

American Pediatric Surgical Association

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# Standardized Toolbox of Education for Pediatric Surgery

## Abdominal Wall Defects

APSA Committee of Education  
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# Abdominal Wall Defect

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# History

- **Mother carrying fetus has a prenatal ultrasound which demonstrates a fetus with an abdominal wall defect**
- **Born with bowel visible coming through a hole in the abdominal wall**

# History Discussion Slide

- **What other points of the history do you want to know?**
  - Any amniocentesis?
  - Any past history of similar issues in the family history?
  - Was there any other issues during the prenatal history?
  - Was there any use of prescription meds by mother?
  - Was there any use of illicit drugs by the mother?
  - Does the child require intubation during resuscitation?
  - What has been done for the child prior to your examination?
  - Has the child passed meconium?

# Physical Exam

- **What specifically would you look for?**
  - **Appearance:** of the child – are there any concerns for syndromes (big tongue, heart defects, hemihypertrophy)?
  - **Relevant Exam findings:** Where is the defect – at are near the umbilicus? What part of the bowel is visible? Does it look healthy? Are there parts that blind end?

# Gastroschisis



# Omphalocele



# Studies (Labs, Imaging)

- **What labs needed?**
  - Electrolytes
- **What Imaging Needed**
  - ECHO if heart defects suspected
  - Abdominal radiograph after NG inserted



# Case Discussion

- **Diagnosis**
  - Gastroschisis or Omphalocele
- **Plans**
  - **Pre-op:** IV fluids, NG, keep bowel covered and warm, arrange transfer to tertiary care center if needed
  - **Consent:** Discuss with parents about temporary (silo) or primary closure
  - **Operative:** Plan to try to close if possible

# Interval steps before / instead of surgery

- **Gastroschisis:**

- If there is a lot of bowel outside the abdomen and the abdomen is small, it may be a challenge to close the defect primarily. In this situation, would use a preformed silo bag to temporarily house the bowel. The bowel will then re-enter the abdomen via gravity and/or with incrementally pushing bowel into the abdomen. May require narcotics to hasten relaxation. Ideally would get all of bowel into the abdominal cavity within 1 week of life.

# Interval steps before / instead of surgery

- **Omphalocele:**

- Some defects are very large = giant omphalocele. In these situations, temporizing is advocated. Can use silvadene and paint onto the sac to “mature” it. Can then slowly push the bowel back over months. Will need OT to help construct support for the bowel. This technique has been called “paint and wait”. Families can be taught painting and will allow discharge to allow growth prior to closure.

# Operation

- **Plan, approach**
- **Steps**
- **Operative diagrams, pictures**
  - ?video if not too big a file
- **May need more than one slide**
  - Use one slide per approach (MIS, open)

# Silo



# Gastroschisis



# Giant Omphalocele Paint and Wait



# Complications

- **Peri-operative**
  - All patients with exposed bowel will have prolonged (~2-3 week) of ileus; will require TPN prior to full feeds being initiated
- **Long Term**
  - Issues with adhesions; all patients will by definition have malrotation so parents need to be cautioned to green emesis



# Post-operative Management

- Awaiting resolution of ileus
- Initiation of feeds may take ~2-3 weeks
- Upon initiation of feeds, slow advancement is the rule
- May take several day/weeks to get to full feeds; watch for NEC during feed advancement

# Questions

1. Which abdominal wall defect is associated with chromosomal anomalies?
  - A. Gastroschisis
  - B. Omphalocele
  - C. Both
  - D. Neither

# Questions

1. Which abdominal wall defect is associated with chromosomal anomalies?
  - A. Gastroschisis
  - B. Omphalocele**
  - C. Both
  - D. Neither

# Questions

2. Which abdominal wall defect is associated with intestinal atresia?
- A. Gastroschisis
  - B. Omphalocele
  - C. Both
  - D. Neither

# Questions

2. Which abdominal wall defect is associated with intestinal atresia?
- A. **Gastroschisis**
  - B. Omphalocele
  - C. Both
  - D. Neither

# Questions

3. Which abdominal wall defect is associated with malrotation?
- A. Gastroschisis
  - B. Omphalocele
  - C. Both
  - D. Neither

# Questions

3. Which abdominal wall defect is associated with malrotation?
- A. Gastroschisis
  - B. Omphalocele
  - C. Both**
  - D. Neither

# Questions

4. Which abdominal wall defect is usually associated with long term sequelae?
- A. Gastroschisis
  - B. Omphalocele
  - C. Both
  - D. Neither



# Questions

4. Which abdominal wall defect is usually associated with long term sequelae?
- A. Gastroschisis
  - B. Omphalocele
  - C. Both
  - D. Neither**

# Final Discussion/Review

1. Gastroschisis will present as a defect to the right of the umbilicus
2. Omphalocele will usually have bowel contained in a sac unless it has ruptured
3. Omphalocele is associated with chromosomal defects while gastroschisis is not

# Final Discussion/Review

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4. If bowel is exposed, TPN will be needed
5. Will need to prepare parents for a possible long stay in the hospital

# Acknowledgement Slide

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**The preceding educational materials were  
made available through the  
American Pediatric Surgical Association**

**In order to improve our educational materials  
we welcome your comments/ suggestions:**

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