

Non-Sexually Transmitted Pyosalpinx in an Adolescent

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Pyosalpinx is a condition most commonly seen in sexually active adult females; it could lead to severe fertility complications. However, this condition is very rare during childhood and in non-sexually active females.

We present a rare case of a sixteen-year-old non-sexually active female with Pyosalpinx. The patient had a history of abdomino-pelvic reconstruction surgery for congenital genital anomalies. The disease was treated with salpingectomy and adnexal debridement.

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Pyosalpinx and pelvic inflammatory disease are infections that are mostly transmitted sexually. Very rare cases of non-sexually transmitted pyosalpinx in children and adolescent females have been reported. They may occur after pelvic or abdominal surgery, which might facilitate the spread of organisms from adjacent gastrointestinal infections¹.

The aim of this presentation is to report pyosalpinx in an adolescent female not sexually active.

THE CASE

A sixteen-year-old female presented with anorexia, nausea, vomiting, high-grade fever and abdominal pain. The pain had lasted four days with little improvement. After two days, the pain returned with increased intensity and duration.

The patient had multiple congenital anomalies including dysmorphic facial features. The patient had history of absent left adnexal structure including left tube and ovary as well as the history of single pelvic kidney found during laparoscopy three years ago. In addition, the patient had history of vaginal agenesis and a vaginal reconstruction. Part of the bowel was used to create the new vagina.

The patient's menstrual cycle was regular and her menarche was at 13 years of age. On the day of admission, she was on the 14th day of her menstrual cycle.

Physical examination revealed the patient to be febrile at 37.9°C and a toxic appearance. Abdominal examination revealed rigid abdomen, multiple scars and diffused peritoneal tenderness. No abdominal mass was felt, external genitalia was grossly normal, normal vulva and patent vagina, and no sign of infection. Laboratory test revealed increased white blood cells and neutrophils count.

A chest radiograph was negative. Preoperative transabdominal ultrasound revealed solitary ectopic pelvic kidney, normal in

size and echogenicity. No hydronephrosis and no renal calculi were seen; a thick wall of the urinary bladder was seen with no stones. Bulky uterus with homogenous pattern was seen. No uterine masses were found. The endometrial thickness was 11 mm. There was a left sided pelvic cystic lesion with relative thick wall, calcifications and septations likely of adnexal origin and minimal free fluids in the Cul-de-sac.



Figure 1: Left Side Pelvic Lesion with Septations, Likely of Adnexal Origin



Figure 2: Pyosalpinx in the Lower Left Abdomen Related to Uterus

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Abdominal pelvic CT scan confirmed the US findings and revealed left-side pelvic multilocular fluid collection, measuring approximately 10x5.5 cm; internal fluid content and communicating compartments were also identified. The fluid collection was attached to the left side of the uterus. Clear demarcation from the surrounding structures were revealed, namely, the left iliac vessels, urinary bladder and pelvic located solitary kidney.

The differential diagnosis included left parametrium multiloculated fluid collection which may have been left parametrium abscess formation or peritoneal inclusion cyst.

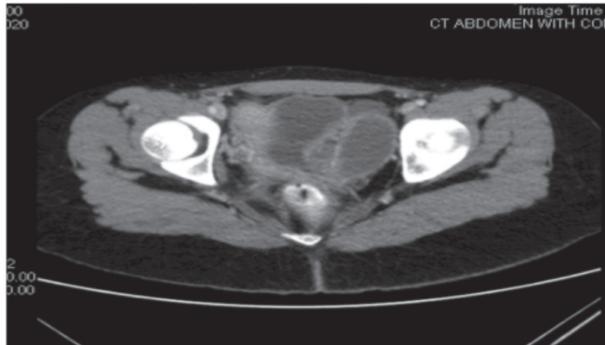


Figure 3: Abdominal Pelvic CT Scan Revealing Left-Side Pelvic Multilocular Fluid Collection

