

American Pediatric Surgical Association

**Prenatal Counseling Series**  
**Congenital**

Fetal Abdominal Cysts



**APSA**

American Pediatric  
Surgical Association

*Saving Lifetimes™*

from the

**Fetal Diagnosis and Treatment Committee**

of the American Pediatric Surgical Association

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## Fetal Abdominal Cysts

### Differential Diagnosis

When a fetal abdominal cyst is seen on prenatal ultrasound, the differential diagnosis is broad. A practical approach to diagnosis is based on origin and incidence of the cyst.

In a female fetus, the most common diagnosis is an ovarian cyst. Diagnoses to consider in both male and female fetuses include cysts originating from abdominal organs, cysts of intestinal origin and cysts of genitourinary origin.

#### **Cysts of GI origin**

Cysts arising from organs

- Hepatic and choledochal cysts
- Splenic cysts
- Pancreatic cysts

Cysts of intestinal origin

- Duodenal atresia
- Enteric duplication cysts
- Lymphatic malformations and Mesenteric cysts

#### **Cysts of Genitourinary origin**

Cysts of Urinary tract origin

- Bladder in BOO
- MCDK
- Simple renal cysts
- UPJ obstructions
- Duplicated collecting systems
- Ureterocele

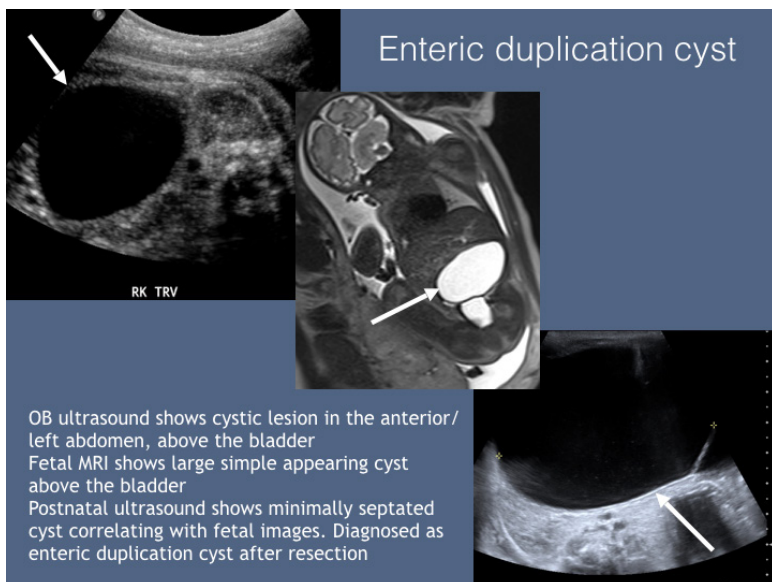
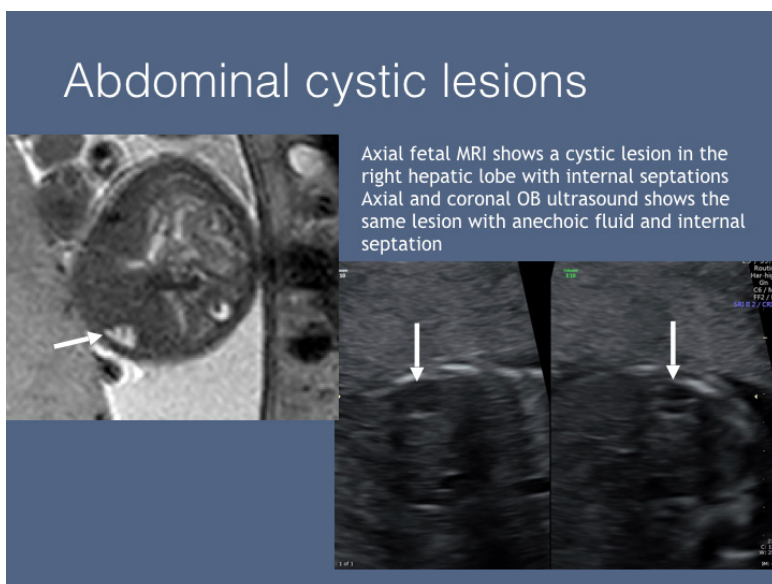
Ovarian cysts

Hydrocolpos in cloacal anomalies

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Fetal cysts are usually identified on routine prenatal ultrasound. Important sonographic features to consider include size, location and presence of septations or internal echogenicity. Malignancy in a fetal cyst is extremely rare, so the presence of echoes or septations is much more likely to be associated with in utero cyst torsion rather than malignancy.

Benign cystic neoplasms such as teratoma should be considered when the cyst contains solid components or septations.



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### Initial Evaluation

- Detailed obstetrical ultrasound
- Consider fetal MRI: MRI may be helpful in characterizing these cysts and distinguishing an ovarian cyst from other intra-abdominal cysts, but it should not be considered mandatory in the evaluation of these patients.<sup>1</sup>
- Amniocentesis to rule out aneuploidy
- Close follow up for the development of polyhydramnios and risk of late gestation preterm labor
- Referral to a Fetal Care Center may be considered for a multidisciplinary consultation with surgery, neonatology, genetics
- Fetal intervention for gastrointestinal cysts is not needed

Determining origin of the cyst may be very difficult. Usually can be distinguished from ascites by compression of the bowel into the retroperitoneum.

Important to rely on anatomic relations and associated distinct features

- Inner echogenic strip in duplication cysts
- Calcifications in meconium pseudocysts
- Intimate relationship to the hepatic artery in choledochal cysts
- Surrounding parenchyma in hepatic, splenic or pancreatic cysts

### Prenatal Counseling – Ovarian Cysts

Once a prenatal abdominal cyst is identified, it should be followed with serial ultrasound.

