

A 23-year-old woman comes to the clinic for a routine 20-week obstetrical ultrasound. This is her first pregnancy, and she had an increased maternal serum  $\alpha$ -fetoprotein level during the first trimester. On ultrasound, the fetus has thickened intestinal loops that are floating free in the amniotic sac. Which of the following outcomes is most likely associated with this fetus's condition?

- ☐ A. Coexisting cardiac malformation
- ☐ B. Coexisting neural tube defect
- ☐ C. Primary surgical closure after birth
- ☐ D. Spontaneous resolution after birth
- ☐ E. Trisomy syndrome

Submit

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- ☐

A. Coexisting cardiac malformation [6%]
- ☐

B. Coexisting neural tube defect [22%]
- ☒

C. Primary surgical closure after birth [56%]
- ☐

D. Spontaneous resolution after birth [2%]
- ☐

E. Trisomy syndrome [14%]

Proceed to Next Item

Explanation:

User Id:

Pediatric abdominal wall defects	
Diagnosis	Clinical features
Umbilical hernia	<ul style="list-style-type: none"><li>Defect at linea alba covered by skin</li><li>Sometimes contains bowel</li><li>Umbilical cord inserts at apex of defect</li></ul>
Gastroschisis	<ul style="list-style-type: none"><li>Defect to the right of the cord insertion not covered by membrane or skin</li><li>Contains bowel</li><li>Umbilical cord inserts next to defect</li></ul>
Omphalocele	<ul style="list-style-type: none"><li>Midline abdominal wall defect covered by peritoneum</li><li>Contains multiple abdominal organs</li><li>Umbilical cord inserts at apex of defect</li></ul>



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This infant has **gastroschisis**, a congenital abdominal wall defect caused by a vascular insult resulting in bowel herniation. Second-trimester sonography is more than 95% sensitive for abdominal wall defects, and maternal serum  $\alpha$ -fetoprotein is usually elevated. Gastroschisis results in the bowel being exposed to amniotic fluid, which causes **inflammation** and **edema** of the bowel wall. This inflammation increases the risk of **complications** (eg, necrotizing enterocolitis, short bowel syndrome). **Dysmotility** (ileus, delayed gastric emptying, intolerance of feeds) occurs in over 50% of cases and may lead to prolonged reliance on total parenteral nutrition. Gastroschisis is an **isolated** defect >90% of the time.

After delivery, the exposed bowel should be covered with **sterile saline dressings** and **plastic wrap** to minimize insensible heat and fluid losses. The infant should have a nasogastric tube placed to decompress the bowel and should be started on antibiotic therapy. Prompt **surgical repair** is necessary and can usually be accomplished in a **single-stage closure**.



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**(Choices A and E)** Other major malformations, such as cardiac disease, neural tube defects, or trisomy syndromes, occur in approximately half of patients with **omphalocele**. Infants with omphalocele have a covering sac of peritoneum over healthy bowel. They typically require surgery immediately after birth by staged closure with a silastic silo.

**(Choice B)** Maternal serum  $\alpha$ -fetoprotein levels can be elevated due to abdominal wall defects (as in this case) or other conditions, including neural tube defects. However, infants with gastroschisis are not at increased risk for neural tube defects.

**(Choice D)** **Umbilical hernias** are a type of abdominal wall defect that can resolve spontaneously over time. Umbilical hernias can be differentiated from omphaloceles in that these hernias are covered with skin rather than peritoneum.

#### Educational objective:

Gastroschisis is usually an isolated defect lateral to the umbilical cord with uncovered bowel herniating through the abdominal wall. Maternal serum  $\alpha$ -fetoprotein is typically elevated during pregnancy. After delivery, the exposed bowel should be covered with sterile saline dressings and plastic wrap. Immediate surgery is required.

