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Body Stalk Anomaly

Anterior abdominal wall defects are classified as gastroschisis, omphalocele and body-stalk anomalies. Body stalk anomaly (BSA) is the most rare and a severe abdominal wall defect associated with a high incidence of spontaneous abortion. BSA consists of a large abdominal wall defect in more severe cases of thoracic organs as well, associated with severe kyphoscoliosis and a very short or even absent umbilical cord. In addition the upper half of the fetal body is in the amniotic cavity while the lower half is in the celomic cavity. This anomaly might also occur in conjunction with neural tube defects, genitourinary malformations, abnormalities of the chest wall, intestinal atresia, and craniofacial defects. The most plausible theory of formation of BSA is that early amnion rupture before obliteration of the celomic cavity is the underlying mechanism. The rupture results in the expulsion of the embryo or a part of it into the exocoelomic cavity. Other alternative theories include an abnormal embryonic folding resulting in the failure of the celomic cavity to obliterate or vascular disruption during the first 4-6 weeks of gestation. Most cases of body stalk syndrome are incompatible with life. Body stalk anomaly is not associated with chromosomal abnormalities and there is no increased risk for a recurrence. Levels of alpha-fetoprotein in maternal serum are very high in BSA. Prenatal ultrasound in the 9th to 10th weeks of pregnancy has detected this diagnosis. It has been reported that 50% of women with fetuses affected by body stalk anomaly smoke cigarettes or drink alcohol and 30% of them smoked marijuana. Continuation of pregnancy in the presence of BSA is associated with greater maternal risks, in the form of labor complications requiring cesarean section. Prenatal diagnosis enables prompt knowledge of the fetus condition permitting appropriate counseling and management.

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Transverse Colonic Volvulus

Around 5% of all intestinal obstructions are caused by colonic volvulus. Sigmoid colon is the most common site for volvulus followed by the cecum, transverse and splenic flexure in order of frequency. Volvulus of the transverse colon is a very rare event in children. Mean age is ten years. Main reason is that the broad-based short mesentery normally prevents the transverse colon from rotating either clockwise or anti-clockwise. Transverse colonic volvulus (TCV) is more common in Eastern Europe, Scandinavian countries and Japan. Risk of volvulus is increased by the following factors: elongation and redundancy of the transverse colon, narrowing of the mesenteric attachments causing flexures to come together, and absence or malfixation of the mesenteries. Other mechanical causes include previous volvulus of transverse or sigmoid, distal colonic obstruction, adhesions, malposition of the colon after surgery, inflammatory structures and carcinoma. Chronic constipation, cerebral palsy, mental retardation, Hirschsprung's disease and high fiber diet is a characteristic found in children with TCV. Symptoms of TCV include abdominal pain, vomiting, abdominal distension and tenderness. Clinically TCV presents acutely and fulminant or subacute progressive depending on the degree of ischemia. Simple films show distension of proximal colon, empty distal bowel and two air-fluids levels caused by double closed loop obstruction. A barium enema might show a "bird beak" or "ace of spades" at the focus of the twist bowel. CT Scan is diagnostic. Management consists of manual detorsion, detorsion with colopexy, resection with primary anastomosis in case of significant ischemia, or resection with colostomy and/or ileostomy and mucous fistula in cases of intraoperative hemodynamic instability. Manual detorsion is associated with a high incidence of recurrence. Resection with or without primary anastomosis is the treatment of choice to prevent recurrence.

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Povidone-Iodine Pleurodesis

Povidone-iodine is an antiseptic material used routinely to clean surgical sites and as a procedural disinfectant. It has been utilized as a safe chemical pleurodesis agent in cases of spontaneous pneumothorax, air leaks, malignant pleural effusions and

chylothorax in children and adults when injected into the pleural space. The mechanism of action of povidone-iodine appears to be related to chelation of proteins and enhanced sclerosis. Iodine has strong oxidative and cytotoxic properties which induce a potent inflammatory response. In addition the low pH of povidone-iodine may contribute to the local inflammatory response. When used in concentrations of 4% iodopovidone produces pronounced pleural adhesion and thickening mesothelial cell injury. The most significant complication reported is chest pain. Visual loss resulting from the breakdown of the diffusion barrier of the retinal pigment epithelium with concentrations of 10% during thoracoscopic surgery has been reported. Procedure consists of injecting a saline solution diluted 4% povidone-iodine into the pleural space at a dose of 2 ml/kg of weight followed by clamping the chest tube for four hours. Using these low iodine concentrations, neither renal function nor thyroid function is impaired both immediately after the procedure or long term. To further reduce the risk and severity of side effects, 2% povidone–iodine may be used, as it has experimentally been shown that it is as effective as 4% concentration. Multicenter randomized studies that compare the risks and benefit of povidone-iodine should be done before we label this option as the procedure of choice.

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