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Ovarian torsion in utero diagnosed at 37 weeks of pregnancy: A case report

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ABSTRACT

Background: Fetal ovarian masses are common abdominal anomalies in female fetuses, often diagnosed in the third trimester. Most masses are benign and tend to resolve spontaneously within a few months after birth, but larger masses may present complications such as torsion.
Case: A 21-year-old primagravid woman was noted to have a complex avascular solid mass in the fetal left pelvis, which was consistent with complex fetal left ovarian torsion. The patient underwent induction of labor at 39 weeks for possible intervention. The infant underwent surgery at 5 weeks of age and a torsed, necrotic ovary was discovered.
Conclusion: The diagnosis of ovarian torsion in utero is rare, and prenatal and postnatal guidelines are needed on frequency of monitoring, timing of delivery, and postnatal follow-up.

1. Introduction

Fetal ovarian masses are the most common abdominal anomalies diagnosed in the female fetus. These masses are caused by excessive stimulation of fetal ovaries by maternal and placental estrogen and gonadotrophins [1]. Fetal ovarian masses are most often diagnosed in the third trimester, especially after 28 weeks of gestation. Most masses are benign and tend to resolve spontaneously within a few months after birth, when the influence of maternal hormones gradually declines [2]. Larger masses (typically >50 mm) may present complications such as hemorrhage, rupture, torsion, and autoamputation [3]. Most ovarian torsions are thought to occur in the antenatal period and less frequently postnatally [4]. Because the diagnosis is often made postnatally, there is an abundance of literature on neonatal ovarian torsion, but few recommendations exist for prenatal and postnatal management of ovarian torsion diagnosed in utero. We report on the management of a unique case of ovarian torsion noted on prenatal ultrasound.

2. Case

A 21-year-old primagravid woman presented for a growth ultrasound because of concern that the uterine size was less than expected at 37 weeks of gestation. Fetal growth measurements were within normal limits, at 18th percentile; it was seen that the fetus was female. However, an incidental 3.17 × 3.79 × 3.34 cm solid mass was visualized in the left fetal abdomen (Fig. 1). The mass was separate from the adrenals, kidneys, bladder, and liver. There was no flow on color Doppler. No dilated bowel loops of free fluid in the abdomen were noted. The origin was unclear, but an enlarged ovary, complex ovarian cyst or ovarian torsion was suspected.

The mother had established routine prenatal care at 19 weeks. Her fetal survey ultrasound at 24 weeks of gestation had been unremarkable. The patient was evaluated by maternal fetal medicine due to the mass and imaging was repeated at 37 weeks and 5 days, when again a complex avascular solid mass was seen in the fetal left pelvis measuring 2.72 × 3.86 × 3.48 cm (Fig. 2). A rim of anechoic area surrounded the mass. The mass was most likely consistent with complex fetal left ovarian torsion. After discussing risks and benefits with the patient, the recommendations were to induce labor at 39 weeks with immediate postnatal evaluation and imaging.

At 39 weeks, the patient presented for induction of labor for fetal left pelvic mass. The hospital course was uneventful, with the patient delivering within 24 h via a vacuum-assisted vaginal delivery and mediolateral episiotomy. Pediatricians were present at delivery. The neonate was small for gestational age, with birth weight of 2460 g, measuring third percentile on the Olsen growth curve. Apgar scores were 8 and 9 at 5 and 10 min, respectively. Arterial pH was 7.33.

Postnatal ultrasound showed a 3.8 cm complex mass within the left adnexa with a central solid component with surrounding loculated complex fluid collection (Fig. 3). The mass was not palpated on exam. A recommendation was made for follow-up with pediatric surgery

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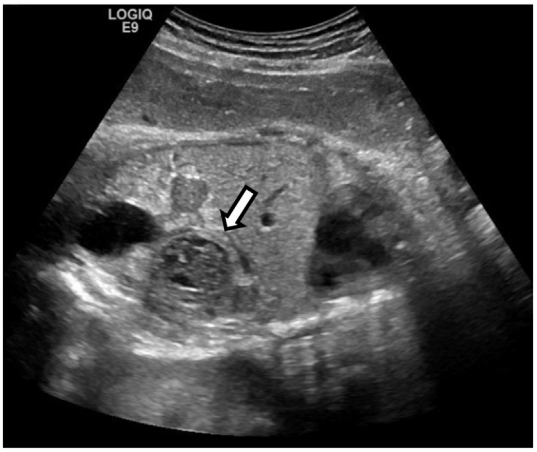

Fig. 1. 3.17 × 3.79 × 3.34 cm solid mass on sagittal cross-section of fetal abdomen at 37 weeks (arrow).

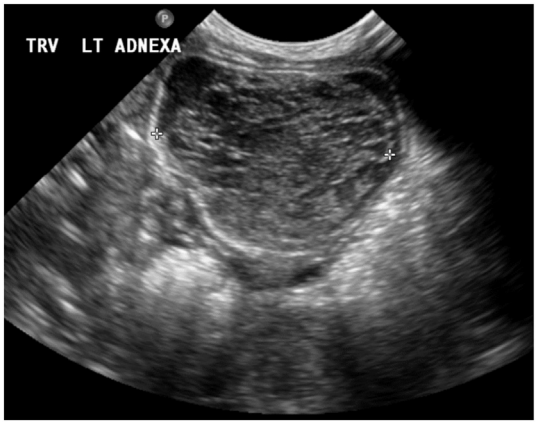

Fig. 3. Ultrasound of complex mass in left adnexa on postnatal day 1.

after discharge. The infant was discharged on postpartum day 2 with her mother.

