A Case Report

Hydronephrosis and Hydrodureter due to Ureteral Deep Infiltrating Endometriosis mimic Ureteral Stricture

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Abstract

Background

Endometriosis of the urinary tract is predominatly found in the bladder (70-80%). The ureter could be involved (15-20%) of the urinary case. Left side is more often affected, which may be because the sigmoid colon prevent regurgitated endometrial cells to be cleared by peritoneal fluid on the left side.1,2,3,4 Urinary tract endometriosis occurs in 1 % of women pelvic endometriosis and gold standard diagnosis is laparoscopy and biopsy with hystological confirmation.2,3,4,5

Investigative procedures play a key role in diagnosis ureteral endometriosis. Abdominal sonography and CT scan were suggestive hydronephrosis secondary due to obstructive which the most common was presented stone or stricture. If there were a suggestive mass it could be diagnose as endometriosis or malignancy.5

Case

A 47 years old woman, P3, present with Abdominal pain on left quadran due to Left Hydroureter due Deep Infiltrating Endometriosis in Ureter with Adenomyosis. Patient complain of abdominal pain since 8 months before admission. Abdominal pain was cyclic pain correspond to menstrual pain. Patient already performed physical and MRI found there was endometriosis lession on the left distal part of ureter causing Left Hydroureter. Patient prior to operation was already performed left nephrostomy to ensure the function of left kidney and the result within normal limit. Operation was done and found there was a stricture at distal part of ureter and no sign of deep infiltrating endometriosis. Patient was found adenomyoisis at performed total hysterectomy. On exploration found enlargement of the left ureter, found no endometriosis lession but there was ureter stricture. Performed ureter resection and the specimen sent to hystopathology. Ureter was repaired and performed reimplantation to vesica.
Conclusion
Deep infiltrating endometriosis in ureter was a rare case. Diagnosis were made from preoperative but need to confirm intraoperatively. Gold standard is still Hystopathology. Differential diagnosis between endometrial lesion with ureter stricture is one of the thing that need further studies. Preoperative diagnosis from physical examination and MRI found there still discrepancies between preoperative and intraoperative findings.

Keywords
Hydroureter; Surgical; Deep Infiltrating Endometriosis; Ureter Stricture

Background
Endometriosis of the urinary tract is predominantly found in the bladder (70-80%). The ureter could be involved (15-20%) of the urinary case. Left side is more often affected, which may be because the sigmoid colon prevent regurgitated endometrial cells to be cleared by peritoneal fluid on the left side.\textsuperscript{1,2,3,4} Urinary tract endometriosis occurs in 1 % of women pelvic endometriosis and gold standard diagnosis is laparoscopy and biopsy with hystological confirmation.\textsuperscript{2,3,4,5} Ureteral involvement maybe intrinsic or extrinsic. Endometrial glands and stroma are within the lamina propria, tunica muscularis, or lumen of ureteral called intrinsic. While if localized within periureteral tissu then it is extrinsic.\textsuperscript{1,4,6} Clinically present with renal colic and can cause hydronephrosis. Delayed diagnosis can lead to renal failure.\textsuperscript{2} Urinary tract endometriosis can also be divided primary and secondary. Primary means spontaneously in urinary tract about 11% on women with DIE. The secondary occurs after pelvic surgery such as caesarean section or hysterectomy. Approximately 50% women with endometriosis in bladder or ureter underwent pelvic surgery. Ureteral endometriosis often happened in distal part and left side with the extrinsic type was more common (4 times).\textsuperscript{1,3} Endometrial tissue located in ureter undergoes the same periodic changes as normal uterine endometrium. This can cause bleeding cyclical, desquamation, necrosis, or fibrosis which can developed to ureteral stenosis. Ureteral gives non spesific symptomps such as renal colic, back pain, dysmennorea, dyspareunia. Loss renal function can occurs in 25-45%.
USG should be performed in all endometriosis patients but USG and MRI have limited value accurate information. MRI more sensitive than surgery (91 vs 82 %) but less specific (59 vs 67 %). Therefore it is very difficult to diagnose ureteral endometriosis before surgical procedures. It should be remembered that endometriosis can mimic other pathologies such as malignancy, Ureteroreoscopy with biopsy remains the most precise diagnostic option.\(^3\)\(^4\)

Investigative procedures play a key role in diagnosis ureteral endometriosis. Abdominal sonography and CT scan were suggestive hydronephrosis secondary due to obstructive which the most common was presented stone or stricture. If there were a suggestive mass it could be diagnose as endometriosis or malignancy.\(^5\)

Case
A 47 years old woman, P3, came with chief complain Abdominal pain on left quadran since 8 months before admission. Abdominal pain type was cyclic pain correspond to menstrual pain. Patient never complain on mictuary, defecation, dyspareunia (-). Pelvic pain outside menstrual period was not found. Patient had history of cesarean section 12 years ago and already performed tubectomy. No complain after the operation.

