Case – Management of complete bladder prolapse through the urethra

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INTRODUCTION

We present an unusual case of complete bladder prolapse through the urethra after prior colpocleisis for pelvic organ prolapse (POP). Although complete bladder prolapse is rare, urologists and urogynecologists should maintain awareness for this clinical diagnosis to avoid delays in intervention and serious complications.[1] This report will outline the presentation, clinical management, and successful outcomes of surgical interventions for a case of complete bladder prolapse through the urethra.

CASE REPORT

Initial presentation and repair of complete bladder prolapse

Our patient was a 62-year-old nulliparous African-American woman with medical history significant for chronic kidney disease (stage 3B), seizures, type 2 diabetes mellitus, hypertension, atrial fibrillation, and schizoaffective disorder. Her history was also notable for sexual abuse as a child, and perseveration on having bowel movements after meals, often requiring significant periods of increased straining. She had no interest in future sexual activity and given her complex medical and social history, she underwent an uncomplicated total vaginal hysterectomy and bilateral salpingo-oophorectomy, anterior and posterior vaginal wall repair and total colpocleisis for POP, and peri-urethral hydrogel bulking agent injection for intrinsic sphincter deficiency.

Three months after this surgery, she presented to the emergency department complaining of an acute pelvic "bulge" after straining with a bowel movement. Her physical exam demonstrated a protruding pelvic mass, of unclear origin (Figure 1). Given the patient's physical exam and anatomic placement of the catheter below the pelvic mass, there was clinical concern for bladder prolapse. Bedside attempts at manual reduction were unsuccessful. She was taken to the operating room where an exam under anesthesia revealed an intact colpocleisis and that the large prolapsing mass, approximately 15 cm in length, originated from her urethral meatus, consistent with total bladder prolapse through her urethra. Her exam was also notable for a large

(> 5 cm) urethral diameter. Cold compresses were applied to the bladder tissue to assist with vasoconstriction; however, attempts at manual reduction of her prolapsed bladder were unsuccessful due to the edematous, thick tissue. Ultimately, a small incision was made in the urethral epithelium to release a tight band of tissue and bladder reduction was achieved. After the bladder was fully reduced, cystoscopy revealed an intact trigone with bilateral ureteral jets, but no discernable bladder neck or urethra. The urethral meatus was then affixed to the vaginal epithelium and the bladder neck was tapered around a 24 French urethral catheter (Figure 2). Her urethral catheter was maintained for 22 days after surgery.

Further management

The patient's bladder remained reduced in the subsequent months after surgical intervention. However, at 5 months following surgery, she remained bothered by severe urinary incontinence and overactive bladder (OAB) symptoms, despite trials of antimuscarinic medications and intravesical botulinum toxin injections. Cystoscopy demonstrated a small capacity bladder with uninhibited contractions during filling that nearly emptied her bladder, and a wide-open bladder neck with near absence of her urethra, leading to continuous urinary incontinence. Videourodynamics demonstrated a funnel shaped bladder that was freely mobile and prolapsed down past her pubic rami out of her pelvis (Figure 3). She was counseled on surgical options to treat her severe SUI, including radical cystectomy and ileal conduit, suprapubic tube (SPT) placement, autologous fascial pubovaginal sling, and Burch colposuspension. Given her anterior vaginal wall prolapse, freely mobile bladder, and incompetent bladder neck anatomy, we were concerned that a pubovaginal sling would not provide enough support. She was ultimately advised to undergo a Burch colposuspension and cystopexy to address both her urinary incontinence and extreme bladder mobility.

Intraoperatively, the patient was noted to have significant POP, (Aa: 0, Ba: 0, C: -1, GH: 6, PB: 3, TVL: 10, Ap: 0, Bp: 0, D: N/A) an extremely mobile bladder, and a widely patulous urethra, with no tapering of the bladder neck to the distal urethra. Robotic-assisted laparoscopic uterosacral ligament suspension, bladder neck reconstruction, paravaginal defect repair, Burch colposuspension, and SPT placement were performed. She recovered uneventfully and was discharged 3 days after her operation. At 6 weeks after surgery, a voiding cystourethrogram demonstrated no leak. The patient was offered a SPT capping trial, but opted to maintain her SPT. She remains dry from her urethra, with no bladder spasms or pelvic pain, and her bladder remains well reduced.

