

## Endometriosis Presenting As Acute Pyelonephritis

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### **Introduction**

Endometriosis may present with varied signs and symptoms depending on the organ involved. Although the reproductive system is the most frequent site affected, any organ system in the body such as the genitourinary, gastrointestinal, pulmonary and even the central nervous system may be involved. We report the case of 30-year-old woman who presented with classic signs and symptoms of acute pyelonephritis which on further investigation led to the discovery of an endometriosis causing obstruction of the ureter.

### **Case Report**

We report the case of a 30-year-old single, Filipino woman who presented with fever, chills, vomiting and bilateral flanks pain of 3 days duration. Her past medical history revealed that she had a mucinous cystadenoma of the left ovary 4 years previously for which she had undergone a left salpingo-oophorectomy in the Philippines. She also had an episode of right acute pyelonephritis which was treated as outpatient 6 months before this admission. She is single, working as an overseas foreign worker. She does not smoke or drink alcoholic beverages. She has dysmenorrhea during her menstrual period for which she is taking analgesics for pain relief. She denies any allergy to food or medication. She had her menarche at 12 years of age. Her last menstrual period was on May 27, 2004. Her menstrual history had an interval of 25 days, with 5-7 days duration and an irregular amount of menstrual blood for each cycle. Her obstetric history revealed that she never had any abortion nor bore a child. On physical examination, the patient was acutely ill and in pain. She was moderately built and nourished. She weighed 60 kg and has a height of 160 cm. Her blood pressure was 120/90 mmHg, pulse rate was 100 beats per minute, respiratory rate was 20 breaths per minute and she was febrile with a body temperature of 38 degrees centigrade. Examination of the head, eyes, ears, nose and throat disclosed a slightly pale conjunctiva and anicteric sclera. The chest expansion was symmetrical and lung sounds were clear. The heart beat was regular, no murmurs were heard. The abdomen was soft, with a knocking tenderness over the bilateral costovertebral angles, more over the right side. The extremities showed no pitting edema with no limitation of movements and no deformities. The impression on admission was acute pyelonephritis. On admission, urine and blood were sent for culture studies. The patient was started on cefazolin 1 gram intravenously every 8 hours and gentamicin

80 mg intravenously every 12 hours. One week after the start of antibiotics, the fever persisted. The abdominal ultrasound revealed a bilateral marked hydronephrosis. Both the urine and blood cultures were negative. Pelvic ultrasound showed 12 x 10 x 10 centimeters right ovarian mass with multiple cysts and septa. Serum level of the tumor marker, cancer antigen-125, was elevated at 169.57 U/mL. Computed tomography of the abdomen revealed a loculated cystic lesion over 8 centimeters in diameter noted over the right adnexal region with some solid components causing bilateral hydronephroureter, more on the right side (Figure 1). Cystoscopy revealed a malpositioned right ureteral orifice with external compression of the urinary bladder. Bilateral retrograde pyelography was unsuccessful. Bilateral ureteral catheterization up to 5 -6 centimeters showed some resistance. The patient underwent exploratory laparotomy. Gross inspection of the specimen showed a tumor mass measuring up to 11 x 7 x 5 centimeters and weighing 185 grams (Figure 2). Cut sections showed multiple cystic spaces containing blood clots measuring up to 5.5 x 2.5 x 2.5 centimeters. There was dense adhesion to the pelvic sidewall, cul-de-sac and uterovesical pouch. Engorged and tortuous right ureter due to obstruction caused by adhesions was noted at the right uterosacral ligament (Figure 3). Right salphingo-oophorectomy with lysis of the adhesive bands, resection of the ureter which revealed yellowish-white discharge, and ureteroureterostomy with double-J stent insertion were performed. Microscopic examination showed an ovarian cyst focally lined by endometrial tissue with fresh and old hemorrhage with hemosiderin-laden macrophages (Figure 4). There was fibrosis with chronic inflammation of the ovary and the fallopian tube. Five days after the surgery, the fever subsided. During follow-up visits, the double-J stent was successfully removed and there was no permanent damage to the kidneys.