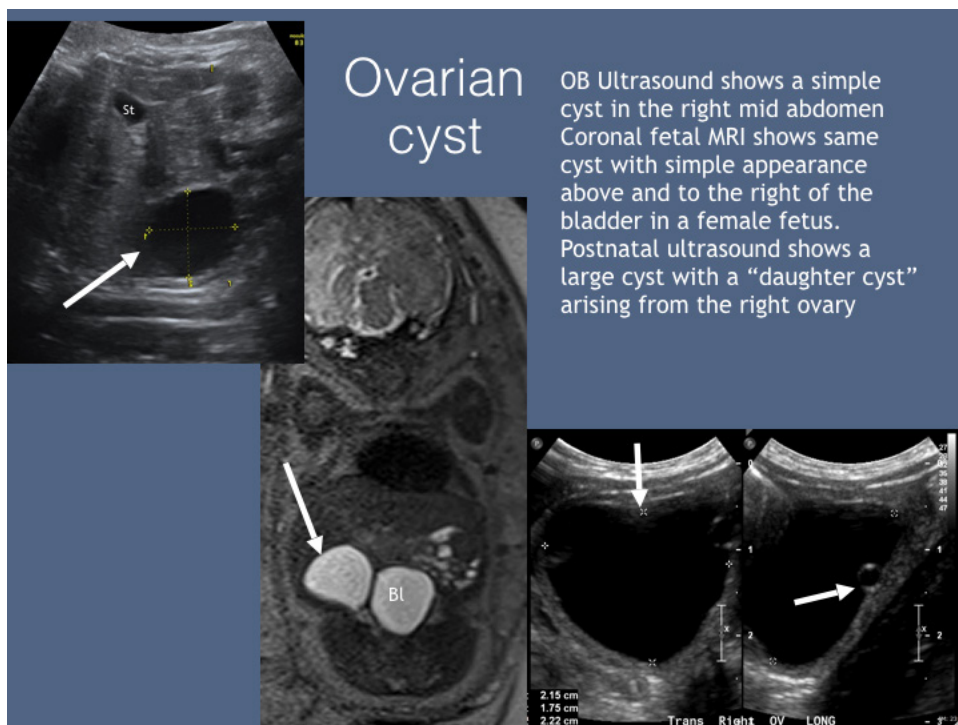
#### **Dx Sonographic Criteria**

- 1- Cystic structure on one side of the fetal abdomen
- 2- Normal genitourinary tract (Kidneys – Ureters and bladder)
- 3- Normal GI tract (Stomach – small and large bowel)
- 4- Female fetus

As long as cyst size is stable, ultrasounds can be obtained every 2-4 weeks.

In utero cyst aspiration is rarely indicated, but should be considered if the cyst is causing bowel obstruction and resulting polyhydramnios, compressing the genito-urinary system and causing urinary obstruction, or any other significant mass effect.<sup>2</sup>

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*Images courtesy of Mariana Meyers, MD - Colorado Fetal Care Center*

Another reason to consider fetal intervention is to prevent in utero torsion. Cysts greater than 4 cm are at greater risk of torsion, and in utero cyst decompression can be performed under local anesthesia with ultrasound guidance.<sup>3,4</sup>

All in utero manipulations put the patient at risk of preterm premature rupture of membranes, however, and the risks and benefits should be considered and discussed with the patient thoroughly.

As long as cyst size is stable, there is no indication for scheduled delivery of these patients. They are unlikely to require urgent surgical intervention at the time of birth as long as they are asymptomatic.

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### Prenatal Considerations

- Prenatal ovarian cysts are most often simple follicular cysts that form as a result of maternal and placental hormones.
- They are almost always unilateral and almost never associated with malignancy.
- About 40 to 50% of the time, ovarian cysts torsion prenatally and result in loss of the ovary.<sup>5,6</sup>
- Parents should be counseled that fertility is usually preserved in these cases as long as the contralateral ovary is normal.<sup>7</sup>
- If a complex cyst is seen on prenatal imaging, this is more concerning for in utero torsion as compared to a simple cyst.<sup>5</sup> In all cases, parents should be counseled that as long as the baby is asymptomatic at time of birth (tolerating feeds, no abdominal distention), then the cyst can be followed by postnatal ultrasound.
- About half of the time, these cysts resolve spontaneously after the baby is born.<sup>9</sup>

### Management of the Newborn

- Accurate post-natal diagnosis
- Exclusion of associated conditions
- Thorough exam to detect dysmorphic features
- Genetic consultation if needed
- Post-natal imaging: US - MR abdomen
- Surgical management depending on the cause

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### Post-natal Considerations of Ovarian Cysts

- It is very unlikely that the baby would require any urgent surgical intervention at the time of birth.
- If the cyst is present on post-natal ultrasound and is greater than 4 to 6 centimeters in size, then cyst drainage or resection should be considered to reduce risk of torsion. This intervention can usually be done laparoscopically.<sup>8</sup>
- Cysts can be followed with serial ultrasounds but if they persist for longer than three months without any decrease in size, then elective resection/drainage should be performed. In these cases surgery is both diagnostic and therapeutic.
- Parents of fetuses with presumed ovarian cysts should understand that even if their child requires surgery, outcomes are generally excellent and there is little chance of long-term adverse outcome for the baby. It is also important to emphasize the preservation of fertility and hormonal function in the scenario of unilateral ovarian loss.

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