DISCUSSION

The overall incidence of bladder prolapse through the urethra reported in the literature is limited to case reports in the context of pelvic floor laxity following labor, bladder adenocarcinoma, vesicovaginal fistula, traumatic removal of urethral catheters, or urethral injury from chronic catheterization(s).[1-13] In our patient's case, an extensive psychiatric history contributed to frequent, prolonged episodes of straining with bowel movements, which likely contributed to both her initial POP and subsequent bladder prolapse. Increased abdominal straining against the pressure effect of her colpocleisis lead to eversion of her bladder through the area of least support after colpocleisis, which was her incompetent bladder neck. Fortunately, the acuity of our patient's presentation after onset of her symptoms of "pelvic bulge", as well as the prompt diagnosis and surgical correction of her bladder prolapse spared her any renal function

compromise secondary to outlet and/or ureteral obstruction and she did not require renal decompression.

When there is suspicion for bladder prolapse based on clinical history, careful physical examination should be performed to determine the degree of bladder eversion.[1] Partial bladder eversion may be reduced manually at the bedside or under sedation, thereby avoiding the need for surgical intervention.[8] In instances where manual reduction at bedside is unsuccessful, surgical interventions involving percutaneous nephrostomy tubes or ureteral stents, cystopexy, urethral reconstruction, or cystectomy may be required.[1] Even after initial surgical correction of bladder prolapse through the urethra, as in our patients' case, some patients may require additional surgical intervention for extreme bladder mobility and/or an incompetent bladder neck.

CONCLUSIONS

In this case report, we describe successful reduction of bladder prolapse through the urethra after prior colpocleisis and subsequent surgical correction of a freely mobile bladder and near-absent urethra causing severe urinary incontinence.

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FIGURES AND TABLES

Figure 1. Intraoperative findings: large pelvic mass, measuring approximately 15 cm in length, originating from the urethral meatus, consistent with total bladder prolapse through the urethra.

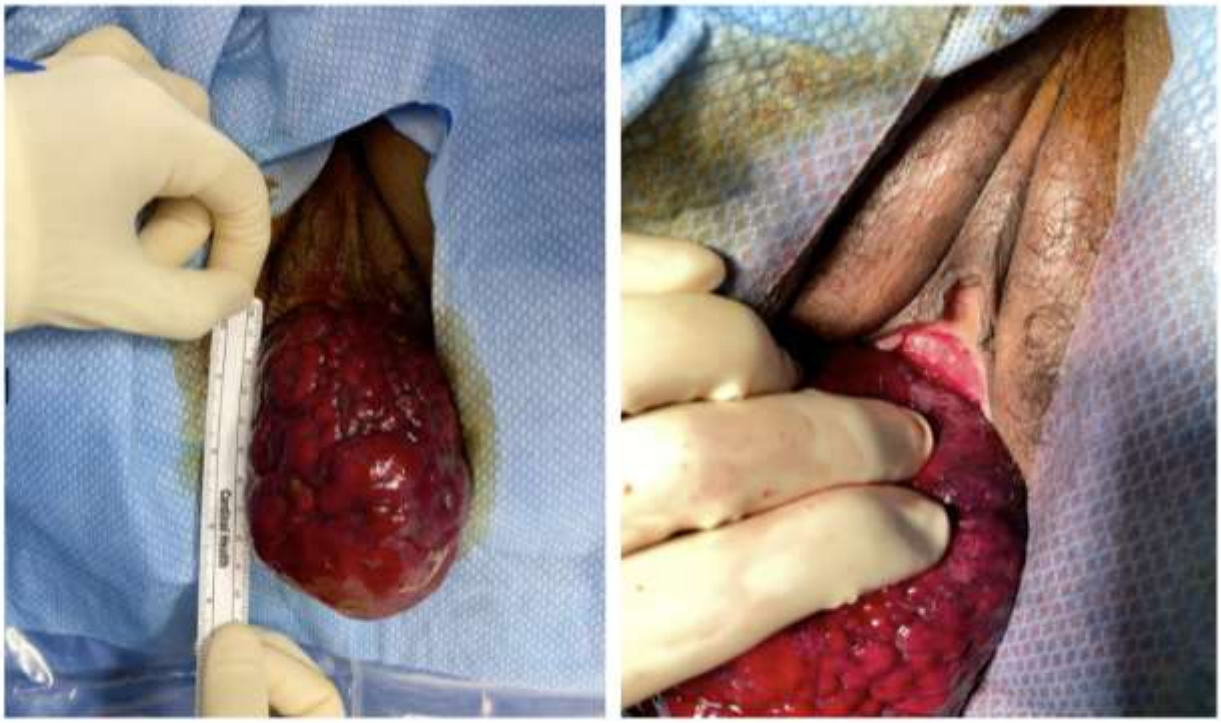


Figure 2. External vaginal exam after complete bladder reduction. The urethral meatus was also affixed to the vaginal epithelium and the bladder neck was tapered around a 24 French urethral catheter.

