Case Report – Endourology

Endoscopic Treatment of a Giant Prolapsed Ureterocele: A Case Report and Review of the Literature

Dev Prolabe Üreteroselin Endoskopik Tedavisi: Bir Olgu Sunumu ve Literatür Taraması

Short Title: Endoscopic Treament Giant Prolapsed Ureterocele (Dev Prolabe Üreteroselin Endoskopik Tedavisi)

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Abstract

Ureteroceles are congenital cystic dilatations of the distal ureter, usually diagnosed in childhood. Symptomatic cases in adults are rare, and giant intravesical ureteroceles with intermittent urethral prolapse are exceptionally uncommon. Optimal management in adults is debated, particularly in balancing symptom relief against the risk of postoperative vesicoureteral reflux.

A 48-year-old woman presented with a giant (6.8 cm) right-sided orthotopic intravesical ureterocele causing intermittent urethral prolapse and obstructive lower urinary tract symptoms. Because renal function was preserved and complaints were limited, conservative management was initially chosen. Progression to significant functional impairment led to endoscopic transurethral resection (deroofing). Recovery was uncomplicated, with complete symptom resolution and no hydronephrosis or signs suggestive of reflux on follow-up imaging.

Endoscopic treatment of a giant prolapsed intravesical ureterocele in adults can be safe and effective after careful selection and requires long-term follow-up to monitor for reflux.
Keywords: ureterocele, prolapse, endoscopic treatment

Özet

Üreteroseller, genellikle çocukluk çağında teşhis edilen, distal üreterin konjenital kistik dilatasyonlarıdır. Erişkinlerde semptomatik vakalar nadirdir; aralıklı üretral prolapsusun eşlik ettiği dev intravezikal üreteroseller ise son derece sıra dışıdır. Erişkinlerde optimal yönetim, özellikle semptomların giderilmesi ile ameliyat sonrası vezikoüreteral reflü riski arasındaki dengenin kurulması açısından tartışmalıdır.

48 yaşında bir kadın hasta, aralıklı üretral prolapsusa ve obstrüktif alt üriner sistem semptomlarına neden olan, sağ taraflı dev (6,8 cm) bir ortotopik intravezikal üreterosel ile başvurmuştur. Böbrek fonksiyonları korunduğu ve şikayetler sınırlı olduğu için başlangıçta konservatif yönetim tercih edilmiştir. Ancak fonksiyonel bozukluğun belirginleşmesi üzerine endoskopik transüretral rezeksiyon (deroofing) uygulanmıştır. İyileşme süreci sorunsuz geçmiş; semptomlar tamamen düzelmiş ve takip görüntülemelerinde hidronefroz veya reflü şüphesi uyandıran herhangi bir bulguya rastlanmamıştır.

Erişkinlerde dev, prolabe intravezikal üreterosellerin endoskopik tedavisi, dikkatli bir seçimden sonra güvenli ve etkili olabilir; ancak reflü takibi için uzun süreli izlem gerektirir.

Anahtar kelimeler: üreterosel, prolapsus, endoskopik tedavi

Introduction

Ureteroceles are defined as cystic dilatations of the terminal ureter within the bladder and result from a congenital defect in ureteral embryogenesis [1]. They are classically diagnosed in pediatric populations, often associated with duplicated collecting systems and extravesical localisation (ectopic in the bladder neck or urethra). In contrast, adult ureteroceles are rare, typically intravesical (or orthotopic), and frequently discovered incidentally [2,3].

Clinical presentation in adults ranges from asymptomatic findings to recurrent urinary tract infections, urolithiasis, hematuria, or obstruction. Prolapse of a ureterocele through the urethra has been described only sporadically in the literature [4].

Management strategies include observation, endoscopic incision or resection, and open or minimally invasive ureteral reimplantation [2]. However, due to the rarity of this condition in adults, no consensus guidelines exist. We present a rare case of a giant prolapsed ureterocele in an adult woman treated successfully with endoscopic deroofing, and we review the relevant literature.

Case

A 48-year-old woman was referred to the urology clinic in December 2020 for evaluation of a suspected cystic lesion at the level of the bladder or distal ureter. Her medical history was notable for prior knee surgery and one vaginal delivery. She reported a 10-day history of intermittent right flank pain, radiating to the groin and suprapubic region, accompanied by dysuria. There was no macroscopic hematuria, fever, or chills. She reported occasional cystitis episodes in the past (1–2 per year).

Laboratory investigations showed preserved renal function (serum creatinine 0.74 mg/dL, estimated glomerular filtration rate 97 mL/min/1.73 m^2) and an elevated C-reactive protein level of 35 mg/L without leukocytosis. Urine analysis revealed pyuria, but urine culture was negative. Urine cytology analysis was negative.

Cystoscopy demonstrated a large right-sided ureterocele with a normal left ureteric orifice and no intravesical lesions suspicious for malignancy. Renal and bladder ultrasonography showed a large right intravesical ureterocele associated with mild to moderate right-sided hydronephrosis. Uroflowmetry revealed a reduced maximum flow rate (Qmax 9 mL/s) with negligible postvoid residual.

