

Antenatal fetal ovarian torsion: findings on ultrasound and MRI

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Objective

To describe through a case report the diagnosis, management and literature review of fetal ovarian cyst torsion.

Methods

A 30-year-old Argentinian primigravida was referred to our prenatal department at 32 weeks with a singleton for a routine anatomic survey. None of the patient's parents reported any family history of congenital malformations. Biometry was over the stated gestational age (Percentile 75th). Female gender. No other ultrasound examinations performed before had detected any anatomic alteration until this examination which reveal an intrabdominal isoechogenic mass, with heterogeneous (solid/cystic) appearance, of 40 x 33 x 34 mm, with no vascularization at Doppler Color. It was located lower than left kidney but higher than bladder. Fetal kidneys were normal in size and growth and bladder had normal characteristics. At week 36+2, ultrasound exam revealed the persistence of the intraabdominal mass described before, with unchanged size and characteristics. No other abnormal findings were reported and fetal biometry and amniotic fluid were normal. At 37+2 weeks, a MRI, with no EV contrast, (T1 T2 – GE- 1.5 TESLA), were performed. It described a hyperintense mass in T2, T1 y T1 with fat suppression sequences of 45 x 30 x 30 mm, located in left hypochondria and flank, of a cystic nature with mucinous, hemorrhagic or protein content, surrounded by distal bowel loops with a minimum amount of liquid perimass. The prenatal differential diagnoses included intestinal duplication cyst and ovarian pathology. Postnatal ultrasound exam showed no modification in size, location and description of the mass and after 24 days the patient was operated laparoscopically without complications during or after the surgery, performing the complete excision of the mass. This involved a left adnexectomy because the mass represents an ovarian torsión in utero. This diagnosis was confirmed by histopathological report.

Results

The incidence of fetal ovarian cysts (FOCs) detected in utero has increased in the past decade due to the availability and prevalent use of ultrasound. FOCs are usually seen towards the end of the second trimester during a routine prenatal ultrasound. Stimulation of the fetal ovary by placental and maternal hormones leads to the development of ovarian cysts. They tend to regress shortly after birth once the hormonal stimulation has decreased. Complications such as hemorrhage, rupture, and torsion can develop. Ovarian torsion is the most common complication of an untreated ovarian cyst. Diagnosis of ovarian torsion is critical for timely management and is easily detectable with the use of ultrasound. Torted ovarian cysts (OCs) may develop adhesions with surrounding organs and lead to serious complication. Management of fetuses with OCs is highly debated and recommendations ranging from expectant follow up, selective or systematic surgery, or invasive prenatal aspiration have been made. Some authors advocate prenatal aspiration of cyst in orden to reduce the volume and prevent ovarian torsion, but risks of preterm labor, chorioamnionitis, fetal injury and fetal pain are of concern. Furthermore, recurrence may occur owing to persistent fetal exposure to hormonal stimulation after the procedure until birth Fetal ovarian cysts are the most common abdominal masses in fetuses and neonates. Majority of them are benign and resolve within a few months after birth. The earliest age at which a FOC can be detected is at 19th week of gestation. However, most cysts are identified around 28 weeks of gestation.

Conclusion

In conclusion, serial ultrasound examinations of fetal ovarian cysts are critical since ovarian torsion is most common in the intrauterine period. When small and simple follicular cysts start to enlarge rapidly with changes in ultrasound features, ovarian torsion should be highly suspected. A unilaterally enlarged ovary with peripheral cysts containing fluid-debris level is highly suspicious for ovarian torsion and hemorrhagic infarction. MRI is a useful imaging adjunct and should be performed when ultrasound does not provide definitive information or when serial ultrasound examinations show cyst persistence. Early diagnosis of ovarian torsion is critical in avoiding complications and planning management. Therefore, it is important to understand and assess the imaging findings of ovarian torsion. Ultrasound is the imaging modality of choice; however, it is not always definitive and diagnosis can be challenging. MRI is a better imaging modality to evaluate for signs of complications and to arrive at a more definitive diagnosis.