Ureteral endometriosis: a case report

Calderón-Andrade HF,1 Murillo-Olivas ME.2

ABSTRACT

Endometriosis with urinary tract involvement frequency is estimated at 0.1-1.2% and 15-20% of cases present in the ureter.

The patient is a postmenopausal woman with symptomatology indicative of urinary tract infection. Radiographic studies revealed right ureteral obstruction and ureteral endometriosis was diagnosed by post-resection anatomopathological study of endometrial tissue.

This case is considered to be uncommon given that patient symptomatology did not fit clinical data reported in the literature.

Key words: endometriosis, ureteral obstruction, leuprolide, Mexico.

RESUMEN

La frecuencia de la endometriosis con afectación del tracto urinario se estima entre 0.1% a 1.2%, con presentación en el uréter de 15% a 20%.

Exponemos el caso de una paciente postmenopáusica con sintomatología indicativa de infección de vías urinarias, demostrándose una obstrucción del uréter derecho mediante estudios radiográficos y diagnosticándose endometriosis ureteral tras el estudio anatomopatológico posreseción del tejido endometrial.

Se considera un caso muy poco frecuente ya que la sintomatología de la paciente no es adaptable a los datos clínicos que se obtienen en la bibliografía.

Palabras clave: Endometriosis, obstrucción ureteral, leuprolida, México.

BACKGROUND

Endometriosis is defined as the presence of functional endometrial tissue in an ectopic site. It affects 2.5-15% of childbearing age women with a peak incidence in women 20 years of age.1–3 This ectopic lesion consists of endometrial glands or stroma that can interfere in the normal physiological process due to its infiltrative nature or the formation of adhesions.3
Endometriosis was first described by Pfannestiel in 1897. Abeshouse and Abeshouse (1960) carried out an extensive retrospective study on urinary tract endometriosis. They reported 127 cases of bladder endometriosis, 15 cases of ureteral endometriosis, 6 cases of kidney and pararenal endometriosis and 3 cases of urethral endometriosis. Ureteral endometriosis was first described by Cullen (1917). Since then 98 cases have been reported in the English language literature and 5 in the Japanese.

Urinary tract endometriosis has a reported incidence of 0.01-1.2% with 70-80% of cases in the bladder and 15-20% of cases in the ureter. Ureteral endometriosis is asymptomatic and more frequently results in a slow obstruction at that level that eventually leads to kidney failure if left untreated. Therefore it is very important to suspect this pathology when evaluating urinary obstruction symptoms in a patient with a history of genital endometriosis.

Due to the lack of specific symptomatology it is possible that diagnosis is not made until after significant damage has already occurred.

**CLINICAL CASE**

The patient is a 51-year-old woman who was admitted to the Urology Service of the Hospital Centro Médico de Especialidades presenting with intense 10/10 stabbing epigastric pain of sudden onset that diminished in the dorsal decubitus position and intensified in the right lateral decubitus. Patient had fever (not measured) for a week, dysuria and sensation of residual urine and had suffered from intense headaches for 2 months.

Patient smoked since 14 years of age reaching 1 pack per day for the past 3 years. She had 3 pregnancies, 1 resulting in a cesarean section and the other 2 in spontaneous abortions and her menstrual cycles were irregular with 3 every 28 days. Her last menstrual cycle was in 1989 when she underwent hysterectomy. Most recent cervical cytology was done 5 years ago and last mammogram was done 4 years ago with normal results. Patient presented with untreated high blood pressure diagnosed 3 months prior to admittance. Her surgical history included cesarean section carried out 27 years ago and hysterectomy plus oophorectomy for which she had blood transfusion. No relevant data was revealed during physical exploration. Complete blood count was ordered along with computerized tomography (CT) and simple abdominal X-ray in standing and decubitus positions.

Laboratory work-up reported hemoglobin 13.6 g/dL, neutrophils 44.4%, eosinophils 7.3%; blood chemistry with total cholesterol 212 mg/dL, triglycerides 408 mg/dL, serum chloride 95 mmol/L, total creatine phosphokinase (CPK) 37 IU/L and very low density cholesterol 82 mg/dL.

Simple abdominal X-ray in standing and decubitus positions showed only lumbar scoliosis. Urography with contrast medium revealed irrigation through both kidneys that was scant on the right side. Normal left collector system, pelvis and ureter were observed and right collector system, pelvis and ureter had grade II and III dilatation up to the pelvic hollow which was flexuous (Image 1).