## **Discussion**

Acute pyelonephritis is one of the most common infections of the urinary tract affecting premenopausal and sexually active women. With signs and symptoms of fever, chills and flank pain supported by urinalysis findings of pyuria, proteinuria and bacteriuria, the diagnosis is simple and obvious. Most of the time further investigation is not warranted unless the patient has a concomitant comorbid condition which increases the likelihood of complications such as renal parenchymal or perirenal abscess or obstruction. In this case, the failure of the fever to resolve after one week of antibiotics prompted the clinician to search for any complicating condition. This led to the discovery of an endometriosis causing obstruction of the ureter. One theory proposes that endometrial tissue is spread by retrograde menstruation or by vascular and/or lymphatic spread. Another theory proposes metaplastic differentiation of

serosal epithelium, like the peritoneum, into endometrial-like tissue. This is supported by the fact that endometrial and peritoneal cells derived from the same coelomic wall epithelium. The site most commonly involved is the ovary. Other sites include the uterine ligaments, pelvic cul-de-sac, pelvic peritoneum, fallopian tubes, rectosigmoid, and urinary bladder. The foci of endometrial tissue are small subserosal nodules. However, repeated hemorrhage caused extensive fibrosis surrounding the endometrial tissue which may result in adhesions to adnexal structures and cause infertility, chronic pelvic pain and bowel and/or ureteral obstruction. Within the ovaries, they may become enlarged and with cystic spaces filled with blood called “chocolate cysts” or “endometriomas”. When they grow into huge sizes, they can also cause obstruction by mass effect. Early detection of the complications of endometriosis is of utmost importance since irreversible renal parenchymal damage and loss of renal function occur primarily in the setting of obstruction.

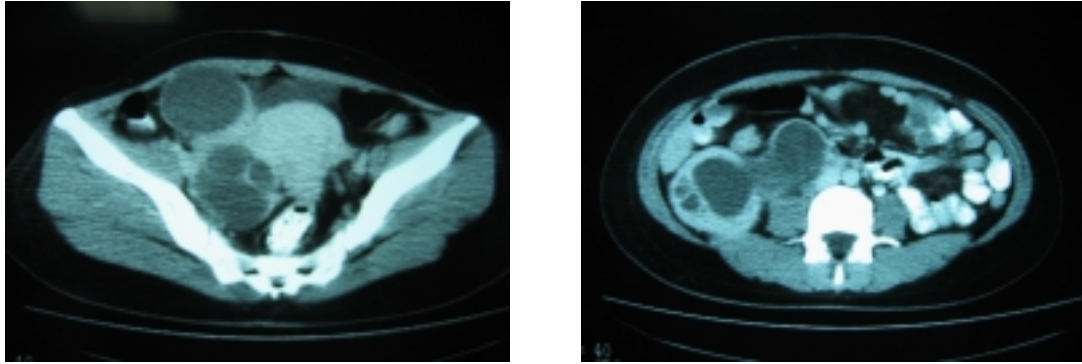


Figure 1. Abdominal computed tomography shows a loculated right ovarian mass with marked right hydroureter.

