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IUJ VIDEO

Surgical excision of urethral prolapse

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Abstract
Introduction Urethral prolapse is a rare condition that results in the eversion of the urethral mucosa through the distal urethra. Management is divided into two categories: conservative and surgical treatment.
Methods We present a case of urethral prolapse with severe symptoms that were minimally responsive to topical estrogen. Surgical excision was achieved with resection of the redundant urethral mucosa.
Results This video highlights surgical techniques that can be used for the excision of urethral prolapse.
Conclusions The management of urethral prolapse should be individualized based on symptom severity, anatomical compromise, and surgical morbidity. Surgical management should be considered in cases of vascular compromise or failed medical management.

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Introduction

Urethral prolapse is an eversion of urethral mucosa through the distal urethra. It is a rare condition that is typically seen in postmenopausal and prepubescent African–American women [1, 2]. Patients typically present with asymptomatic vaginal bleeding and upon vaginal examination, a perimeatal mass is identified. Other symptoms may include complaints of a vaginal mass, dysuria, and/or abnormal voiding.

The exact etiology of urethral prolapse is unknown. One theory suggests that prolapse might occur as a result of separation of the two muscular layers of the urethra [1–4]. This separation may be a congenital or an acquired anatomical defect. Another theory proposes a hormonal contribution—with atrophy from a lack of estrogen causing retraction of the epithelial edge of the external urethral meatus resulting in urethral prolapse. This hormonal theory may explain why the distribution of urethral prolapse is bimodal with regard to age [4, 5]. Diagnosis of urethral prolapse is made by physical examination. It is typically described as a hemorrhagic, doughnut-shaped vaginal mass surrounding the urethra [1–5]. Other differential diagnoses that should be considered include: urethral caruncle, urethral diverticulum, Skene's cyst/abscess, vaginal cyst, ectopic ureterocele, and malignancy [6]. Urethral prolapse is distinguished from a urethral caruncle by nearly circumferentially encompassing the entire urethral meatus [7]. If significant edema or anatomical distortion is noted, placement of a Foley catheter will assist with the identification of pertinent anatomy and allow for urinary drainage if urinary retention symptoms are present.

Conservative management is usually the first step in the treatment of uncomplicated mild urethral prolapse. This consists of topical estrogen therapy, antibiotics if an infection is

present, and periodic sitz baths for symptomatic relief. If symptoms improve, long-term vaginal estrogen cream may be used to prevent recurrence [1, 5, 7].

Alternatively, if symptoms are refractory to conservative measures or vascular compromise is suspected, surgical intervention is deemed appropriate. Vascular compromise may occur if significant swelling of the tissue impedes vascular return leading to strangulation and necrosis of the prolapsed tissue. Various surgical procedures have been reported historically and include excision, ligation, fulguration, and cryotherapy [1, 4, 5, 7].

Materials and methods

We present a case of a 62-year-old woman, para 2, who presented with complaints of vaginal bleeding, acute onset urinary incontinence, urinary frequency, and vaginal bulge for the previous 3 weeks. Her past medical and surgical histories were unremarkable. On physical examination, the urethra was noted to prolapse 2 cm beyond the meatus, with surrounding hyperemic tissue. No evidence of infection or vascular compromise was noted. After a review of conservative and surgical treatment options, the patient was started on topical estrogen. The patient was re-examined before proceeding with surgical excision after using topical estrogen for 6 weeks. Although the extent of her prolapse had decreased by 50 %, given the severity of her symptoms and the extent of the prolapse, surgical excision was planned.

The case began with an examination under anesthesia that noted a reduction of the urethral prolapse by 50 % since initial presentation. Next, a self-retaining retractor ring was placed to assist with exposure and visualization. We proceeded with an evaluation of the lower urinary tract. A 360° bladder survey was performed using a 30° cystoscope to rule out anatomical abnormalities with a focus on the trigone. Orthotopic single-system ureters were noted bilaterally. Urethroscopy was performed ensuring no fistulous tracts or defects and a measurement of urethral length was made revealing an overall length of 3.5 cm. A 16-French Foley catheter was then placed.

Next, an injection of a hemostatic agent was performed circumferentially at the proposed new external urethral meatus. Stay sutures were placed at 12, 9, 6, and 3 o'clock using 2–0 absorbable sutures. They were placed in the vaginal epithelium approximately 3 mm from the proposed excision line. With the use of electrocautery, the exposed urethral mucosa was excised in four quadrants. Each quadrant was then re-approximated to the vaginal epithelium by using the previously placed anchoring sutures. Care was taken to ensure a full thickness approximation of the urethral mucosa to the vaginal epithelium to prevent retraction of the urethral tissue. Interrupted 3–0 absorbable sutures were placed to close the intervening sections of the incision line. Last, petroleum-soaked gauze was wrapped around the Foley to assist with patient discomfort upon discharge. The Foley catheter was kept in place for 5 days and was removed followed by a trial of voiding. Pathology revealed benign urothelium with minimal chronic inflammation. At her 6-week follow-up, the patient reported resolution of her urinary symptoms and denied urinary incontinence.

Postoperative management

Postoperative complications following urethral prolapse repair may include urethral stenosis and urinary incontinence. Urethral stenosis can occur from the development of scar tissue at the distal urethra. To help prevent urethral scarring, we prefer to perform this procedure on healthy estrogenized tissue and ensure complete approximation of the urethral mucosa to the vaginal epithelium to prevent retraction of the urethral mucosa. Postoperative urinary incontinence may occur owing to the diminished urethral length following excision; however, this is rare given that the continence mechanism is rarely involved with distal urethral excision. The severity of incontinence will depend on the amount of urethral tissue excised along with the patients baseline urethral functioning.

Conclusion

In conclusion, urethral prolapse is a rare condition and each case should be managed individually with regard to the medical history, surgical morbidity, and severity of symptoms. Surgical intervention should be considered in patients with vascular compromise, urinary retention, or in those in whom conservative measures fail.

Summary

This video presents the surgical management of urethral prolapse. Key principles include ensuring a correct diagnosis of urethral prolapse and full-thickness approximation of the urethral mucosa to the vaginal epithelium for optimal results.

Compliance with ethical standards

Conflicts of interest None.

Consent Written informed consent was obtained from the patient for publication of this video article and any accompanying images.

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