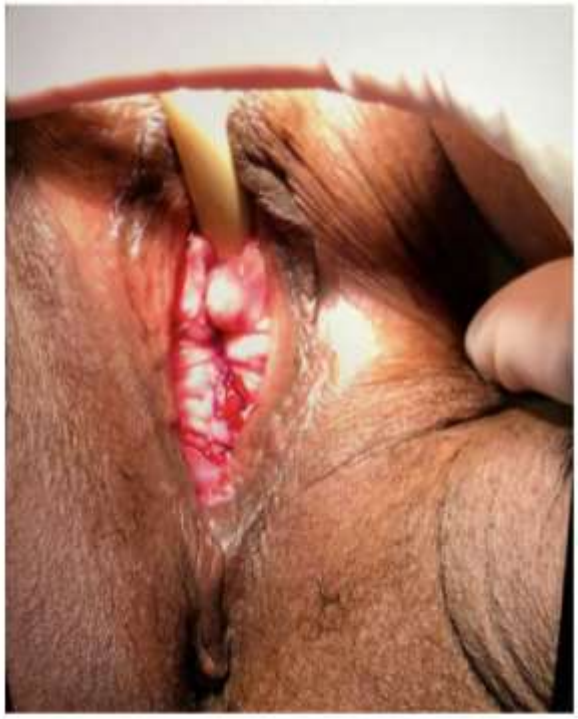
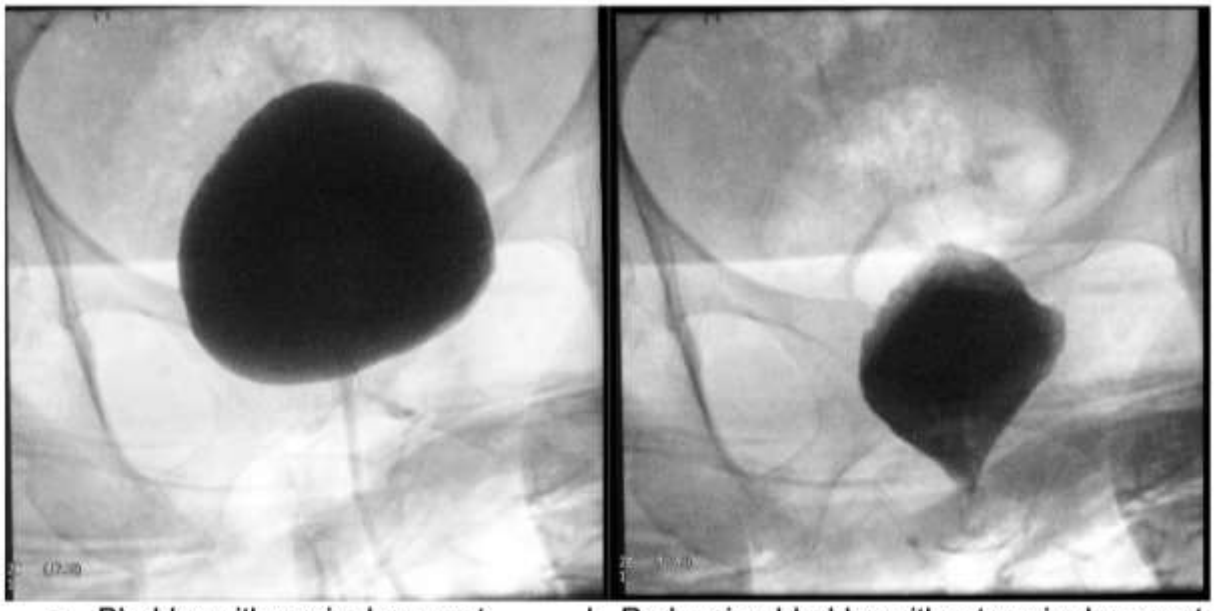


Figure 3. Preoperative videourodynamic workup demonstrated a funnel shaped bladder that was freely mobile and prolapsed down past her pubic rami out of her pelvis.



a. Bladder with vaginal support b. Prolapsing bladder without vaginal support