Case Report

Sequence of Ultrasonographic Findings in Prenatal Fetal Ovarian Cyst Complicated with Spontaneous Intracystic Hemorrhage

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Fetal ovarian cysts commonly present as anechoic, thin wall and unilateral cyst. Intracystic bleeding is rare and mostly suspected by ultrasonographic presentation. All previous reported case occurred at late third trimester of pregnancy and all infants were delivered normally with fetal ovarian tumor with hemorrhage as the diagnosis. Thus, a sequence of ultrasonographic appearance for fetal ovarian cyst complicated with spontaneous intracystic bleeding has never been reported. Herein, the ultrasonographic appearance for fetal ovarian cyst complicated with spontaneous intracystic bleeding sequencing in a 3-weeks period was reported.

Keywords: *Ovarian cyst, Prenatal diagnosis, Hemorrhage, Ultrasonography, Fetal*

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Fetal ovarian cyst is a common differential diagnosis of prenatal isolated abdominal cyst in the female fetus[1]. A fetal ovarian cyst usually presents as anechoic, thin wall and unilateral cyst. Most fetal ovarian cysts resolve spontaneously postnatally[2]. Intrauterine complications, such as torsion, intracystic bleeding or polyhydramnios, do not commonly occur. Intracystic bleeding is usually suspected from the ultrasonographic presentation, such as a thick wall, fluid-debris level or intracystic septation. Causes of intracystic bleeding might be torsion or spontaneous. Prenatal fetal ovarian cysts complicated with hemorrhage were previously reported[3-7]. All of them occurred at late third trimester of pregnancy and all infants were delivered normally with fetal ovarian tumor with hemorrhage as the diagnosis. A case report revealed an ultrasound sequence of prenatal diagnosis of fetal ovarian cyst complicated by intracystic bleeding caused by torsion. Thus, a sequence of ultrasonographic appearance for fetal ovarian cyst complicated with spontaneous intracystic bleeding has never been reported. The authors present an ultrasonographic appearance for fetal ovarian cyst complicated by spontaneous intracystic bleeding without torsion and successful intrauterine management by conservative treatment sequencing in a 3-weeks period.

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Case Report

A 19-year-old nulliparous Thai woman was referred to HRH Princess Maha Chakri Sirindhorn Medical Center for fetal detailed ultrasonographic examination at 32 weeks gestational age because of a suspected abnormal fetal intra-abdominal mass. Her previous antenatal care history, physical examination and laboratory results were unremarkable. She attended antenatal care at a private clinic from 9 weeks of gestation. Her fetus was screened for structure at 19 weeks of gestation and resulted in a normal female fetus by standard screening. At our hospital, the physical examination revealed an appropriate uterus size for 32 weeks of gestation and an ultrasonographic examination showed a female fetus in cephalic presentation with an appropriate weight for gestation and normal amount of amniotic fluid. An anechoic, thin wall cyst, without a solid part measuring 39x38x38 mm in size was noted in the left fetal pelvic cavity. No Doppler vascular signal was noted in the cyst (Fig. 1A). The rest of fetal structure was unremarkable. Thus, benign simple fetal ovarian cyst was given as the

diagnosis which was document to the mother. The authors suggested observation and an appointment for follow-up in 2 weeks. At 34 weeks of gestation, the follow-up ultrasonographic examination revealed a similar finding and the cyst was the same size as previous ultrasonographic study (Fig. 1B). Two weeks later at 36 weeks and 6 days, a significant change in the ultrasonographic appearance of the mass was presented. The cyst content showed hyperechoic, solid-liked without a Doppler signal. The cyst sizes 40x36x35 mm (Fig. 2). No free fluid in the fetal abdomen was noted. The fetal weight and amount of amniotic fluid were within the normal range (amniotic fluid index 15 cm, fetal weight 2,651 g). The middle cerebral artery peak systolic velocity (MCA-PSV) was within the normal level. The fetal biophysical profile was assessed and showed reassuring results. The fetus was diagnosed as fetal ovarian cyst with intracystic bleeding without fetal anemia. Thus, conservative management was suggested with close fetal monitoring during the next three days. A neonatologist and pediatric surgeon were notified for an emergency condition if needed. Three days later (37w2d), the maternal condition was stable and a normal fetal movement count was noted. The fetal ultrasound evaluation presented a stable mass size, normal MCA-PSV (47.47 cm/s) and a reassuring fetal well-being. Four days later, stable maternal and fetal conditions were revealed. The cyst echogenicity decreased to a hypoechoic level with minimal echo without septation (Fig. 3). Then, a 1-week interval follow-up time was done. The MCA PSV (57.89 cm/s) and fetal well-being assessment revealed stable condition at 38w2d. The cyst presented minimal fluid component as a retracting clot (Fig. 4). The maternal and fetal conditions were followed until favorable Bishop scores were noted at 39 weeks of gestation. Then labor was induced followed by normal vaginal delivery without any intra-partum or postpartum complications. A healthy female infant without external gross abnormality was delivered. The infant weighed 2,734 g and the Apgar scores were 9, 9. The immediate and 24 hour neonatal conditions were stable. Neonatal abdominal ultrasonography was

