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Practical uroradiology

Ureteral endometriosis☆

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1. Introduction

Endometriosis is defined as the implantation of the endometrial glands and/or the stroma outside the endometrial cavity or the penetration of endometrial glands through the uterine myometrium into the wall of the pelvic organs or the retroperitoneum.[1] The incidence of urinary tract endometriosis in women with endometriosis ranges from 0.3% to 12%.[2–10] The urinary bladder is the most commonly affected site, followed by the ureter, kidney, and urethra.[2–10] There are two types of ureteral endometriosis, namely, extrinsic and intrinsic. The extrinsic form is more common.[11–14] Ureteral endometriosis usually presents with nonspecific symptoms. The diagnostic tools are imaging modalities and ureteroscope.

2. Case report

A 34-year-old woman went for a physical checkup at a clinic, where a sonographic scan of the abdomen revealed left hydronephrosis. Intravenous urography (IVU; Fig. 1) and computed tomography (CT) of the abdomen (Fig. 2) showed a stricture in the lower third of the left ureter with left hydronephrosis and left proximal hydroureter. Therefore, left ureteroscopy was suggested. She came to our urologic outpatient department for medical support, and was admitted for further treatment. Upon admission, a physical examination was performed, and nothing suspicious was found. Laboratory examinations had normal findings except anemia (hemoglobin level: 9.4 g/dL). Left ureteroscopy was performed, which showed a polyp-like lesion in the lower third of the left ureter. A pathological analysis of the lesion revealed endometriosis. Segmental resection of the lower third of the left ureter and uretero-ureteral anastomosis were performed. A pathological analysis revealed endometriosis of the resected lower third of the left ureter, and chronic inflammation of the periureteral soft tissue. The postoperative treatment period was smooth. The patient was discharged in stable condition. A follow-up IVU (Fig. 3) 6 months later revealed normal findings.

3. Discussion

The incidence of urinary tract endometriosis in women with endometriosis ranges from 0.3% to 12%.[2–10] The bladder is the most commonly affected site (80–84%), followed by the ureter (14–15%), kidney (4%), and urethra (2%).[2–10] There are two types of ureteral endometriosis, namely, extrinsic and intrinsic. The extrinsic/left-side endometriosis is very common.[11–14] These two types may coexist as well.[9,15] Ureteral endometriosis is usually asymptomatic or presents with nonspecific symptoms.[15] The presenting symptoms depend on whether the lesion is extrinsic or intrinsic. The common symptoms are severe dysmenorrhea, dyspareunia, and pelvic pain.[3,9,15,16] Hematuria is usually noted in the intrinsic type. The diagnostic tools are imaging modalities and ureteroscopy. IVU has traditionally been the imaging modality of choice in evaluating women suspected of having ureteral endometriosis. The findings of IVU are stricture of the pelvic ureter and hydroureteronephrosis. An intraluminal ureteral mass can be noted in the intrinsic type. A CT scan also shows findings similar to that of an IVU. Magnetic resonance imaging associated with magnetic resonance urography may be useful in detecting stricture of the pelvic ureter and hydroureteronephrosis, and solid nodules

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Fig. 1. Left ureteral endometriosis. Intravenous urography shows stricture in the lower third of the left ureter, and mild left hydronephrosis and mild left proximal hydroureter.

with speculated margins showing low-signal intensity on T2-weighted images that envelop the pelvic ureter, and also exploring all pelvic locations of endometriosis; in addition, it is the best imaging modality for the diagnosis of ureteral endometriosis.[17,18]

Ureteroscopy is very useful to diagnose intrinsic ureteral endometriosis, allowing for both direct observation of the ureteral lesions and providing biopsy specimens for histological analysis.[12,17] However, ureteroscopy may not be useful in cases involving extrinsic ureteral endometriosis. Differential diagnosis includes primary ureteral carcinoma, metastatic ureteral carcinoma, and retroperitoneal fibrosis.

The treatment for endometriosis includes medical treatment and surgical treatment. Although hormonal therapy may shrink the tissues affected by endometriosis, ureteral obstruction caused by fibrous tissues usually does not resolve. The symptoms often recur once the hormone therapy is discontinued.[5] Hormonal therapy includes gonadotropin-releasing hormone agonists and antagonists, progestins, and combined oral contraceptives. Surgical therapy includes traditional or laparoscopic ureterolysis, ureterostomy, segmental ureterectomy with ureteral reimplantation, and double-J ureteral stent for ureteral stricture secondary to ureteral endometriosis.[3,9,19–22] Nephroureterectomy may be performed in selected patients with ureteral endometriosis.

