Case Report

Hydrosalpinx in Postmenarchal Nonsexually Active Girls: A Review of 6 Cases in a Children's Hospital

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A B S T R A C T

Background: The objective of the study was to identify the presence of hydrosalpinx in postmenarchal nonsexually active girls in a children's hospital and to review the available literature on hydrosalpinx in this population.

Cases: In a tertiary care children's hospital, we performed a retrospective review of charts from January 1, 2000 to December 31, 2014 and identified six cases of hydrosalpinx in postmenarchal nonsexually active female adolescents ranging in age from 12 to 19 years old. The diagnosis of hydrosalpinx was made using imaging studies. Four of six patients were symptomatic at presentation, and two patients were diagnosed when seen for unrelated reasons. Five of these six girls had previous abdominopelvic surgery. Four girls were given empiric antibiotic treatment for presumed pelvic inflammatory disease related to hydrosalpinx. Two patients required surgical intervention that resulted in complete resolution of the hydrosalpinx. The oldest patient in the series underwent ultrasound-guided drainage of the pyo- and/or hydrosalpinx with subsequent recurrence with tubal ovarian abscess five months later.

Summary and Conclusions: The presence of hydrosalpinx might be discovered in the workup of pelvic pain in nonsexually active adolescents or on routine follow-up in patients with previous abdominal surgery, some of whom are asymptomatic. The underlying pathophysiology for hydrosalpinx in this population remains unclear. Among our cases, postsurgical adhesions appeared to be the most likely predisposing factor for tubular obstruction. Early detection and prompt diagnosis will allow for appropriate conservative or definitive treatment.

Key Words: Hydrosalpinx, Adolescent females, Postmenarchal, Nonsexually active

Introduction

The word hydrosalpinx is derived from the Greek words hydro (water) and salpinx (trumpet), and occurs when the ampulla or the distal portion of the fallopian tube gets blocked and the tube gets filled with fluid. The underlying etiology for hydrosalpinx remains unclear.[1] Among sexually active adolescents, hydrosalpinx is usually the result of an ascending infection with pelvic inflammatory disease (PID); with distal tubal obstruction a late consequence of tubal and peritubal damage. Other causes of hydrosalpinx, in descending order of frequency, in the female reproductive age include endometriosis, postoperative peritubal adhesions, peritoneal drains, ectopic tubal pregnancy, and tubal cancer.[1–4]

In nonsexually active women, a hydrosalpinx is a rare finding and a diagnostic dilemma, because no pathogens have been identified in this situation and the development occurs in the absence of symptoms.[5] Although a hydrosalpinx might remain asymptomatic, it most often comes to light after torsion of the tube, at which time the patient presents with acute or chronic pelvic pain. The importance lies in the need for early detection so that conservative management might be undertaken.[6]

We describe our experience with six cases of hydrosalpinx in postmenarchal nonsexually active girls to help raise awareness of this differential diagnosis in the evaluation of acute and chronic pelvic pain and to identify plausible explanations for hydrosalpinx in this population of nonsexually active adolescents. A review of related literature is included.

Methods

We conducted a retrospective review of charts of patients seen from January 1, 2000 to December 31, 2014 in a free-standing children's hospital. Institutional review board approval was obtained. The information extracted included: demographic characteristics, presenting signs and symptoms, medical and surgical history, sexual activity, and treatment management.

Cases

Case 1

A 12-year-old girl after resection of pelvic neuroblastoma in infancy was seen for irregular menses. She achieved menarche four months earlier and had never been sexually active. As part of the workup, a pelvic ultrasound examination revealed bilateral ovarian cysts and a tubular fluid collection consistent with a hydrosalpinx. Subsequent sonogram and magnetic resonance imaging (MRI) of the pelvis showed progressive development of bilateral

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hydrosalpinx, which raised a concern for PID with tubal ovarian abscesses. She received a two-week course of antibiotics. Testing was negative for sexually transmitted infection (STI). However, the hydrosalpinx continued to worsen despite this treatment. The possibility of an obstructive etiology prompted the decision for laparoscopic surgical intervention, with subsequent unroofing of bilateral retention cysts and lysis of adhesions. Follow-up MRI of the pelvis two months later showed near complete resolution of a left hydrosalpinx with an unchanged right hydrosalpinx. She remained asymptomatic and continued to be monitored. A pelvic ultrasound three months later showed no evidence of hydrosalpinx.

Case 2

A 12-year-old nonsexually active girl, with menarche at age 11 years, presented to the emergency room with abdominal pain and heavy vaginal bleeding. She had an uncomplicated laparoscopic appendectomy at age five. Pelvic ultrasound (Figure 1) showed a dilated, tortuous right adnexa extending posteriorly to the uterus. MRI of the pelvis (Figure 2) revealed bilateral hydrosalpinx. The surgical service suggested conservative management and she was empirically managed with cefoxitin and doxycycline for PID and given Zovia (50 mcg of ethinyl estradiol and 1 mg of ethynodiol diacetate; Watson pharmaceuticals), a combined oral contraceptive pill, to control the bleeding. She was discharged home in stable condition but was lost to follow-up. The test result for STI was negative.