Pediatric surgery was consulted and deferred surgical management due to improved tolerance of surgery for the infant and low probability of the ability to salvage the ovary. The infant underwent surgery at 5 weeks of age. An exploratory laparotomy was performed, and a necrotic ovary was noted and excised (Fig. 4). No complications were noted and the patient was discharged the same day.

3. Discussion

In utero ovarian torsion is rare. In our case, the left fetal ovary was diagnosed to be torsed at 37 weeks. Maternal fetal medicine recommended induction at 39 weeks to possibly improve the outcome and salvage the remaining fetal ovary. However, after the infant was assessed by pediatric surgery, the decision was made to delay surgery to 5 weeks.

This case reflects the lack of recommendations to guide not only the prenatal but also the postnatal management of in-utero diagnosis of ovarian torsion. There are no guidelines on frequency of ultrasound prenatally or timing of delivery. It is unknown if early delivery will improve outcomes. Postnatally, a “wait-and-see” policy is usually preferred, as most masses resolve spontaneously after birth. However, if the ovary is already known to be torsed, earlier intervention could potentially save the ovary. An opposing thought would be that once an ovary is found to be torsed, it is impossible to know how long it has been torsed and could already be past the point of saving. If this is the case, then it may not be advantageous to offer an early induction of labor in efforts to save the ovary. With the above ideals in mind, an informed discussion between patient and care providers is required for optimal care.

A multidisciplinary approach to the timing of intervention in the postnatal period is also important. In our case, the decision was made by the pediatric surgery team to delay surgery until 5 weeks of life due to the improved ability of the infant to tolerate surgery and the low probability of salvaging the torsed ovary. A discussion with neonatology, pediatric surgery, anesthesia and the parents/guardians would be prudent to weigh the advantages and disadvantages of immediate versus delayed intervention.

Our diagnosis of ovarian torsion in utero was based on ultrasound findings of a 38-mm left adnexal mass, which was complex, avascular, with a rim of anechoic area. A systematic review and meta-analysis consisting of 34 studies and 954 fetuses [1] reported ovarian masses >40 mm are at higher risk of ovarian torsion and require postnatal surgery. However, findings suggested that complex masses, regardless of size, are more likely to require postnatal surgery. This finding is concordant with our case. The absence of vascular flow is highly indicative of ovarian torsion. A complex mass with a rim of anechoic area could indicate hemorrhage and can be considered a marker for ovarian torsion.

In conclusion, while diagnosing ovarian torsion in utero is rare, prenatal and postnatal guidelines are needed for frequency of monitoring, timing of delivery, and postnatal follow-up. A complex ovarian mass with absent vascular flow and rim of anechoic fluid should raise suspicion for prenatal ovarian torsion and appropriate counseling should be initiated.

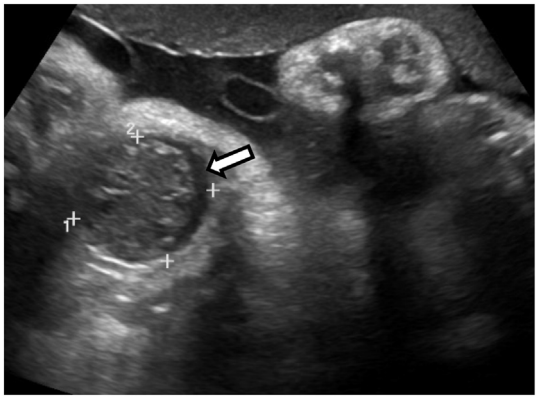

Fig. 2. Left fetal complex mass with surrounding hypoechoic ring (arrow).

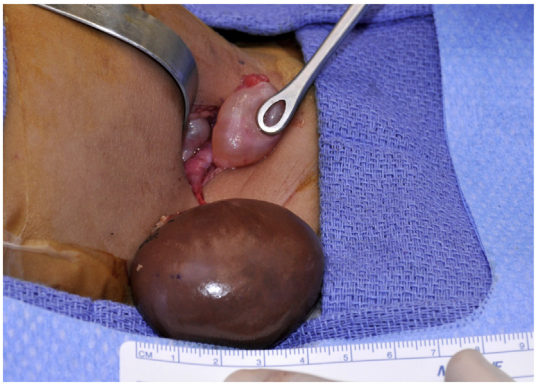

Fig. 4. Intraoperative finding of torsed necrotic fetal ovary. A normal ovary is visualized in the ring forceps for comparison.

Contributors

Haleema Saeed drafted the manuscript.
Leah Hong drafted the manuscript.
Nicolina Smith drafted the manuscript.
Majid Shaman contributed to review and editing of the manuscript.
All authors contributed equally to creation of this manuscript.

Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Patient Consent

Obtained.

Provenance and Peer Review

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