A Paratubal Cyst Associated with Flegmonous Appendicitis: A Case Report and Review of Literature

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Abstract

Paratubal cysts (PTCs) are remnants of paramesonephric or mesonephric ducts and mostly benign. Paraovarian and paratubal cysts are used synonymously. These masses have been reported in all age groups, beginning from premenarchial period up to menopause, but most commonly are seen in the third and fourth decades of life. A 14-year-old girl with flegmonous appendicitis diagnosed and treated during the management of PTC is presented and discussed.

Keywords: Paratubal cyst; Flegmonous appendicitis

Introduction

Paratubal cysts (PTCs) are remnants of paramesonephric or mesonephric ducts and mostly benign [1]. Paraovarian and paratubal cysts are used synonymously [2]. These masses have been reported in all age groups, beginning from premenarchial period up to menopause, but most commonly are seen in the third and fourth decades of life [2,3]. A case of flegmonous appendicitis diagnosed and treated during the management of PTC is presented and discussed.

Case Report

A 14-year-old girl had signs of acute surgical abdomen. All laboratory parameters were normal, except an increase in white blood cell count (16300/µL). In addition to a normally perfused left ovary with multiple small cysts, a pelvic Doppler ultrasonography (US) demonstrated of a cystic mass adjacent to the right ovary with a dimension of 60×50×40 mm with no perfusion. The cyst was found to be unilocular with no solid components or septations and the right ovary was not visible by US. The abdominal magnetic resonance imaging (MRI) revealed a unilocular cystic mass with no septation or mural nodule with a dimension of 64×54×43 mm consistent with a PTC (Figure 1). With the suspicion of torsion of the ovarian pedicle or fallopian tube accompanied by a PTC, the patient underwent an emergent exploration. Laparotomy by a pfannenstiel incision revealed that both of the fallopian tubes and ovaries were normal. A mass of 6×5 cm in diameter between the left fallopian tube and left ovary was found and enucleated totally preserving the adjacent ovary and fallopian tube (Figures 2 and 3). To our surprise, synchronous abdominal exploration also revealed an inflamed appendix (Figure 4). Standard appendectomy was added to the procedure. Histopathology revealed a flegmonous appendicitis and a paratubal cyst with a smooth inner surface with a thin wall. The patient had an uneventful postoperative course.

Discussion

PTCs are rare clinical entities and are believed to originate from mesothelium or be remnant of Mullerian duct and Wolffian duct [1]. Although the term paraovarian cyst is also used, generally, terminology depends on location of cyst. When adjacent to fallopian tubes it is referred to as PTC. With a variable size and typically thin wall these masses may be attached to fimbriated end of tube by a pedicle. Cysts are usually small and asymptomatic (<1 to 8 cm in diameter) and most reported cases of PTCs have occured in pediatric patients [4]. PTCs may be found at surgery or incidentally on radiological study performed for another reason. Cysts may also lead to torsion of adnexa resulting in acute pain. It has been hypothesized that PTCs increase in size with hormonal activity [5]. Larger lesions may become symptomatic causing pressure or pain. An association between PTCs and obesity has also been suggested [6]. Our case was...
not considered to be obese because she was within the normal range of weight and height percentile. PTCs usually consist of either uniliated epithelium, ciliated cuboidal epithelium, or ciliated columnar epithelium [7,8]. Histopathological examination revealed that there was clear serous type fluid inside the cyst and epithelium was ciliated columnar type in our patient.

Figure 2: Intraoperative view of the PTC.

Figure 3: PTC after enucleation.

US, computerised tomography (CT) or MRI may be performed in preoperative evaluation. Sonographically a PTC is unilocular with serous fluid inside without internal echoes and has a smooth wall [9]. Due to the possibility that ovarian torsion may be also one of the differential diagnoses, pelvic Doppler US was performed in our patient. A unilocular cystic mass with no solid components or septations adjacent to the right fallopian tube was observed and there was no blood perfusion in the cystic mass. The right ovary was not visible by US. CT or MRI are the other choices of diagnostic tools in these patients. MRI findings of these paramesonephric or mesonephric remnants have been reported and it has been suggested that demonstration of a normal ipsilateral ovary close to, but separated from, the adnexal cyst may be an important MRI finding for the diagnosis [10]. MRI finding in our case was a large unilocular cystic mass at the level of right ovary (Figure 1). Nevertheless, US and MRI findings in these patients are nonspecific and none of these imaging modalities have specific criteria for a definite diagnosis.

Treatment options in PTCs include cystectomy, fenestration of cyst, aspiration of cyst fluid [11]. Enucleation of the PTC with an attempt of tubo-ovarian salvage should be the first choice. Preservation of fallopian tubes and ovary during excision of the cyst may increase the future reproductive potential of these children. Enucleation of the PTC was performed uneventfully in our patient. At the end of the operation abdominal exploration through the same incision revealed a striking finding- an inflamed flegmonous appendicitis- and standard appendectomy was added to the surgical procedure.

Figure 4: Appendix vermiformis. Note distal tip is inflamed revealing flegmonous appendicitis.

Literature review regarding coincidence of appendicitis with other pelvic pathologies come especially from adult cases and include various entities. These are tubal pregnancy [12-16], ovarian cyst [17], hemorrhagic corpus luteal cyst [18], bleeding ovarian follicle with hemoperitoneum [19]. Parovarian cyst torsion including rupture of the left ovary coexisting with a flegmonous appendicitis has also been reported [20]. Regarding association of appendicitis with pelvic pathologies in children, ovarian torsion is most commonly seen and there are 7 pediatric cases of ovarian torsion concurrent with appendicitis [21]. A case of suppurative salpingitis in association with flegmonous appendicitis has also been reported in a 11 year-old girl [22]. To the best of our knowledge, there is no pediatric case of PTC associated with a flegmonous appendicitis in the English language literature and our case is the first child with a PTC and flegmonous appendicitis.

Physicians hesitate to accept the possibility of double pathology in the same patient. This reluctance stems from an experience that it is rare for occurrence of two coincident pathological conditions. This case shows the importance of considering multiple pathologic disorders in a patient with an acute surgical abdomen. To our knowledge, this is the second report of a combination of PTC and flegmonous appendicitis and first pediatric case. As is shown in this case, PTC and flegmonous appendicitis can be seen together as distinct entities in children and should be kept in mind during differential diagnosis of these children.
References


