

Pelvic endometriosis and hydroureteronephrosis

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Objective: To assess whether routine renal ultrasonography may be recommended in all patients with pelvic endometriosis, in order to avoid silent ureteral involvement of the disease.

Design: Retrospective descriptive study.

Settings: Tertiary center for the treatment of endometriosis at the Department of Obstetrics and Gynecology of the State University of Milan, Milan, Italy.

Patient(s): Seven-hundred-fifty patients with a primary diagnosis of endometriosis, between January 2005 and July 2007.

Intervention(s): Routine urinary ultrasound; recording of patient history, signs, and symptoms; gynecologic examination; blood and urinary analyses; magnetic resonance imaging; spiral multislice computerized tomography.

Main Outcome Measure(s): Symptoms and signs of ureterohydronephrosis; diagnosis of ureterohydronephrosis.

Result(s): Twenty-three patients (3%) of all 750 patients with endometriosis had associated ureterohydronephrosis diagnosed at renal ultrasound. Symptoms secondary to ureteral and renal involvement were present in 10 patients (43.5%); 6 reported lumbar pain (26.1%) and 4 patients (17.4%) had renal colic.

Conclusion(s): In our study, the high number (56.5%) of asymptomatic ureteral involvement in patients with known pelvic endometriosis seems to warrant the need for further investigations regarding the possibility to avoid the high percentage of silent renal losses. Unfortunately there appears to be no specific risk factor to allow for early suspicion nor a validated preventive diagnostic and therapeutic program. It remains to be evaluated whether urinary ultrasound ensures a beneficial cost-benefit ratio if employed on a routine basis. (Fertil Steril® 2010;93:1741–4. ©2010 by American Society for Reproductive Medicine.)

Key Words: Pelvic endometriosis, hydronephrosis, ultrasound, ureteral endometriosis, renal colic, lumbar pain

Urinary tract involvement in patients with endometriosis occurs in approximately 1%–2% of cases; the bladder is the most frequently involved organ, followed by the ureters and the kidneys with a proportion of 40:5:1 (1, 2). Patients with ureteral endometriosis often refer to nonspecific symptoms at clinical presentation, therefore posing differential diagnostic problems and a relatively high risk for subsequent loss of renal function (1). Ureteral endometriosis can ultimately cause the loss of renal function owing to ureteral urine flow obstruction caused by the endometriotic tissue enclosing the distal portion of the ureter.

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The loss of renal units in patients with ureteral endometriosis causing hydronephrosis has been estimated to be 25%–50% at the time of diagnosis, although these data derive from limited case series (2). The aim of this descriptive study is to assess whether routine renal ultrasonography may be recommended in all patients with pelvic endometriosis, in order to silence ureteral involvement of the disease.

MATERIALS AND METHODS

Between January 2005 and July 2007, all new patients referred to the tertiary referral center for the treatment of endometriosis at the Department of Obstetrics and Gynecology of the State University of Milan, Italy, underwent additional urinary ultrasound during routine assessment, to exclude hydronephrosis. All patients were informed of the aims of the study and signed an informed consent before participating in the study.

Renal ultrasound was repeated at the preoperative workup to confirm the diagnosis of ureterohydronephrosis. All patients who exhibited hydronephrosis at the preoperative

routine urinary ultrasound were enrolled in this study and underwent further investigation by means of contrast-enhanced abdominal pelvic nuclear magnetic resonance imaging (MRI) or spiral multislice computerised tomography (spiral-CT) in patients with a metallic prosthesis and/or referred claustrophobia (3). In accordance with the literature, hydronephrosis was intended as renal pelvic dilation secondary to urinary obstruction, which will induce a progressive loss in renal function if left untreated (4). In cases of uncertain findings of ureteral endometriotic disease or if a double-J ureteral stent positioning was required for manifest hydronephrosis, the patients subsequently underwent cystoscopy and retrograde pyelography. Radionuclide renal perfusion scans have not been routinely performed.

Symptoms that we considered to be associated with hydronephrosis were lumbar pain (pain affecting the lumbar region) and renal colic (acute onset of intermittent intense flank pain irradiating downwards to the homolateral groin), which was then associated with nausea, fever, vomit, dysuria, pyelonephritis, and hematuria (4). The mean time from presentation of lumbar pain was determined at the assessment of the patients' history. Suprapubic and pelvic pain, dyspareunia, and dysmenorrhea were not considered as specific symptoms of hydronephrosis. A routine vaginal examination was performed in all patients and data were collected on the presence of rectovaginal endometriotic nodules.

RESULTS

Twenty-three patients (3%) of all 750 patients with endometriosis had associated ureterohydronephrosis diagnosed at renal ultrasound. The ureterohydronephrosis was indeed severe and did not show variability during the menstrual cycle. Eleven of these patients (47.8%) were taking hormonal treatment at the diagnosis of ureterohydronephrosis (10 with combined oral contraceptive and one with a progestin). Patient characteristics are shown in Table 1.

Only 6 patients of 23 with hydronephrosis had normal results after a gynecological examination.

At clinical examination, 12 patients exhibited posterior fornix nodularity, and two had palpable anterior isthmic nodule. Ovarian cysts were palpable in 17 patients. In 17 patients, transvaginal ultrasound identified ovarian cysts, of which in 11 cases were ≤ 3 cm (Table 1). None of the patients presented evidence of altered renal function at blood (creatinine, blood urea nitrogen, Na, Ca, K, Cl) and urinary analysis, even in cases of an excluded kidney.

In the 23 patients with ureterohydronephrosis, symptoms secondary to ureteral and renal involvement were present in 10 patients (43.5%). Of these, six reported lumbar pain (26.1%). In four patients (17.4%), the presenting symptom was a renal colic associated with fever, chills, and vomiting—three independently of the menstrual cycle and one during menstruation. In one case, hydronephrosis was diagnosed at ultrasound examination during assessments for an arterial

TABLE 1

Characteristics of 23 patients with hydronephrosis in pelvic endometriosis.

Patient characteristic	N (%)	
Mean age, y (range)	35.6 (25–48)	
Previous surgery for endometriosis	6 (26.08)	
Parity	5 (21.7)	
Ureteral localization		
Left	16 (69.5)	
Right	6 (26.08)	
Bilateral	1 (4.3)	
Other	23 (100)	
endometriotic localizations		
Adenomyosis	3 (13.04)	
Ovarian Cyst		
Left	6 (26.08)*	4 (17.39) [†]
Right	3 (13.04)*	2 (8.69) [†]
Bilateral	2 (8.69)*	0 [†]
Rectovaginal endometriosis staging (6) (N = 16 and % of hydronephrosis)		
I	4 (17.39)	
II	2 (8.69)	
III	7 (30.43)	
IV	3 (13.04)	
Pelvic endometriosis staging (5)		
I	0 (0)	
II	4 (17.39)	
III	5 (21.7)	
IV	14 (60.8)	
Hydronephrosis		
Left	17 (73.9)	
Right	6 (26.08)	
Hormonal treatment	11 (47.8)	
Combined oral contraceptive	10 (43.7)	
Progestin	1 (4.3)	

* Diameter ≤ 3 cm.

[†] Diameter > 3 cm.

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hypertension. All patients presented symptoms caused by pelvic and/or bladder endometriosis (frequency, urgency, suprapubic pain, dysmenorrhea, deep dyspareunia) (Table 2).

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