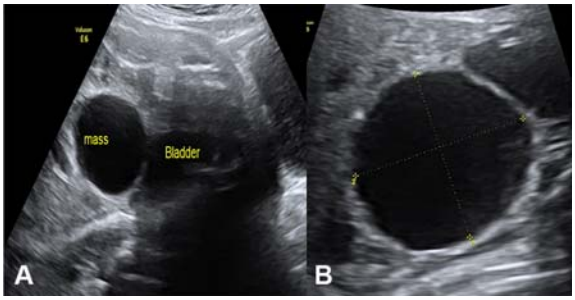

Fig. 1 Longitudinal scan of the fetal abdomen: (A) at 32 weeks of gestation, (B) at 34 weeks of gestation. The cyst was anechoic thin wall without a solid part and no fetal ascites that measured 39x38x37 mm.

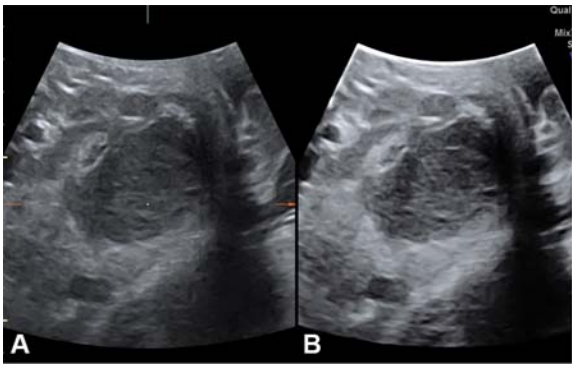

Fig. 3 Longitudinal (A) and transverse (B) scan of the fetal abdomen at 37 weeks and 2 day.

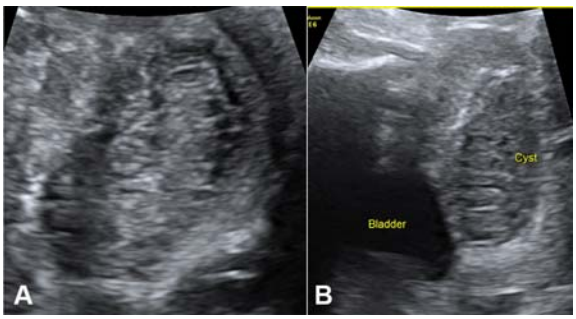

Fig. 2 Longitudinal (A) and transverse (B) scan of the fetal abdomen at 36 weeks and 6 day.

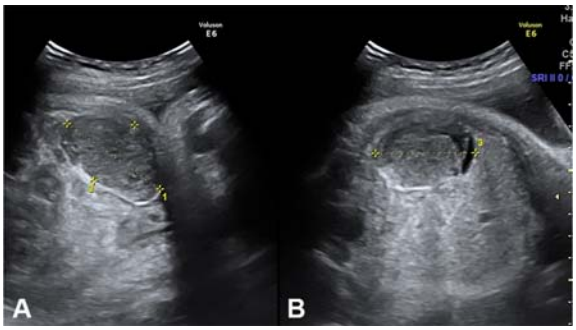

Fig. 4 Longitudinal (A) and transverse (B) scan of the fetal abdomen at 38 weeks and 2 day.

performed at 48 hours and presented a larger mixed iso/anechoic mass that measured 48x28 mm in the left pelvic region which was compatible with a complex ovarian cyst. The neonatologist and pediatric surgeon decided for conservative management because the neonatal condition was stable and the baby was discharged with her mother on the fourth day of life. Elective surgery was scheduled for an operation at 2 weeks of postnatal life. The operative findings revealed a left ovarian cyst with no torsion. Left oophorectomy was performed pathological examination, the result was reported as recent and old hemorrhagic cyst with focal dystrophic calcification without malignancy.

