Gastroschisis

Gastroschisis defined as the herniation of abdominal organs through the abdominal wall. It is not covered by the peritoneum, and usually occurs to the right of the umbilicus. It is associated with prematurity, and increased AFP can be seen in maternal serum. Surgery is the only curative treatment. Necrotizing enterocolitis and short bowel syndrome can occur as some of the complications of gastroschisis.



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Characteristics

Herniation of Abdominal Organs via Abdominal Wall
Hermit-crab comes out from the Baby's Abdomen
Gastroschisis is characterized by herniation of abdominal organs via abdominal folds, typically on the right side of the umbilicus. It occurs due to a weakness in the abdominal wall. Defective ingrowth of mesoderm, impaired midline fusion, or inappropriate apoptosis may contribute to this process.

Not Covered by Peritoneum
No-sign Peritoneum-curtain
Gastroschisis is characterized by an anterior wall defect and is found in infants. It occurs due to a failure of lateral fold closure. Gastroschisis is not covered by the peritoneum and can be an extrusion of intestines, the stomach, the liver, and/or other abdominal contents. This characteristic makes it different from omphalocele, which is covered by peritoneum.

Right Side of Umbilicus
Writing on Right Side of Umbrella
Gastroschisis is caused by a midline defect of the primordial umbilical ring. It presents with a nonintact amnio-ectodermal junction on the right side, or it later separates, allowing the bowel and other organs to extrude.

Associations

Prematurity
Incubator
Gastroschisis is not associated with chromosomal abnormalities but instead is multifactorial. Risk factors include young mothers with few pregnancies, maternal exposure to smoking, prematurity, small-for-gestational-age (SGA) infants, and in utero growth restriction.

Diagnosis

Increased AFP
Up-arrow Air Force Pilot
Increased AFP (alpha-fetoprotein) in maternal serum has been linked to gastroschisis. Increased AFP can also be seen in other abdominal defects (e.g., omphalocele), neural tube defects, and other malformations.

Management

Surgery
Surgeon
Surgery is the only curative treatment for gastroschisis. It aims to reduce the herniation and close the abdominal wall.

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Complications

Necrotizing Enterocolitis

Necrosis-crow Carrying Colon-on-fire

Necrotizing enterocolitis can develop in up to 20% of all gastroschisis patients and can also occur as a complication of gastroschisis repair. It is seen in premature infants and is characterized by abdominal tenderness and distention, intolerance to enteral feeding, bloody diarrhea, lethargy, shock, respiratory distress, and body temperature instability.

Short Bowel Syndrome

Bowel-bowl in Shorts

Short bowel syndrome is a malabsorption syndrome that occurs due to inadequate small intestine function. It can occur as a complication of small intestinal resection or injury of the bowel due to vascular compromise of the extra-abdominal bowel (vanishing gastroschisis) in infants with gastroschisis.

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