Case 3

A 12-year-old girl with a history of premature birth, born at 28 weeks' gestation at 1.5 pounds, and an atrial septal defect repair, was seen at an outside hospital for persistence of left lower quadrant abdominal pain and back pain. She was three months postmenarchal, and she denied sexual activity. Pelvic ultrasound and computed tomography scans showed a hydrosalpinx at mid pelvis that was intimately associated with both ovaries versus a cystic ovarian neoplasm. A positive test for beta subunit of human chorionic gonadotropin (B-HCG) prompted transfer to our hospital. The oncology service was consulted and tumor markers were sent; repeat testing for B-HCG was negative. Empiric treatment for PID with cefoxitin, doxycycline, and metronidazole was started. She underwent laparoscopy to evaluate the pelvic mass. Intraoperatively, there was torsion of the normal-appearing left ovary and hugely enlarged left fallopian tube. After untwisting, the left tube was electively removed and the pathology was consistent with a hydrosalpinx. She recovered uneventfully and results of testing for STIs were negative.

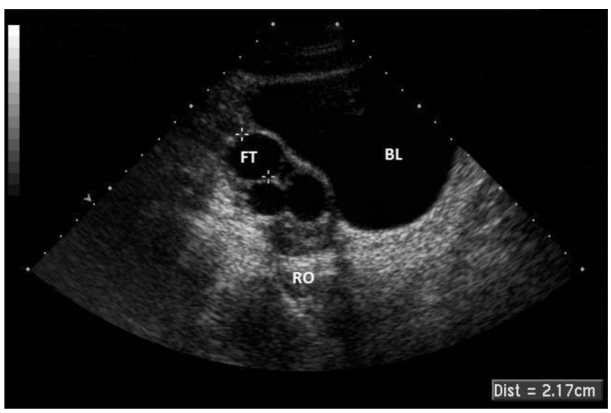

Figure 1. Pelvic ultrasound showing the dilated fallopian tube (FT). BL, bladder; RO, right ovary.

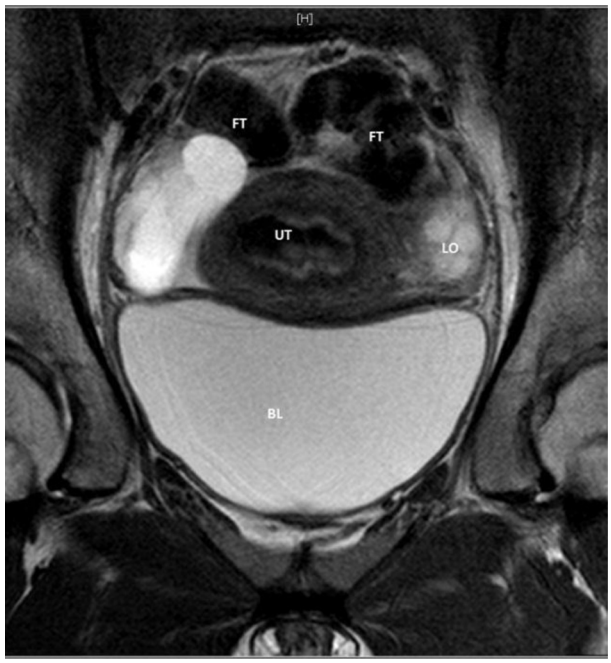

Figure 2. Magnetic resonance image of the pelvis with contrast showing bilateral hydrosalpinx. BL, bladder; FT, fallopian tube; LO, left ovary; UT, uterus.

Case 4

A 14-year-old adolescent with a known history of sacrococcygeal teratoma, diagnosed and resected in infancy, followed by vesicostomy and subsequent bladder reconstruction at age four. She had her menarche at age 11, with subsequent regular periods and painful cramps. She was not sexually active. She presented to the emergency room for acute onset of lower abdominal pain and her pelvic ultrasound showed a right ovarian mass. She was evaluated by pediatric surgery and advised pain management and repeat ultrasound. Six weeks later, imaging showed persistence of the ovarian mass. A subsequent MRI scan a month later documented resolution of the ovarian mass, most likely a right hemorrhagic cyst, and an incidental finding of a left hydrosalpinx. No intervention was undertaken at that time.

Case 5

A 15-year-old nonsexually active female, with a history of Hirschsprung disease in infancy, required a colectomy, and a diverting ileostomy for recurrent rectovaginal fistulas at age 14 years. During the evaluation for inflammatory bowel disease, the workup included an MRI of the pelvis

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