Discussion

Intracystic bleeding is a possible complication associated with prenatal ovarian cyst. The incidence is unknown. Possible causes of intracystic bleeding may be spontaneous or followed with torsion. A definite diagnosis of intrauterine torsion is quite difficult. Both ultrasonography and magnetic resonance imaging may not easily distinguish these complications. Most case reports diagnosed these cysts only as intracystic bleeding cyst[3-7]. This case is the first report which presented a complete sequence of ultrasonographic findings of prenatal ovarian cyst complicated by spontaneous intracystic hemorrhage without torsion. The authors presented the findings from uncomplicated cyst to 3 weeks after first detection of bleeding. A case report by Shozu[5] presented the sequence of ultrasonographic findings of a prenatal ovarian cyst complicated with intracystic hemorrhage similar to our case but the final operative findings were different. The previous case was a prenatal ovarian cyst complicated with intracystic hemorrhage that was caused by torsion. The previous case and this patient were both hemodynamically stable with successful conservative management. The changes in the sequence of the ultrasonographic findings were similar in both spontaneous intracystc hemorrhage and intracystic hemorrhage caused by torsion. The ultrasonographic feature of an early intracystic hemorrhage was a hyperechoic solid-liked pattern. Then, retraction of the clot and a fluid-debris level presented about 1 week after hemorrhagic initiation. Compared to a case with fetal anemia complicated by intracystic hemorrhage, the fetal hemodynamic instability presented within 1 week after suspected cystic complication[7]. Unfortunately, no ultrasonographic findings were presented. Thus, the authors postulate that monitoring for hemodynamic instability may be needed for about 1 week after intracystic hemorrhage is first suspected. If the hemodynamics are stable after the 1-week follow-up and the ultrasonographic findings reveal fluid accompanying the clot or the fluid presents as the first presentation, conservative management is preferred, regardless of torsion or spontaneous bleeding as the cause of hemorrhage.

Conclusion

Intracystic hemorrhage can be complicated in prenatal ovarian cyst. Hemorrhage may follow the torsion or occur spontaneously. The sequence of the ultrasonographic features were similar for spontaneous or torsion intracystic hemorrhage complications in fetal ovarian cyst. A normal MCA PSV, good biophysical profile and a retraction of the intracystic clot that presents around 1 week after hemorrhage may be reassurance of a stable clinical status and conservative management can be used accordingly.

What is already known on this topic?

Fetal ovarian cysts are a common differential diagnosis of prenatal fetal abdominal cyst in the female fetus. Most fetal ovarian cysts resolve spontaneously postnatally. Intrauterine complications, such as torsion, intracystic bleeding or polyhydramnios are rare.

What this study adds?

This is already known from previous article the intracystic hemorrhage of fetal ovarian cyst may follow a torsion or occur spontaneously. Ultrasonographic finding was used for diagnosis but could not differentiated between spontaneous or torsion intracystic hemorrhage complications in fetal ovarian cyst. Retracting of the clot will be revealed around 1 week after hemorrhage and may be reassurance of a stable clinical status.

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Potential conflicts of interest

None.

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torsion. J Pediatr Surg 1997; 32: 1447-9.
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ลำดับลักษณะภาพคลื่นเสียงความถี่สูงถุงน้ำรังไข่ที่มีเลือดออกภายในแบบเกิดเองของทารกในครรภ์

เกษม เรืองรองมรกต, เมสิตา สุขสมานวงศ์, วิภาดา เหล่าสุขสถิต, ธารางรัตน์ หาญประเสริฐพงษ์

ถุงน้ำรังไข่ในทารกในครรภ์ส่วนใหญ่จะมีลักษณะภาพคลื่นเสียงความถี่สูงถุงน้ำเดี่ยว สีดำ ผนังบาง การเกิดเลือดออกภายในถุงน้ำเกิดน้อย ส่วนใหญ่วินิจฉัยจากลักษณะภาพคลื่นเสียงความถี่สูง รายงานผู้ป่วยก่อนหน้าทั้งหมดพบช่วงปลายไตรมาสที่สามและคลอดในช่วงเวลาสั้น ๆ หลังการวินิจฉัย ดังนั้นลำดับลำดับลักษณะภาพคลื่นเสียงความถี่สูงถุงน้ำรังไข่ที่มีเลือดออกภายในแบบเกิดเองจึงไม่เคยมีรายงานมาก่อน รายงานผู้ป่วยฉบับนี้นำเสนอลักษณะภาพคลื่นเสียงความถี่สูงถุงน้ำรังไข่ที่มีเลือดออกภายในแบบเกิดเองอย่างต่อเนื่องประมาณ 3 สัปดาห์