Computed tomography intravenous urography confirmed a solitary collecting system with a 6.8 cm orthotopic intravesical ureterocele on the right, associated with moderate hydronephrosis (**Figure 1**). A 99mTc-ethylenedicysteine renal scan demonstrated near-symmetric renal function (right 43%, left 57%) and no scintigraphic evidence of obstruction.

Given the absence of significant symptoms and preserved renal function, a conservative approach was initially adopted with regular follow-up. However, in November 2021, the patient presented to the emergency department with intermittent vaginal swelling and episodes of obstructive voiding. Clinical history and photographic documentation suggested episodic prolapse of the ureterocele through the urethra, which reduced spontaneously with rest (**Figure 2**). Despite progression of functional complaints over the following year, renal function remained stable, and imaging showed no worsening of upper tract dilatation.

By late 2022, the patient experienced increasing obstructive micturition significantly interfering with daily activities, particularly due to her standing occupation in the hospitality sector. After multidisciplinary discussion and detailed counseling regarding the risk of postoperative vesicoureteral reflux, a decision was made to proceed with endoscopic treatment.

In February 2023, transurethral endoscopic resection (deroofing) of the ureterocele was performed. Intraoperatively, a giant intravesical ureterocele was visualized and completely resected, revealing a widely patent distal ureter (Figure 3). The procedure and postoperative course were uncomplicated. Histopathological examination showed benign urothelial tissue without malignancy.

At follow-up one month postoperatively, the patient reported marked improvement with resolution of obstructive symptoms and only mild urgency. Ultrasonography demonstrated no

hydronephrosis and normal bladder emptying. At 6- and 12-month follow-up, she remained asymptomatic with normal renal imaging and stable renal function.

Discussion

Adult ureteroceles are rare entities, accounting for a small minority of all ureteroceles described in the literature. Unlike pediatric cases, adult ureteroceles are typically intravesical, associated with a single collecting system, and less frequently complicated by significant renal dysfunction.

Giant ureteroceles in adults have been reported only in isolated case reports [3-13]. Prolapse of a ureterocele through the urethra is particularly rare and may clinically mimic pelvic organ prolapse or a urethral diverticulum, frequently resulting in diagnostic delay. The diagnostic value of transvaginal voiding sono-urethrography for dynamic visualization of ureterocele prolapse during micturition has been demonstrated and may help distinguish a prolapsed ureterocele from pelvic organ prolapse or a urethral diverticulum. This diagnostic challenge has been highlighted in several reports describing prolapsed ureteroceles that were initially misdiagnosed as urethral cysts. While some patients present with gradual or intermittent symptoms, more acute clinical scenarios have also been described. In particular, several cases report complete acute urinary retention in adult women as a result of ureterocele prolapse [3-8]. In the present case, intermittent prolapse caused functional bladder outlet obstruction, leading to a significant impairment in quality of life.

Management options for adult ureteroceles range from conservative observation to definitive reconstructive surgery. Conservative management may be appropriate in asymptomatic patients with preserved renal function and no evidence of obstruction on computed tomography (CT) urography or nuclear imaging, as demonstrated by the initial course in our patient. However, progression of symptoms over time necessitates reassessment of the treatment strategy.

Endoscopic incision (transverse “smiling” incision) or deroofing is widely regarded as a minimally invasive first-line treatment for intravesical ureteroceles in adults. The principal concern associated with this approach is the potential development of vesicoureteral reflux due to disruption of the ureterovesical junction. Reported reflux rates after endoscopic treatment in adults vary between 0% and 30%, although clinically significant reflux requiring secondary intervention appears to be uncommon, particularly in cases of intravesical ureteroceles [4]. Another reported

complication following unroofing of a prolapsed ureterocele is the formation of a large redundant mucosal flap that may function as a flap valve, leading to persistent symptoms and requiring secondary endoscopic trimming to ensure a patent urethral lumen [3-8].

Several published case reports describe successful endoscopic management of prolapsed ureteroceles in adult women, with favourable functional outcomes and low complication rates [4,6]. Consistent with these reports, our patient experienced complete symptom resolution without signs of vesicoureteral reflux or upper urinary tract deterioration on mid-term follow-up.

Definitive ureteral reimplantation remains a valid option in cases of refractory symptoms, recurrent infections, or significant reflux following endoscopic therapy [2]. Overall, a stepwise approach that begins with minimally invasive treatment appears justified in the majority of adult patients.

Conclusion

This case report highlights a rare presentation of a giant prolapsed intravesical ureterocele in an adult woman. Endoscopic transurethral resection provided effective symptom relief with preservation of renal function and no postoperative complications. Careful decision-making and long-term follow-up are essential in managing this uncommon condition.

