

# Endometriosis of ureter-induced recurrent urinary tract infections in a premenopausal woman - case report

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## Summary

Endometriosis of the urinary tract is infrequent. The ureters and kidneys are the least usual place of localization. Endometriosis of the ureter often leads to silent loss of renal function due to delayed diagnosis. We report a case of a premenopausal female with endometriosis of the left distal ureter, presenting an infection of the urinary tract and having reported previous incidents of menorrhagia and left flank renal pain with automatic recession. Pharmacological treatment was applied with a satisfactory outcome. A short review of the literature is presented.

**Key words:** Endometriosis; Urinary tract; Conservative treatment.

## Introduction

Endometriosis is a common gynecological disease. Although ectopic endometrial tissue can be present in almost all organs of the human body, endometriosis of the urinary tract is relatively rare. In such rare cases of urinary tract endometriosis, the bladder is the most common organ involved (80%) while endometriosis of the ureter and kidney is relatively infrequent (15 and 4%, respectively) [1]. Ureteral endometriosis (UE) often has an insidious course and may lead to irreversible loss of renal function due to asymptomatic and progressive urinary obstruction.

## Case Report

The patient was a 42-year-old female who presented with a urinary tract infection. Her medical history showed incidents of menorrhagia and episodes of left flank renal pain with automatic recession. She also reported prolonged use of tampons. Ultrasonographic examination of the abdominal and pelvic regions revealed dilatation of the left renal pelvis. Both ultrasonography and abdominal X-ray failed to reveal the cause of the obstruction. Renal function was normal (BUN 30, creatinine 1.4) while the urine culture was positive (*Proteus mirabilis* > 10<sup>5</sup> CFU/ml). The patient received the appropriate chemotherapy for ten days and on completion of the treatment she underwent intravenous urography which revealed hydronephrosis of the left renal pelvis, dilatation, a helical course and obstruction of the left ureter. Retrograde urography revealed a narrowing of the left distal ureter. Urine cytologic examination was negative for malignant cells of the transitional epithelium, yet it revealed endometroid tissue. The urine culture was negative. Because of refusal to undergo any type of surgical therapy, she received a self-retained ureteral catheter for two months and was prescribed danazole per os. Six months after primary diagnosis, secretion of the left ureter was satisfactory in intravenous urography.

## Discussion

Endometriosis constitutes a common gynecological disease which accounts for 10-20% of the general feminine population, and is determined as the presence of endometriotic glands outside the uterus [2]. It almost exclusively concerns individuals of reproductive age (median age of diagnosis is 25-29 years of age), and is linked with increased fertility rates. Diagnosis of endometriosis is rare in women above 40 years old and if diagnosed, it concerns women under estrogen substitution therapy or women with high estrogen levels [1]. There is no difference in frequency among women of different races and social classes, while the importance and effect of various genetic factors in endometriosis pathogenesis has been speculated. The prevailing theories on the pathogenesis of endometriosis include: a) metaplasia of pelvic peritoneum cells or metaplasia of embryonic residuals of mesonephric ducts, b) dissemination of endometrial cells (due to retrograde menstruation), and c) induction of undifferentiated mesenchyma in endometrial tissue by substances produced from disseminated endometrial cells. Endometriosis can be distinguished as intra or extra pelvic depending on the localization of the ectopic tissue; nevertheless localization outside of the genital system is rare [3]. The most common localizations of intrapelvic endometriosis are the ovaries, the sacrouterine ligaments, the cervix and the vagina [2]. Involvement of the urinary tract is uncommon (1-3%) thus ureteral endometriosis is a rare entity (0.01-0.5% of all cases) which emanates from the extension of pelvic endometriosis [4] and often leads to increased morbidity, since insidious loss of renal function is not unusual in these patients [5]. It is distinguished in endogenous uterine endometriosis, which is very rare (infiltration of the ureteral musculature due to hematogenous or lymphogenous dissemination of endometrial cells) and

exogenous endometrial endometriosis (infiltration of periureteral tissues) which is the most frequent type and is considered to be a consequence of direct extension of ovarian disease as it invades almost exclusively the pelvic ureter. The left ureter is affected in most cases (64%), with less than one-third of cases involving the right ureter, and in even rarer cases it is bilateral [1]. The usual clinical symptoms are obstructive phenomena accompanied by circular hematuria although more than 55% of patients remain asymptomatic. Due to the gradual and asymptomatic obstruction, the loss of renal function is often observed in many patients. Therefore, patients with pelvic endometriosis have to undergo radiological evaluation of the urinary tract [4]. The therapeutic choice (pharmaceutical or surgical) depends on degree of obstruction, type of disease (endogenous or exogenous), age, menopausal status and a desire for future procreation [1]. When confronted with surgery, drug (hormonal) therapy is considered very comforting to most patients. However, danazole can be prescribed only in cases where renal function is normal with only slight hydronephrosis. Moreover, the patient has to be followed closely with frequent intravenous urography, and measurements of serum urea and creatinine. Minimal surgical treatments (ureterolysis, partial ureterectomy and uretero-cystostomy) are preferred as the final cure, especially in patients 35 years of age and less [6, 7]. For patients who do not desire to procreate, ovariectomy is recommended with or without hysterectomy [8].

## References

- [1] Gulmi F.A., Felse D., Vaughan E.D. Jr: "Pathophysiology of urinary tract obstruction". In: Walsh C.P., Retik A.B., Vaughan E.D. Jr, Wein A.J., Kavoussi L.R., Novick A.C., Patrin A.W., Peters C.A. (eds.). *Campbell's Urology*. Philadelphia, Saunders, 2002, 411.
- [2] Olive D.L., Schwartz L.B.: "Endometriosis". *N. Engl. J. Med.*, 1993, 328, 1759.
- [3] Comiter C.V.: "Endometriosis of the urinary tract". *Urol. Gynecol. North Am.*, 2002, 29, 625.
- [4] Vercellini P., Pisacreta A., Pesole A., Vicent S., Stellato G., Crosignani P.G.: "Is ureteral endometriosis an asymmetric disease?". *Br. J. Obstet. Gynecol.*, 2000, 107, 559.
- [5] Jubanyik K.J., Comite F.: "Extrapelvic endometriosis". *Obstet. Gynecol. Clin. North Am.*, 1997, 24, 411.
- [6] Ou C.S., Huang I.A., Rowbotham R.: "Laparoscopic ureteroureteral anastomosis for repair of ureteral injury involving stricture". *Int. Urogynecol. J. Pelvic Floor Dysfunct.*, 2005, 16, 155 (Epub Oct. 21, 2004).
- [7] Strang A., Lisson S.W., Petrou S.P.: "Ureteral endometriosis and coexistent urethral leiomyoma in a postmenopausal woman". *Int. Braz. J. Urol.*, 2004, 30, 496.
- [8] Antonelli A., Simeone C., Frego E., Minini G., Bianchi U., Cunico S.C.: "Surgical treatment of ureteral obstruction from endometriosis: our experience with thirteen cases". *Int. Urogynecol. J. Pelvic Floor Dysfunct.*, 2004, 15, 407 (Epub July 31, 2004).

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