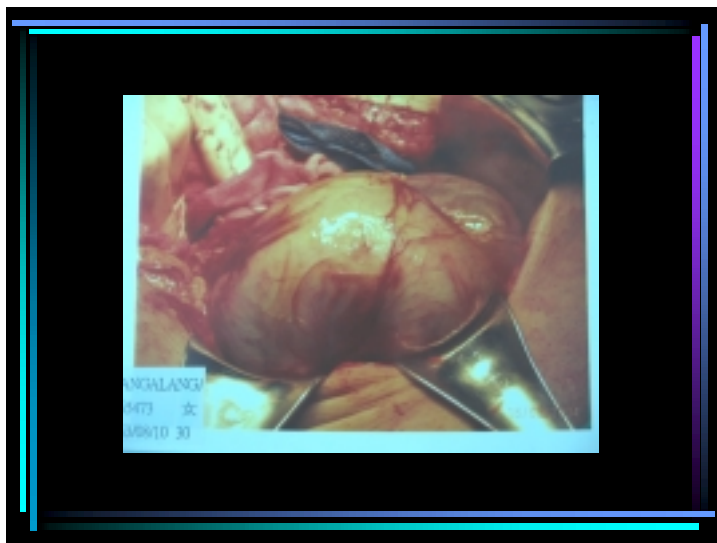


Figure 2. Right ovarian mass measuring 11 x 7 x 5 cm and weighing 185 grams.

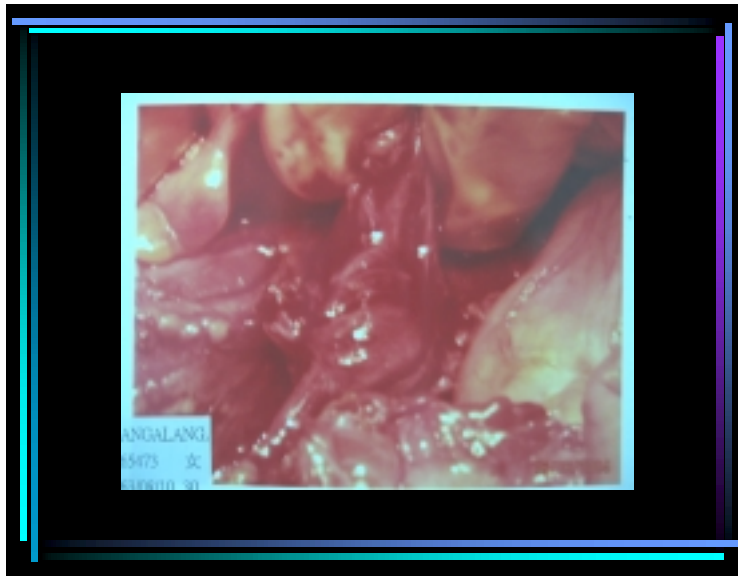


Figure 3. There was dense adhesion to the pelvic sidewall, cul-de-sac and uterovesical pouch. Engorged and tortuous right ureter due to obstruction caused by adhesions was noted at the right uterosacral ligament

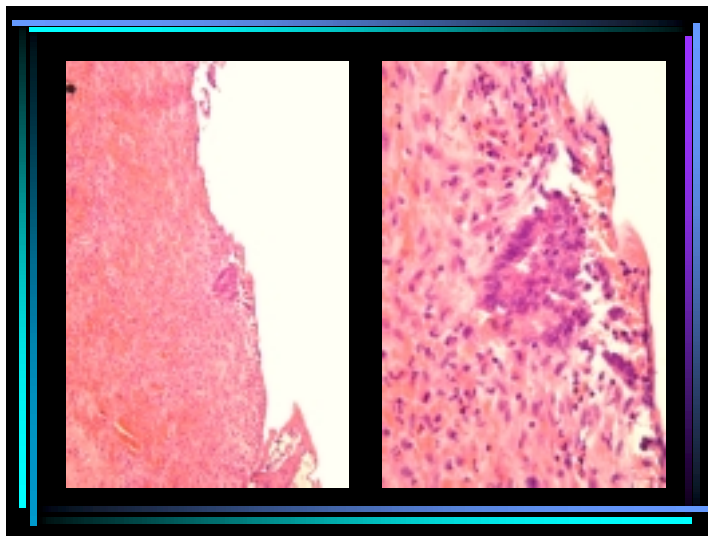


Figure 4. Microscopic examination shows an ovarian cyst focally lined by endometrial tissue with fresh and old hemorrhage with hemosiderin-laden macrophages.