Giant Paraovarian Cysts in Children: Two Different Ages and Clinical Pictures

Çocuklarda Dev Paraovarian Kistler: İki Farklı Yaş ve Klinik Görünüm

Çocuklarda Paraovarian Kistler / Paraovarian Cysts in Children

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Özet

Paraovarian kistler yakın konumu nedeniyle yumurtalık kistleri içerisinde yer alan iyi huylu kistlerdir. Çocuklarda nadir görülürler ve tanıları zordur. Genellikle yenidoğan döneminde batın içi kitle olarak, prepubertal dönemde ise akut karın tablosuyla ortaya çıkarlar. Tedavisi komplike olmamış kistlerde over ve fallopian tüplere zarar vermeksizin kistin eksize edilmesi iken, adneksiyal torsiyon gelişen olgularda ise salphingo-ooferektomi gerekli olabilir. Biz bu çalışmada, biri yenidoğan döneminde komplikasyon gelişmemiş, diğeri ise prepubertal dönemde adneksiyal torsiyona bağlı akut karın tablosu gelişmiş iki olguyu sunduk.

Anahtar Kelimeler

Paraovarian Kist; Kistektomi; Adnekisyal Torsiyon; Salphingo-Ooferektomi

Abstract

Parovarian cysts are benign cysts that are included within the subject of ovarian cysts due to their close position. They are seen rarely in children and are difficult to diagnose. It usually appears as an intraabdominal mass in the newborn period and with a clinical picture of acute abdomen in the prepubertal period. The treatment is excision of the cyst with salvage of the ovary and fallopian tubes in uncomplicated cases whereas cyst excision with salpingo-oopherectomy may be required in case of adnexal torsion. We present two cases in this study, one who had been diagnosed without complication development in the neonatal period and the other presenting with a clinical picture of acute abdomen following the development of acute abdomen in the prepubertal period.

Keywords

Paraovarian Cyst; Cystectomy; Adnexal Torsion; Salpingo-Oopherectomy

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Introduction

Paraovarian cysts arise in the part of the broad ligament between the fallopian tube and ovary and they are very uncommon in children [1]. They are usually following puberty but can also arise as an intraabdominal mass in newborns [2]. While generally asymptomatic, they may rarely become clinically significant due to complications such as enlargement and/or torsion, hemorrhage, perforation and neoplasm [3]. Preoperative diagnosis is difficult. Treatment is enucleation of the cyst from the mesosalpinx without damaging the ovary and fallopian tubes when no complications have developed [2]. However, salpingo-oopherectomy may be needed in complicated cases [4, 5]. We discuss the clinical pictures and surgical treatment of two cases in this study, one uncomplicated in the neonatal period the other with ovarian torsion in the prepubertal period.

Case Report 1

Our first patient was a female newborn, 3100 gr. The antenatal ultrasonography (US) revealed a possible ovarian cyst or mesenteric cyst with thin walls sized 59*44 mm at the superior left lateral side of the bladder. Physical examination revealed a soft and mobile cyst with regular contours that extended from the right upper quadrant of the abdomen to the lower quadrant. Blood levels and α-fetoprotein level were normal range. Postnatal US showed that the uterus had a normal localization and dimensions. There was a cystic structure approximately 64*45 mm in size with thin walls and regular contours that filled the right half of the abdomen and extended to the liver and stomach superiorly and to the right lower quadrant in the pelvic region. The cyst was unechogenic and thought to be of ovarian origin. The patient underwent elective surgery on the 4th day of life. The laparotomy revealed a cystic mass with quite thin walls approximately 6*8 cm in size that was full of serous fluid and extended along the tuba to the ovary (Fig. 1A) and the cyst was excised while protecting other organs. The histopathology examination of the material revealed lines by flat cells and surrounded by a thin fibrous wall (simple cyst) (Fig. 1B). A follow-up US showed no pathology 3 months later. The patient is currently on the 5th year of follow-up with no problems.

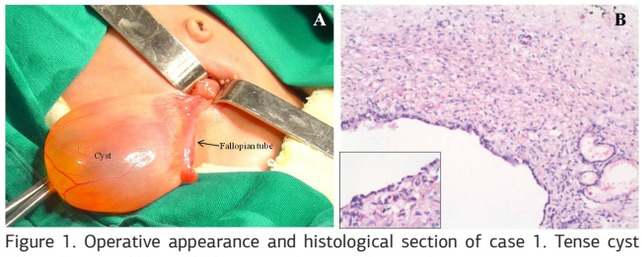


Figure 1. Operative appearance and histological section of case 1. Tense cyst dimension was 6*8 cm (A) A paraovarian cyst, lined by flat cells and surrounded by a thin fibrous wall (H&E X 10) (inset H&E 40x) (B)

