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Case Report

Intra-operative diagnosis of an adult ureterocele complicated by hydronephrosis: a case report

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ABSTRACT

Ureterocele is a cystic dilatation of the terminal ureter. Hydronephrosis is less commonly reported in individuals with ureterocele. We report a unique case of an incidental ureterocele with hydronephrosis in a 47-year-old woman; diagnosed with intraoperative control cystoscopy while performing total laparoscopic hysterectomy and bilateral salpingo-oophorectomy.

Keywords: Ureterocele, Laparoscopy, Cystoscopy, Urinary Abnormalities, Bladder abnormalities

INTRODUCTION

Ureterocele is a cystic dilatation of the terminal ureter within the bladder and/or the urethra. It may be diagnosed as an incidental finding on antenatal ultrasonography, or postnatally because of symptoms due to urinary tract infection (UTI) or obstruction.¹ Presentation in an adult could be either by flank/back pain and recurrent UTI, or asymptomatic hydronephrosis detected incidentally.²

Incidence of ureterocele has been reported about 1/5000 to 1/5000 to 1/12000.¹ Ureteroceles are classified as ectopic (a portion extends beyond the bladder neck into the urethra) or intravesical (entirely within the bladder).³

While many ureteroceles are detected on antenatal ultrasonography examination, some cases may present with an abdominal or vaginal mass, urinary incontinence.⁴ However few patients, may be diagnosed incidentally during imaging for other conditions. Adult ureteroceles are intravesically located and the obstruction is less severe.² Clinic features in an adult could be either by flank/back pain, recurrent urinary tract infection or asymptomatic hydronephrosis found incidentally.²

We are reporting a case with incidental ureterocele was found intraoperative control cystoscopy while performing a total laparoscopic hysterectomy (TLH) and bilateral salpingo-oophorectomy (BSO) due to heavy menstrual bleeding and myoma uteri.

CASE REPORT

A 47-year-old woman with a complaining of heavy menstrual bleeding was admitted. The patient had gravida 3 and parity 3 with normal spontaneous vaginal delivery. No prior abdominal surgery was reported.

Preoperative hemoglobin was 9.8 gr/dl, white blood cell was 4200/ml, platelet was 247×10^3 /ml, urea:25mg/dl, creatine: 0,9 mg/dl and coagulation parameters were normal. A specific gravity was 1023, ph was 5.0; no cellular elements, no protein, and nitrite, negative urobilinogen, bilirubin and ketone were found in urine analysis.

Uterus measuring 8×5.6×5.7 cm, endometrial thickness 4mm and intramural leiomyoma measuring 2.7×2.5 cm which was distorting endometrium, were found in transvaginal ultrasonography examination.

TLH, and BSO were performed. Cystoscopy was implemented at the end of the surgery. An exophytic lesion was found neighboring the right ureteral orifice (Figure 1).



Figure 1: Intraoperative ureterocele image of the cystoscopy.

The case was consulted to urology intraoperatively. Ureterocele neighboring right ureter orifice, measuring 8×5×3 cm was found in ultrasonography. Also, the examination suggested right renal hydronephrosis and chronic renal and bladder dysfunction. Urographic computed tomography (CT) has been planned. Postoperative CT showed right pelvicaliectasis (Figure 2).



Figure 2: 3D CT urography (A) Pelvicaliectasis of the right kidney (B) hydronephrosis of the right ureter (C) an irregular appearance on the right side of the bladder due to ureterocele.

Intravenous pyelogram (IVP) was suggested since CT could not detect ureterocele. On the IVP images, characteristic cobra head sign of ureterocele was observed (Figure 3). No postoperative complication was occurred. No pathological findings were present in abdomen and renal physical examination before discharge. Control urology appointment was planned.

