

Complete bladder eversion and uterine prolapse: A case report and review of the literature

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Abstract

Case: Complete bladder eversion is rare, with no currently established standard treatment. We report a case of complete bladder eversion and uterine prolapse in an 81-year-old multiparous, postmenopausal woman, presenting with vulvar bleeding and a protruding vaginal mass.

Outcome: With unsuccessful manual reduction, laparotomy was performed, including cystopexy to the anterior abdominal wall, closure of the bladder neck and placement of a 20-Fr suprapubic tube, vaginal hysterectomy, and colpocleisis. Treatment was effective, with no recurrence of pelvic organ prolapse.

Conclusion: Complete bladder eversion may occur, with urethral injury or infection, in multiparous women. Cystopexy, urethral closure and insertion of a suprapubic catheter is a useful treatment for elderly women at high risk of recurrence.

Keywords

bladder; eversion; prolapse

Introduction

A multiparous woman presented with complete bladder eversion, a rare condition with only eight cases previously reported. With no standard treatment defined, we propose a treatment strategy based on our experience.

Case Report

An 81-year-old woman (gravida 3 para 3) presented to our gynecology department, in March 2015, with a typical vulvar bleeding. The patient had a history of longstanding urinary incontinence, requiring wearing of a diaper. She had been treated for a uterus prolapse, two years prior, using a pessary ring.

Physical examination revealed a 6×6 cm erythematous mass protruding from her perineum (**Figure 1**). The gynecologist suspected complete bladder eversion and consulted us. The extruded mucosa of the lump protruding lump from the perineum appeared reddish and both ureteral orifices

unobservable. Manual reduction was unsuccessful due to pain. On admission, her vital signs were normal, with laboratory tests indicating elevated white blood cell count (1.78×10^4 / μ l), C-reactive protein (22.5 mg/dl) and serum creatinine (1.68 mg/dl). Computed tomography and magnetic resonance imaging (MRI) confirmed complete bladder eversion with bilateral hydronephrosis and acute pyelonephritis (**Figure 2**).

Examination under general anesthesia revealed thickness eversion of the anterior and apical bladder wall through the dilated urethra. The bladder was reduced but easily re-everted, with uterine prolapse after removal of the pessary ring (**Figure 3**). Therefore, we proceeded with suprapubic reversion and intubation, cystopexy to the rectus fascia, urethral closure, vaginal hysterectomy, complete colpocleisis, and perineoplasty. Operative time was 344 min, with a 320 ml blood loss. Cystography on postoperative day 45 revealed no contrast medium leakage and the patient remains without recurrence of pelvic organ prolapse.

Discussion

Complete bladder eversion is rare disease, with 8 cases identified in a PubMed search, from 1988 to April 2016, using the search terms {bladder}, {eversion}, and {prolapse} (**Table 1**).

The diagnosis of organ prolapse is difficult, with a similar appearance for uterine and rectal prolapse. Examination under anesthesia is a first step to differentiate the origin of the prolapse, supplemented by ultrasonography, intravenous pyelography and MRI [1-2]. Klauser described four types of bladder eversion [3]: the diverticulum; mucosa alone; partial eversion of all mucosal layers; and total eversion of all bladder wall layers through the urethra, as in our case. Kalorin et al. [2] recommended external transurethral reduction and urethral support for a complete bladder eversion. In failed cases, suprapubic reduction, suprapubic intubation, cystopexy to the psoas or anterior abdominal wall, and urethral support may be used.

The mechanism of bladder eversion is unknown. Risk factors are aging, multiparity, post-menopause, perineum infection associated with chronic catheterization of the urethral tissue and pessary ring, trauma, and continuous abdominal pressure associated with labor and obesity [2,4,5]. Estrogen deprivation is associated with decreased elasticity of the urethral and vaginal walls, and blood flow reduction within the submucosal urethral vascular plexus [4].