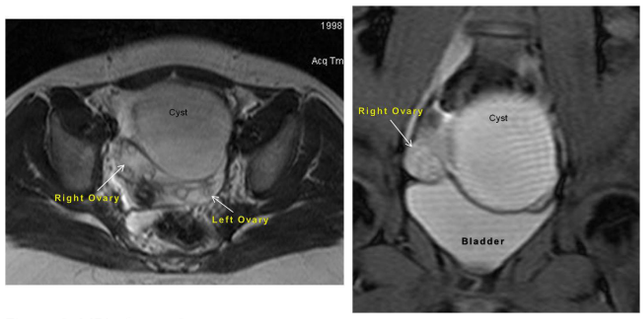


Figure 2. MRI of case 2

Case Report 2

A 12-year-old female patient was referred from the town hospital and admitted due to colicky abdominal pain for the last 2 days and 3 instances of bilious vomiting in the last 24 hours. Secondary sex characteristics development had started but menstruation had not. Physical examination revealed sensitivity and guarding in the right lower abdominal quadrant. The ampulla was empty on rectal examination. A hard mass with regular contours was palpated on the right side of Douglas' pouch. The laboratory values were normal except for a leukocyte count of 13.000/mm3 on the CBC. The US revealed a cystic mass lesion 82*77 mm in size with a thin capsule in the right paraovarian region that pushed on the bladder and uterus and deviated the uterus to the right. Magnetic resonance (MR) imaging showed a cystic lesion 99*74 mm in size in the abdomen that was very close to the left ovary and thought to be an ovarian cyst as there was no solid component with marked pathological contrast enhancement (Fig. 2). The patient's colicky pain increased and she was therefore performed laparotomy on with preliminary diagnoses of ovarian torsion and abdominal mass. The right Fallopian tube and ovary were found to be rotated 720 degrees counterclockwise and the right ovary to be swollen due to internal bleeding. The tense cyst was approximately 12*10*8 cm in size (Fig. 3A). The cyst content was partially evacuated and

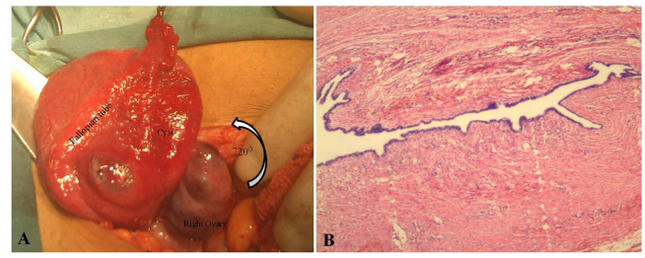


Figure 3. Operative appearance and histological section of case 2. Operative appearance showed 720° counterclockwise torsion of the right broad ligament (arrow). The right ovary was not normal and was involved in the torsion. The tense cyst dimension was 12*10*8 cm (A). The cyst consisted of low cuboidal epithelium and was diagnosed as paraovarian cyst (H&E X 4) (B).

the cyst, tuba and ovary removed to outside the abdomen. The adnexia and ovary were detorsioned clockwise but there was no change in ovarian perfusion. The cyst was therefore excises totally together with right salpingo-oopherectomy. Left ovary was normal. Microscopic examination revealed a cyst 5 cm in diameter with 0.3 cm wall thickness. The cyst had folded mucosa and consisted of low cuboidal epithelium. The diagnosis was a mesonephric paraovarian cyst (Fig. 3B). Signs of hemorrhagic infarct were observed in sections of the right ovary. The patient is on the second year of follow-up with no complications.

Discussion

The incidence of paraovarian cysts among benign adnexal cysts is 17% to 33% of pediatric and adult cases [1]. Paraovarian cysts are very uncommon in children, they are either asymptomatic and therefore not noticed in children or the diagnosis is made only when a complication such as torsion, perforation or bleeding develops. However, they can also be found during routine checks as an intraabdominal cystic mass and come to the attention of pediatric surgeons as in our first case [1]. Paraovarian cysts have been reported to be rarely subject to complications as they expand into the leaves of the broad liga-

ment and do not have a pedicle. Possible complications include hemorrhage, perforation, torsion, and neoplasm [1]. Our second case was in the premenstrual period and had a paraovarian cyst complicated by torsion.

Cystectomy is recommended in cases of paraovarian cyst, and an attempt at ovarian salvage should be considered even in the event of torsion. The ovary should not be resected if the blood flow to the ovary is preserved in a twisted paraovarian cyst. Laparoscopic unroofing and ultrasound-guided needle aspiration have also been used for physiological ovarian cysts as minimally invasive treatments [6, 7]. Our first case was a newborn and the cyst filled the right side of the abdomen. We were unable to perform laparoscopy and therefore made a 3 cm right paramedian incision from which we partially aspirated the cyst contents with a needle and cyst excision was performed while protecting the ovaries and tubas as there was no circulation problem of the organs. Adnexal torsion occurs when the vasculature supplying the ovary and tube undergoes excessive rotation about its axis, thereby producing a mechanical impairment to flow [4]. Salpingo-oopherectomy can be used for cases complicated by torsion with circulatory disturbance [1]. The ovary and adnexal structures had rotated counterclockwise 3 times in the second case and the ovary's discoloration and circulation did not improve despite the detorsion procedure. We therefore decided on salpingo-oopherectomy.

The histology of paraovarian cysts has been described best by Vlahakis-Miliaras and coworkers in their review of 46 paratubal cysts in 1998. All of the cysts were lined by a single layer of tubal-type, ciliated epithelium and covered by a thin layer of smooth muscle [8]. Microscopic evaluation of our cases revealed that the first case was a paraovarian cyst, lined by flat cells and surrounded by a thin fibrous wall while the second case was a very rare paraovarian cyst of mesonephric origin.

In conclusion, paraovarian cysts can be seen at any stage of childhood and generally produce clinical signs when larger than 5 cm. Ovary-preserving cyst excision is adequate for treatment in uncomplicated cases but salpingo-oopherectomy should be considered in complicated cases with circulatory disturbance or torsion, also taking the malignancy risk into account.

Competing interests

The authors declare that they have no competing interests.

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