Ethics Committee Approval: N/A
Informed Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images.
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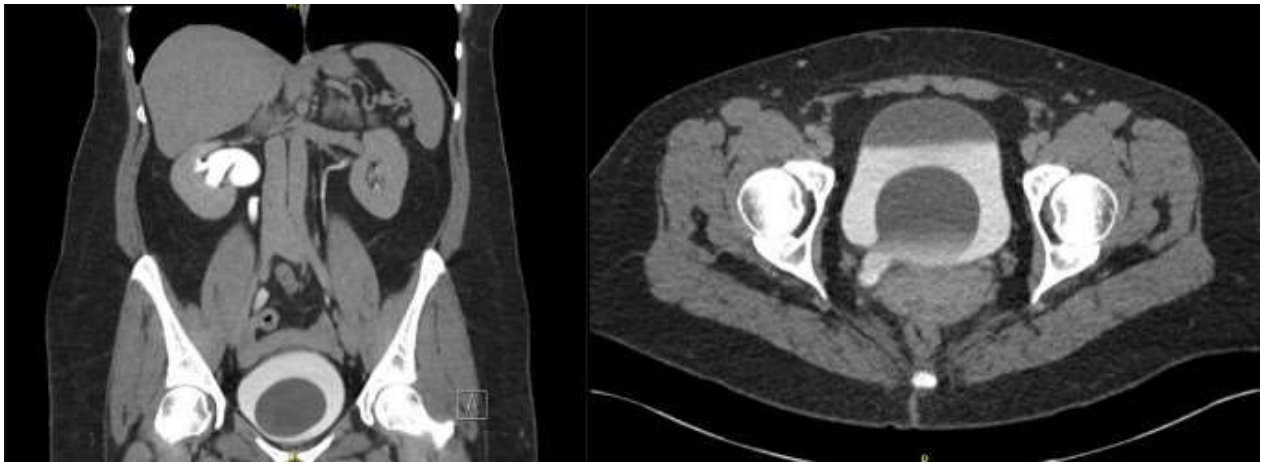

Figure 1. CT urography demonstrating a giant intravesical ureterocele

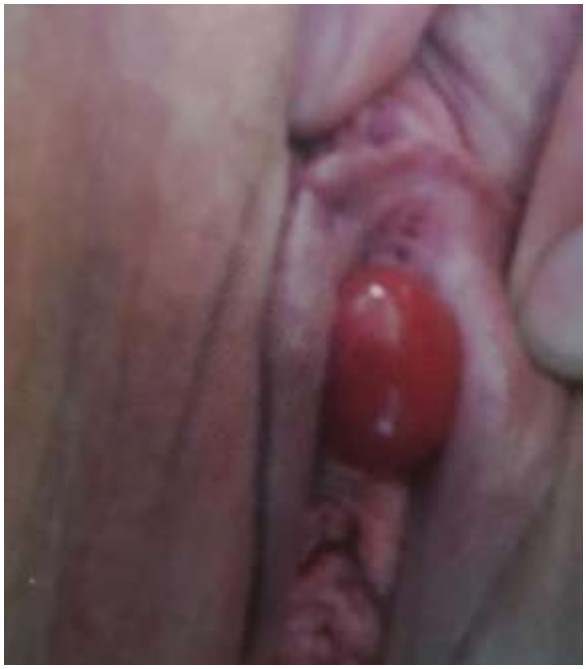

Figure 2. Prolapsed mass from the urethral opening

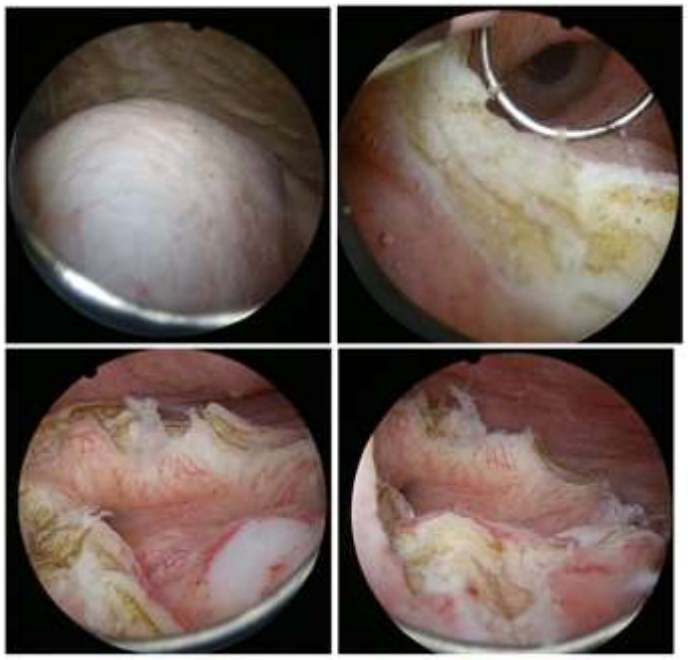

Figure 3. Intraoperative cystoscopic images of endoscopic deroofing