Two mechanisms of transurethral bladder eversion with uterine prolapse have been proposed [1]: widening of the urogenital hiatus, pulling the bladder base and posterior urethra away from the pubic bone, inducing widening of the proximal urethra through which the bladder inverts; and straining for voiding due to a uterine prolapse, pushing the bladder through the urethra.

There is no definitive treatment for bladder eversion and, therefore, we based our treatment on critical review of various reports. First, with complete bladder eversion, external transurethral reduction should be performed urgently, with urethral reinforcement if bladder eversion recurs. During the same procedure, if manual reduction fails or the bladder is re-everted, urethral plication sutures, or a suprapubic approach should be attempted. Suprapubic surgery requires a combined abdominal and perineal approach, with cystopexy to the anterior abdominal wall, suprapubic tube insertion, urethral closure, and perineoplasty. Other prolapse of pelvic organs should be treated as necessary. With no

evidence supporting a definitive treatment, further research is warranted.

Figures



Figure. 1 : Red edematous mass 6×6 cm in size (bladder eversion).

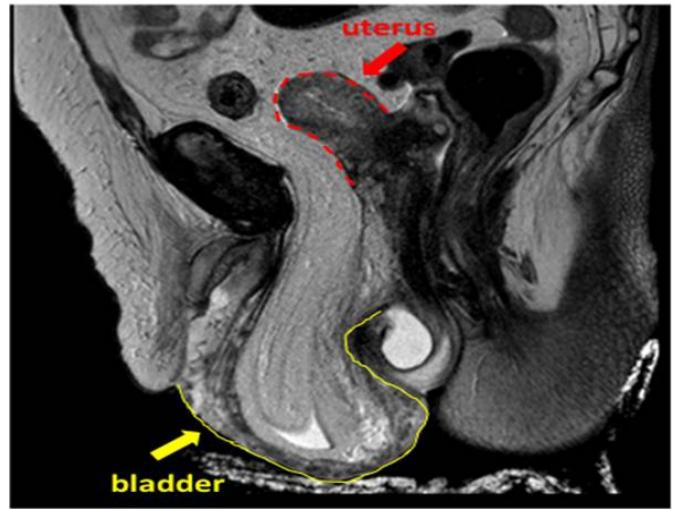


Figure. 2 : T2-enhanced sagittal magnetic resonance imaging showing complete bladder eversion.



Figure 3: Perineal view of the complete bladder eversion sitting over the uterine prolapse.

Tables

Table 1: Analysis of reported cases of bladder eversion

Year	Author	Age(Years)	Multiparity	Uterine prolapse	Predisposing Factors	Treatment
2015	Present case	81	G3 P3	Yes	Pessary	Suprapubic Reversion Suprapubic tube Cystopexy Urethral Closure
2010	kim	75	Yes, No specifies	Yes	Pessary Foley catheter in 2Years	Urethrocleisis Suprapubic cystostomy
2009	Kalorin	76	G7 P7	No	HyposPadias	Suprapubic Reversion Suprapubic tube Cystopexy suburethral sling

2007	acharya	72	Yes, No Specifies	Yes	pelvic Trauma	Manual reduction
2006	Kim	78	G10 P8	No	Bladder Tumor	Radical cystectomy
2004	Dunn	78	G12 P12	Yes	Pessary Vesicovaginal Fistula	Manual reduction Fistula repairing
2003	Yeats	0	No	No	Patent Urachus	Manual reduction Umbilicoplasty
2002	Mastropietro		Yes, No Specifies	Yes	Pessary	Manual reduction suburethral sling urethral plication
1983	underhill ¹	82	Not Reported	Yes	Pessary Pelvic Injuary	Manual reduction cystopexy

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Manuscript Information: Received: November 13, 2017; Accepted: January 25, 2018; Published: January 31, 2018

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Citation: Yamamichia G, Takaoa T, Kuribayashi S, Kawamura M, Nakanoa K, Kishimotoa N, Tsutaharaa K, et al. Complete bladder eversion and uterine prolapse: A case report and review of the literature. *Open J Clin Med Case Rep.* 2018; 1371.

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