#### References:

1. **Pediatric abdominal wall defects.**
2. **Gastroschisis: an update.**
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Media Exhibit

chisis versus omphalocele

Gastroschisis



Umbilical cord  
to left of defect

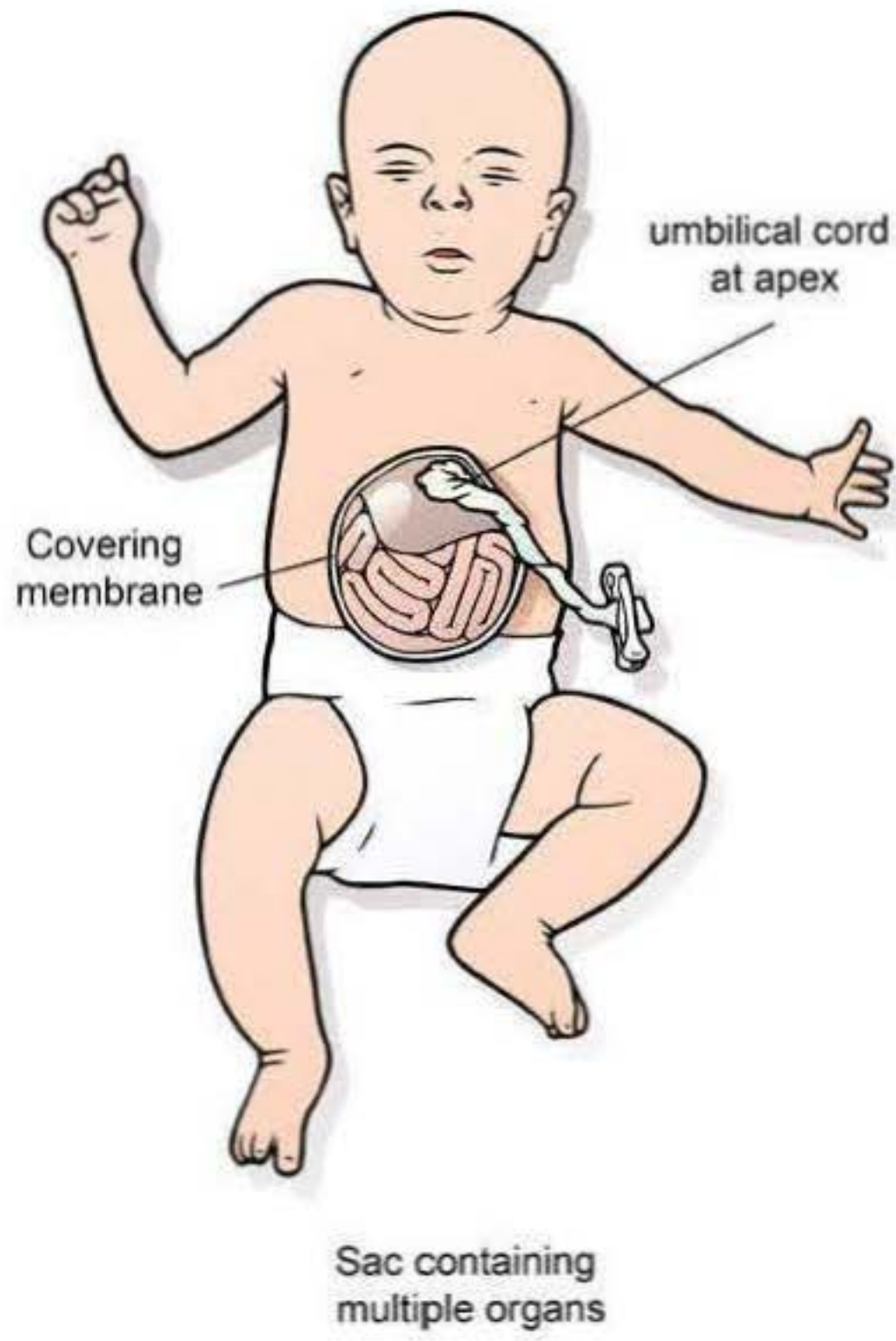
Eviscerated bowel with  
no covering membrane

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Media Exhibit

Gastroschisis versus omphalocele

Omphalocele



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Media Exhibit

hernia