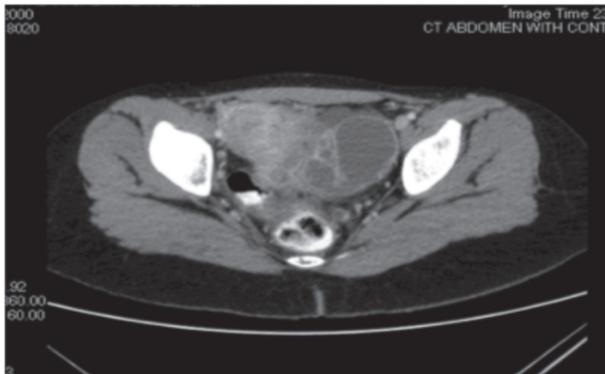


Figure 4: Abdominal Pelvic CT-Scan Revealed the Lesion Was Attached to the Left Side of the Uterus

One day after admission, the patient developed severe diarrhea and severe pain. Clinically, abdominal examination revealed abdominal guarding with lower abdominal tenderness.

Laparotomy revealed normal shaped uterus; the right fallopian tube and ovary were intact but adherent to the abdominal wall. Two left adnexal masses 10x5 cm and 3x3 cm were adherent to the pelvic wall and to the female genital tract. No discrete left ovarian tissue could be visualized. The kidney was retroperitoneal, found in the pelvic region away from these masses. Complete dissection and surgical removal of both masses were performed. The wall of the 10x5 cm mass was intact; the mass was full of pus when opened after removal.

The patient was treated postoperatively with intravenous piperacillin/tazobactam for three days. The patient's general condition improved. The leukocytes count returned to normal,

and the swab culture revealed *Escherichia Coli* sensitive to cephalosporin. The patient was discharged in good condition on oral cephalosporin for two weeks.

Both cystic lesions showed focal ulceration of the mucosa with heavy transmural acute inflammatory cell infiltration, which confirmed a pyosalpinx and necrotic ovarian tissue consistent with tubo-ovarian abscess.

DISCUSSION

Differential diagnoses of lower abdominal pain include appendicitis, diverticulitis, peritonitis, urinary tract infection and transmitted pelvic inflammatory diseases (PID). Acute PID, especially with associated pyosalpinx in a young virgin girl is a rare condition².

Our case reveals that the fallopian tubes could be directly affected, and present with serious complications that would need surgical management. It is potentially life-threatening and affects the reproductive system performances.

The majority of pyosalpinx cases are sexually-transmitted. Several case reports of adenitis and PID in non-sexually active female adolescents and virginal women have been reported^{3,4}. The organism identified in our patient was *Escherichia coli*. These bacteria are commonly found in the gastrointestinal system, but based on the etiology of pyosalpinx, genital pathology should be considered^{5,6}.

Management of pyosalpinx is controversial; however, the priority is to preserve reproductive function. When it is possible, conservative management should be the first option⁷. Ultrasound guided drainage is associated with very few complications⁸.

Surgical intervention is indicated if there is no improvement with antibiotics, incomplete drainage, increasing size, or doubtful diagnosis^{9,10}. Laparoscopy is an ideal modality that allows drainage and resection.

Fertility is significantly preserved in patients treated with ultrasound guided pyosalpinx drainage and antibiotics⁹.

CONCLUSION

Pelvic inflammatory disease must be considered in the differential diagnoses of acute abdomen in adolescent females, irrespective of their sexual activity, especially if there is history of abdominal and pelvic surgery.

Proper diagnosis and management are essential to prevent complications, including fertility problems, pregnancy complication, as well as chronic pelvic pain. Preoperative diagnosis based on imaging findings could be challenging, especially if the diagnosis is not clinically suspected.

The treatment option includes non-operative percutaneous drainage under ultrasound guide; if not available, laparoscopic drainage and salpingectomy is an ideal management.

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