On physical examination, found uterus was enlarged, without pain, no palpable adnexal mass, pain at the left posterior fornix, no nodule was palpable, rectal mucose within normal limit.

On Ultrasonography examination, found uterus was enlarged, hypoechoic mass at anterior corpus with uncleared border size 30x26 mm correspond to Adenomyoma. Hyperechoic mass at fundal size 54x58 mm correspond to Adenomyosis. Both ovaries within normal limit. Found enlargement of left tube siz 94,38 mm correspond Left Hydrosalping. Enlargement of the left kidney pelvickalis 15x75 mm and left ureter size 20 mm correspond to Left Hydronephrosis and Hydroureter. (Figure 1 and 2)
On MRI examination, found diffuse adenomyosis at anterior part of the uterus, Left Hydrosalphing, Hydronephrosis and Hydroureter Grade IV until distal part due to Endometriosis lesion. (Figure 3)

On laboratory result patient with Hb level 13.2 gr/dl, leucocyt count 8.200, albumin level 4.4. Ureum was 20 and creatinine level 0.7. Urine analysis within normal limit.

We diagnose this patient with Adenomyosis and Left Hyrronephrosis – Hydroureter Grade IV due to Deep Infiltrating Endometriosis in Ureter. Discussion with the Urologist, patient with hydronephrosis – Hydroureter
Grade IV need to ensure the function to the left kidney. The procedure was to performed left nephrostomy and count to urine production. Left Nephrostomy was performed. Urine evaluation showed that left kidney still function there for the plan was to repair ureter and reimplantation in vesica.

On Operation room, on laparoscopy diagnostic found uterus was enlarged and there were adhesion anterior corpus and uterus. Performed adhesiolysis. (Figure 4) There were no hydrosalphing, both tube and ovary were within normal limit. Performed total hysterectomy. Performed incision on posterior broad ligament retroperitoneal was opened. On exploration found enlargement of the left ureter, found no endometriosis lession but there was ureter stricture. Performed ureter resection and the specimen sent to hystopathology. Ureter was repaired and performed reimplantation to vesica. (Figure 5)
Post operative, patient under good condition, urine production 1.2 cc/KgBW/hour, clear. Still under evaluation by Urologist.

Discussion

Clinical manifestations of ureteral endometriosis include cyclic pain on flank, dysuria, urgency, urinary tract infection, and hematuria. Intrinsic type had more severe symptomatic than extrinsic type. Ureteral endometriosis does not have genitourinary symptoms that can lead to silent loss of renal function. Generally discovered at laparoscopy or laparotomy. Therefore diagnosis based on clinical is very difficult and surgeon such distinguish endometriosis from other disease. On our patient, we found cyclic pain on the left abdomen correspond to menstrual period. We did not found any dysuria or hematuria. Symptoms of urinary tract infection was not detected in our patient.

Ureteral endometriosis should be included in every diagnosis of obstruction in ureteral lesion in women, particularly in lower third part of the left ureter. Due to percentage that endometriotic lesion in the left ureter. All patient should undergo ultrasonography and imaging. Using Intravenous Urography may have better result. CT scan and MRI can be done to identify location and volume. The diagnosis is suggested by finding of hydronephrosis particularly if it is consistent to ureteral involvement but definite diagnosis can be achieved by direct visualization and biopsy. Hystopathologic confirmation is the gold standard. On our patient we found obstruction on the left ureter and it is on the left ureter. Obstruction occurs at the distal part and cause hydroureter and hydronephrosis. From Ultrasound and MRI, stated suggestive of endometriotic lesion.

Although found laboratory result showed that ureum and creatinine within normal limit, assessment of renal function still important for further management. As mention above ureteral endometriosis can obstruct ureter and silent loss of renal function. We think that normal ureum and creatinine could occur do to no obstruction on the right renal. Nephrostomy was performed and the result showed left renal still function well.

Management goals was to relieve the ureteral stricture and remove endometrial lesion. Surgical treatment is the treatment of choice for most patient with significant hydroureter and hydronephrosis. Uretolysis may
correct if the lesion was extrinsic. In intrinsic type, removal lesion maybe difficult because there will be no margin to performed resection. Therefore urectomy with reimplantation is preffered. All lesion adjuscent to prevent future stenosis ureter should be removed. On our patient we found hydroureter and hydronephrosis and suggestive lession of endometriosis so the planned was to remove all the lesion and performed ureter resection and reimplantation. Discrepancy was found at operation room between preoperative diagnosis and operation findings. Clinically we cannot identified the endometriotic lesion and only found stricture that assumsed do to previous operation. Hystological confirmation is still gold standard.

**Conclusion**

Deep infiltrating endometriosis in ureter was a rare case. Diagnosis were made from preopersative but need to confirm intraoperatively. Gold standard is still Hystopathology. Differential diagnosis between endometrial lesion with ureter stricture is one of the thing that need further studies. Preoperative diagnosis from physical examination and MRI found there still discrepancies between preopertive and intraoperative findings.

**References**


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