

Prenatal Diagnosis of a Fetal Ovarian Cyst Complicated with Postnatal Ovarian Torsion: Case Report

Postnatal Dönemde Ovaryen Torsiyon ile Komplike Olan Fetal Over Kistinin Prenatal Tanısı

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ABSTRACT The incidence of fetal ovarian cyst (FOC) is estimated to be 30% in female fetuses but their size are rarely larger than 5cm in the prenatal period. Approach to these cases vary by the presence or absence of increase in cyst size and associated complications. Most of these cysts regress and disappear in the postnatal follow-up. Although the most frequent complication associated with FOCs is ovarian torsion, cyst rupture and hemorrhage is also not uncommon. In the case of ovarian torsion, necrotic and inflamed ovarian tissue may adhere to neighboring organs such as bladder and bowel, which may result in complications such as intestinal or urinary obstruction, perforation or even fetal demise. In this report, the follow up and postnatal treatment a case of fetal ovarian cyst that was diagnosed in the prenatal period is presented. The infant was operated for ovarian torsion in the postnatal 14th day.

Key Words: Neonatal ovarian cyst; torsion, mechanical

ÖZET Fetal over kistlerinin prenatal periyotta dışı fetüslerde görülme insidansı %30 civarında olup, nadiren 5 cm'den daha büyük boyuttadırlar. Bu kistlere yaklaşım kist boyutlarında artış olup olmaması veya komplike olması durumuna göre değişir. Bu kistlerin çoğu postnatal dönemde gerileyip kaybolur. Sık görülen komplikasyonu torsiyon olmasına rağmen rüptür ve hemoraji de gözlemlenebilir. Torsiyon vakalarında nekrotik ve inflame over dokusu mesane ve barsak gibi komşu organlarda obstrüksiyon, perforasyon ve hatta fetal ölüme kadar giden komplikasyonlara neden olabilir. Bu olgu sunumunda prenatal periyotta tespit edilen bir fetal over kistinin takibi ve postnatal dönemdeki tedavisi sunulmuştur. Yenidoğan postnatal 14. günde ovaryen torsiyon nedeniyle opere edilmiştir.

Anahtar Kelimeler: Yenidoğan over kisti; torsiyon, mekanik

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Fetal ovarian cysts (FOCs) are the most common abdominal cystic masses in female fetuses. Widespread utilization of prenatal ultrasound has increased earlier diagnosis of FOC.¹ The incidence of FOC is estimated to be 30% in female fetuses.² The exact etiology of these masses remains to be explained. The most commonly accepted mechanism in cyst formation is fetal ovarian stimulation by maternal and placental hormones.³ The decrease in hormonal stimulation after birth generally results in spontaneous resolution.⁴ Most common complication of FOC is ovarian torsion.⁵ Herein presented is a case of prenatally diagnosed fetal ovarian cyst that was surgically managed for ovarian torsion in the postnatal period.

CASE REPORT

A 20-year-old primigravid woman with a 33 week singleton pregnancy was referred to our institution for evaluation of a cystic mass in the fetal abdomen. On transabdominal ultrasound, fetal biometric measurements were compatible with gestational age. No major fetal anomalies were observed. The pregnant woman did not have any additional medical problems such as diabetes or hypothyroidism. An anechoic uniloculated cystic mass measuring 50x25 mm was observed in the fetal left abdomino-pelvic region (Figure 1). On weekly ultrasound examinations, no difference was observed in cyst dimensions. In the 39th week of pregnancy, the patient was admitted to our delivery unit for spontaneous labor. Subsequently, cesarean section was performed for cephalopelvic disproportion (CPD). A female infant was delivered, weighing 3780 gram with 1st and 5th minute APGAR scores of 7 and 10, respectively. Clinical examinations and vital signs of the infant were stable during the first postnatal week. Also, abdominal ultrasound examinations revealed no change in cyst dimensions and characteristics in 1st, 3rd, 5th and 7th postnatal days. The infant was discharged home and weekly follow-up was planned.

On the postnatal 14th day ultrasound scan, the cyst had a heterogeneous appearance with thin septations and debris accumulations. Moreover, no blood flow was observed in the left ovary on Doppler examination. Pediatric surgeons were consulted and with the present findings, ovarian torsion was suspected. Exploratory laparotomy was performed. Upon abdominal exploration, a necrotic left ovary that was twisted around its vascular pedicles was observed (Figure 2). Detorsion was performed, however, no sign of viability on the left ovary was observed. Left oophorectomy was performed and the operation was concluded. Postoperative follow-up was uneventful. The infant was discharged on the 5th postoperative day.

DISCUSSION

Ovarian cysts are occasionally encountered in female fetuses. The exact etiology and the most appropriate management strategy for these masses are



FIGURE 1: Prenatal ultrasonographic view of fetal ovarian cyst.



FIGURE 2: Intraoperative photo demonstrating left ovarian torsion.

currently unknown. Hormonal stimulation is the most widely accepted etiologic factor.¹ Maternal diabetes and fetal hypothyroidism were also previously associated with FOCs.^{3,4} Whenever a fetal abdominal cyst is encountered in a female fetus, the differential diagnosis should include FOC as well as mesenteric and urachal cysts, cystic teratomas, intestinal duplication anomalies and obstruction. Simple cysts are usually anechoic, homogeneous, thin walled, unilocular and unilateral. On the other hand, complicated cysts exhibit fluid-debris levels, septations, and hyperechogenic cyst walls due to dystrophic calcifications and infarcts.^{6,7} Most FOCs spontaneously resolve in the postnatal period due to cessation of maternal hormonal stimulation.⁴ Most significant complication of FOCs is ovarian torsion. Cyst rupture or hemorrhage may also occur. In the case of ovarian torsion, necrotic and inflamed ovarian tissue may adhere to neighboring organs such as bladder and bowel, which may result in complications such as intestinal or urinary obstruction, per-

foration or even fetal demise.⁸ Prenatally detected simple fetal ovarian cysts should be followed-up with serial ultrasound examinations for cyst size and characteristics. Close observation should be carried out for associated complications such as ovarian torsion, ascites, or hemorrhage.⁵ An attempt towards intrauterine aspiration of uncomplicated simple cysts under 5 cm may be performed. However, complications such as intra-cystic bleeding, re-accumulation of cyst fluid or ovarian torsion may follow this intervention. More serious complications such as fetal abdominal organ injuries, preterm labor and chorioamnionitis may also develop.

FOCs larger than 5 cm with complicated appearance on ultrasound must be closely observed for fetal ovarian torsion.⁶ Ultrasound and doppler is generally sufficient for diagnosis of ovarian torsion, however, magnetic resonance imaging (MRI) may also provide additional information. In the postnatal period, a persistence or progression in cyst diameters should prompt surgical intervention to prevent associated complications such as ovarian torsion or hemorrhage.⁷ Whenever possible, a minimally invasive approach such as laparoscopy should be carried out in an attempt to preserve fertility.⁸

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