In conclusion, in young women with imaging findings of stricture of the pelvic ureter and hydroureteronephrosis, ureteral endometriosis should be considered.

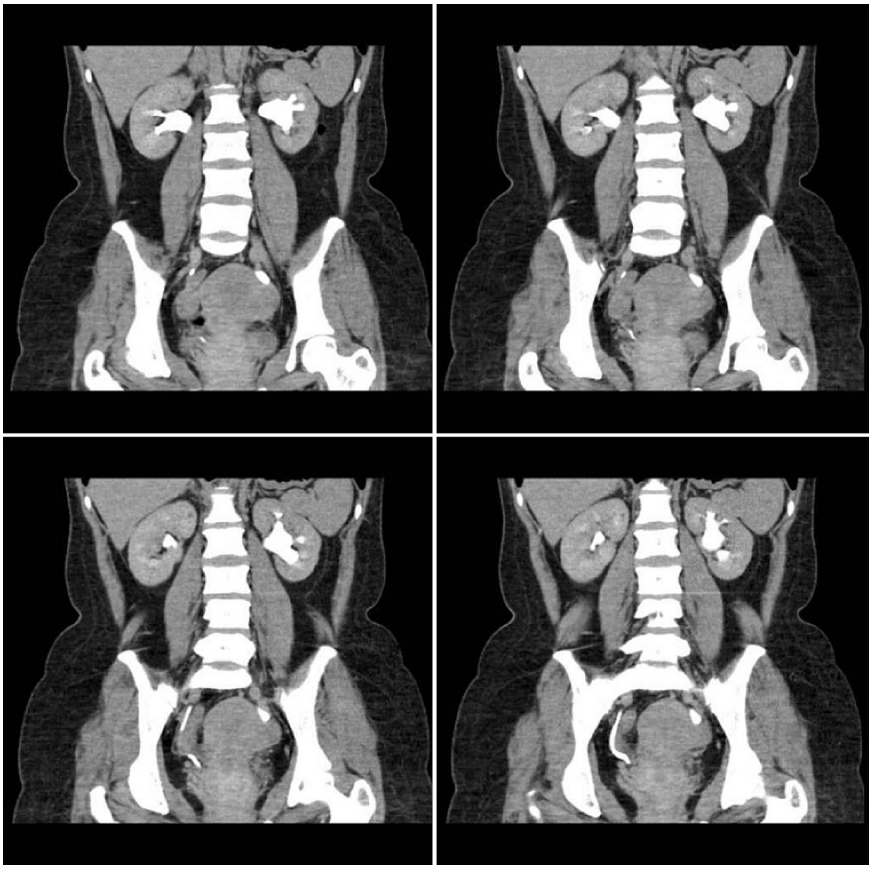

Fig. 2. Left ureteral endometriosis. Coronal contrast-enhanced computed tomography of the abdomen shows stricture with surrounding periureteral soft tissue in the lower third of the left ureter, and mild left hydronephrosis and mild left proximal hydroureter.

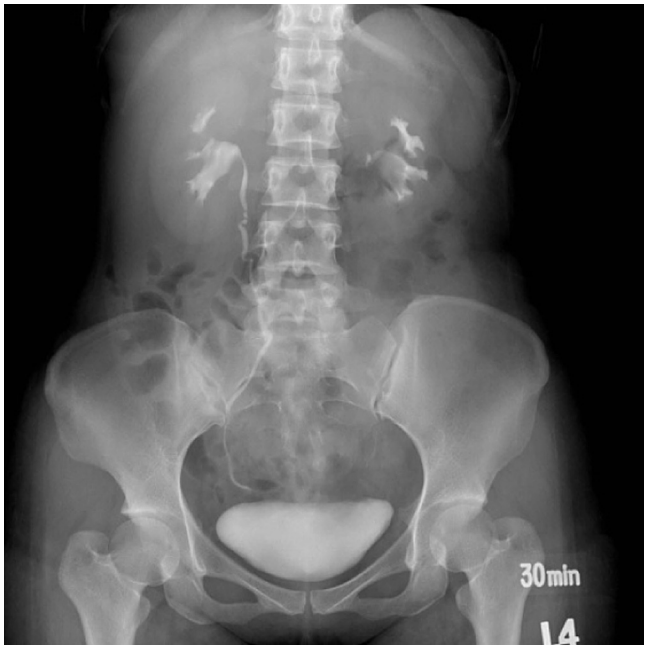

Fig. 3. Left ureteral endometriosis. Intravenous urography 6 months later shows a normal collecting system of the left kidney and the left ureter.

Conflicts of interest statement

The author declares that he has no financial or non-financial conflicts of interest related to the subject matter or materials discussed in the manuscript.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.urols.2013.11.001

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