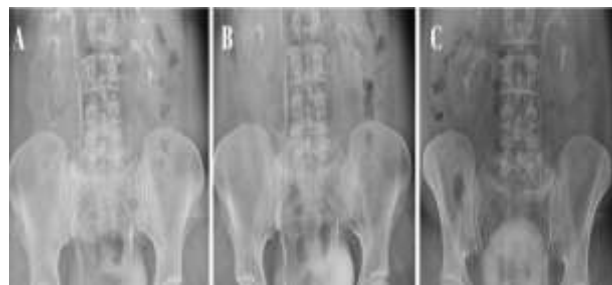


Figure 3: Intravenous pyelography (IVP) (A) fifteenth (15') minute of IVP (B) forty-fifth (45') minute of IVP (C) sixtieth (60') minute of IVP.

There was no need for an ethical approval because of since this was just a case report and patient's confidentiality were assured. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

DISCUSSION

Ureteroceles have diverse presentations ranging from sepsis, recurrent UTIs, renal failure, to no symptoms at all being detected incidentally or by antenatal ultrasonography.⁵ Currently, most of the ureteroceles are diagnosed in the screening for congenital malformations.⁶ The most common postnatal presentation is during an evaluation for UTI in early infancy.⁴ 10–20%, however, exist as simple ureteroceles and cause no symptoms.⁷ Most ureteroceles are related to a single system in adults. The stasis at the ureteral meatus due to the partial obstruction of the ureterocele may induce stone formation, causing renal colic and/or UTI.² Also Vasu et al reported a patient with a progressed disease to renal failure due to bilateral ureterocele.⁸ In our case we observed an incidental ureterocele complicated with hydronephrosis the control cystoscopy after TLH and BSO which is unusual as ureterocele causing obstruction in adults and also less commonly reported.⁹

Contrast imaging of the ureters may be useful in the patients with known or suspected urinary tract anomalies. Preoperative imaging with computed tomography urography can be beneficial in demonstrating structural abnormalities in the urinary tract.¹⁰ Still Aslaksen et al recommended that the preoperative urography should be replaced by the preoperative ultrasonography when a screening of the upper urinary tract is necessary prior to hysterectomy.¹¹ This minimal invasive approach could be implemented into preoperation procedures of the hysterectomy.

Urinary tract injury in laparoscopic hysterectomy have been reported to range from 1.2 to 2.6 percent.¹² Visual inspection of the urinary tract is routinely performed during gynecologic surgery. In addition, cystoscopy can be performed routinely for all or selectively. In our clinic we perform cystoscopy routinely in total laparoscopic hysterectomy. Cystoscopy is associated with a higher

detection rate of the urinary tract injuries compared to visualization alone, especially for ureteral injuries. In a systematic review and meta-analysis, nearly twice as many ureteral injuries were detected with routine use of cystoscopy than without.¹³ However, there is no consensus for the routine use of the intraoperative cystoscopy to screen for urinary tract injury in women undergoing major gynecologic surgery.¹⁴ Surgeons are encouraged to perform cystoscopy at the time of hysterectomy, but the decision to do so is surgeon-dependent.^{15,16} In another case report published in Turkey, Kilinc and Akpak emphasized the benefits of cystoscopy with gynecological operations particularly with regard to notice of bladder injury.¹⁷ Consistent with recent suggestions, we performed cystoscopy intraoperatively in our patient. This preventive approach of our clinic, obtained ureterocele diagnosis and ensured patient's hydronephrosis was not a surgery complication afterwards due to supposed urinary tract injury. Furthermore, gynecologic surgeons should collaborate with urologists to address urogenital injuries, and focus on multidisciplinary and minimally invasive approaches intraoperatively likewise in our case.

CONCLUSION

Ureterocele represent a clinical challenge considering diagnosis due to variable presentations in adults. To the best of our knowledge this is a rare case of an adult woman having ureterocele with hydronephrosis in advanced age. Considering potential benefits; performing preoperative urinary tract ultrasonography and cystoscopy during TLH could be essential for gynecologic surgeons.

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