procedure, the patient had transurethral and suprapubic catheters.

Postoperative Course

The patient recovered well with minimal postoperative pain that was managed with nonopioid analgesia. A Foley catheter was maintained for 4 weeks postoperatively, followed by a successful voiding trial. His suprapubic tube was draining somewhat cloudy

urine and was associated with suprapubic cramps intermittently. At that time, he was treated for a presumed UTI with a course of Bactrim BID for 7 days. At the 7-week follow-up appointment, he reported some leakage of urine from the left labial area, with exam findings notable for a small 0.3 cm-sized fistula. The suprapubic catheter was removed at this visit. He reported improvement of SUI symptoms and felt happy with both the functional and aesthetic outcomes of surgery. A 12-month follow-up confirmed continued urinary continence, with no demonstrable evidence of voiding dysfunction or recurrent SUI.

Discussion

This case illustrates the feasibility and benefits of simultaneous gender-affirming vaginectomy and SUI surgical management. Combining these procedures may improve overall patient experience by reducing the need for multiple surgeries, decreasing cumulative anesthesia exposure, and streamlining recovery. [9,10] However, careful patient selection and a comprehensive understanding of the mechanics of the midurethral sling and pelvic anatomy are essential to optimize outcomes. Challenges include the potential for increased perioperative risk, particularly in patients with prior pelvic surgeries or complex anatomy [11].

Long-term data on the outcomes of transgender patients undergoing midurethral sling placement remain limited, necessitating further research. This is particularly important for the intersection of voiding dysfunction and pelvic GAS as a narrative review considering blind spots in GAS recently noted: "*incontinence and deviated urinary stream were at or above the maximum reported incidence across the systematic reviews in two of the three studies*". [12] Literature suggests that testosterone therapy may influence connective tissue integrity, which could theoretically impact sling efficacy and longevity.[13] Prospective studies examining long-term functional outcomes in this population are needed.

Conclusion

Simultaneous midurethral sling placement and gender-affirming vaginectomy represent a promising approach for transgender men with pre-existing stress urinary incontinence. This case study underscores the importance of individualized, patient-centered surgical planning to maximize both functional and gender-affirming outcomes. Future research should focus on long-term continence rates, patient satisfaction, and the impact of hormonal therapy on surgical success.

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