Urography reconstruction showed important right pelvic and ureteral dilatation (Image 2).
Excisional biopsy was done with no intraoperative complications and the specimen was sent to the pathology department. Double-J catheter was placed on the right side and control X-ray and then excretory urogram were done which showed the catheter to be in its proper place (Image 3). Patient was scheduled for out-patient consultation one week after catheter placement and absence of urological or endometrial symptomatology was confirmed. Pathology study provided definitive diagnosis of endometriosis of the lower third ureter unmistakably involving glandular and stromal tissue (Image 4). With pathologically confirmed diagnosis, patient was treated with 3.75 mg IM of leuprolide (GnRH analog) every month to be continued indefinitely. Double-J catheter was removed at 1 month with no complications.

**CONCLUSIONS**

Endometriosis commonly affects organs such as the ovaries, uterosacral ligaments, Fallopian tubes, rectum and vaginocervical area. Endometriosis incidence involving the urinary tract is estimated at between 0.1-1.2% and the bladder is the most affected organ. Right ureteral lesions present more frequently (64%), as in the present case, and bilateral incidence is 15.2%. Ureteral endometriosis has been classified as intrinsic and extrinsic. A distinction has also been made between distal ureteral affectation (more frequently the case) and proximal ureteral affectation (seen only rarely). Intrinsic endometriosis presents in the lamina propria and in the muscle layers of the ureter. Both types may cause ureteral obstruction but the extrinsic type, which occurs in 80% of cases, is more frequently implicated.

Endometriosis symptomatology is related to the location and severity of the lesion. Ureteral endometriosis may be associated with classical gynecological symptoms, secondary to endometriosis, or with urological data directly related to the effect of endometrial tissue on the ureter. Chronic pelvic pain with urinary urgency, increase in urinary frequency, dysuria, dyspareunia and cyclic hematuria are the most frequent symptoms. There is a 15% incidence of hematuria in ureteral endometriosis patients. Ureteral endometriosis is generally underestimated due to its slow and silent nature, and usually manifests late.
as obstructive uropathy and finally becomes a threat to kidney vitality. Subsequent nephrectomy is associated with 30-40% of cases. Therefore it is recommendable that a urinary tract imaging study be ordered for every woman presenting with pelvic endometriosis. Conventional symptoms of pelvic endometriosis such as dyspareunia, dysmenorrhea, pelvic pain and menstrual hemorrhage should suggest diagnosis. Even though ureteral endometriosis is a benign histological process, its clinical course can be very aggressive due to ectopic endometrial tissue response and to cyclical hormonal stimuli. This gives rise to hemorrhage whose resolution is accompanied with fibrosis and thus important adhesion risk as well as the mass effect that excessive fibrous response can cause at the site. Clinical and radiological differential diagnosis is generally established through other processes, principally malignant ureteral, retroperitoneal and pelvic neoplasia, depending on the site of the main process. Ultrasound is the initial step for diagnosing a bladder endoluminal mass or upper urinary tract dilatation. Excretory urography is much more useful in detecting upper urinary tract and ureteral integrity, demonstrating ureteral narrowing or polypoid lesion. Magnetic resonance is useful in preoperative identification, particularly in cases in which this diagnosis is suspected, and ureteral endometriosis is presented with a hypodense image in T1 and hyperdense image in T2. Only detailed histological study will establish definitive diagnosis of the lesion and therefore the majority of patients will undergo surgery.

Treatment varies according to severity and lesion site. Surgical treatment is the best option for ureteral endometriosis followed by ovarian function suppressing hormonal treatment such as danazol. By creating a pseudo-menopausal situation gonadotrophic axis and ovarian steroidogenesis are suppressed, increasing estradiol and progesterone metabolic depuration, fundamental stimuli in cyclic gland response, although currently there is still much controversy in this respect. Aggressive surgical treatment with ectopic tissue resection liberates urinary obstruction and proceeds to hysterectomy if the patient does not wish to have more children and is the treatment of choice. As could be demonstrated in the present case, in contrast to that reported by other authors, the patient never presented with hematuria and predominant symptomatology was only indicative of urinary tract infection. Perhaps the lack of demonstrable hematuria was due to the fact that the endometrial tissue was in the ureter rather than the bladder, thus converting the case into a rare one that did not lend itself to clinical data available in the bibliography but rather had to be demonstrated through anatomopathological finding.

BIBLIOGRAPHY