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Gastrojejunostomy Tube

Gastrojejunostomy tube (GJT) insertion is a common procedure performed to provide postpyloric enteral nutrition in children and adults. GJT is an alternative to gastrostomy tubes when the stomach cannot be fed directly due to history of gastroparesis, gastroesophageal reflux, failed fundoplication, aspiration pneumonia or small capacity stomach (microgastria). GJT are placed via open laparotomy, endoscopic-assisted laparoscopy or fluoroscopic technique after a previous gastrostoma. Open, endoscopic and laparoscopic technique includes the use of intraoperative fluoroscopy. GJT tip placement should be placed distal to the third portion of the duodenum. All cases should have fluoroscopic contrast studies during insertion to demonstrate that no bowel perforation has occurred. Complications associated with the use of GJT include the need for tube replacement, peristomal granulation or leakage, recurrent symptoms of gastroesophageal reflux, intussusception and intestinal perforation. The most frequent reported complications are the need for tube replacement due to mechanical failure from tube fracture or balloon rupture, tube obstruction from clogging or tube displacement from complete removal or distal migration. Almost 75% of children require a return to the operating room for GJT replacement with a mean of two replacements per year. Children weighting less than 6 kilograms or younger than six months of age are at a higher risk of suffering an intestinal perforation with the use of GJT. The complication with the greatest potential morbidity is that related to intestinal perforation which can lead to death. The perforation occurs nears the ligament of Treitz and usually occurs within the first 30 days after insertion. This occurs due to the relative rigidity of the jejunal extension of the GJT which exerts radial pressure on the duodenojejunal junction in the area of the ligament of Treitz where the bowel makes a sharp turn. The smaller the child the smaller the bowel diameter and size. The tip causes pressure necrosis leading to perforation.

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Sutureless Gastroschisis

Gastroschisis is a congenital abdominal wall defect to the right of the umbilical cord resulting in uncovered bowel protruding. The exposed viscera bathing in the amniotic fluid create a serositis with a foreshortened edematous bowel. Gastroschisis is a newborn emergency that should be managed by reducing progressively the exposed abdominal content and closing the abdominal wall defect surgically. Closure depends on the degree of viscer-abdominal disproportion found upon birth, the condition of the bowel and the presence of an associated intestinal atresia. Management can consist of closure using a silo-spring loaded silo where the bowel is housed and progressively reduced over the next few days then followed by fascial closure or primary closure if the defect can be closed initially. The advent of staged closure allowed for a reduction of pulmonary, renal and ischemic complications related to increased intra-abdominal pressure caused by aggressive primary reduction. Sutureless umbilical technique closure refers to the use of remnant umbilical cord as a biological dressing reinforce with a non-adherent synthetic material such as Tegaderm dressing on top. The procedure may be performed bedside in the NICU with minimal sedation. Adhesive dressing are changed over the umbilical cord closure every other day for two weeks and the wound quickly epithelizes during this time. The proposed advantages of this technique include lower total cost, better cosmetic outcome and transfer of the procedure from the operating room to bedside. Sutureless closure of gastroschisis reduces the time to extubation independently of all variables due to the impact of this approach on intraabdominal pressure, the secondary improvement of ventilation mechanics and reduced need for narcotics and sedation. Time to feeding is not altered by either sutureless or surgical closure techniques. Almost all cases of sutureless technique closures develop an umbilical hernia. Most resolve spontaneously and do not require formal repair. Sutureless closure of uncomplicated gastroschisis is a safe technique that reduces need of intubation and provides excellent cosmetic results.

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Fetal Ovarian Torsion

Fetal ovarian cysts are the most common abdominal masses detected with an increased incidence since the advent of prenatal ultrasonography. Fetal ovarian cysts are usually seen toward the end of the second trimester of pregnancy. Stimulation of the fetal ovary by placental and maternal chorionic gonadotropin hormones leads to development of ovarian cysts. Once diagnosed prenatally, ovarian cysts should be monitored carefully since hemorrhage, torsion and rupture with loss of ovarian tissue can ensue. Postnatally the baby should have an US to determine if the cyst is simple or complex. Simple cysts also referred to as follicular cysts are usually unilocular and completely anechoic on US. Most simple cysts below the average size of 4 cm can be observed for spontaneous resolution. Those beyond 4 cm are at risk to develop torsion and should be aspirated either open, percutaneously or laparoscopically. Complex cysts which are more concerning can have echogenic wall, internal septa, fluid-debris level or a blood clot. Most (86%) postnatal hemorrhagic ovarian cysts have sustained torsion. Ovarian torsion occurs from either partial or complete twist of the ovary and fallopian tube. Conservative surgery is recommended in the first days of life if there are US signs of hemorrhage within the cyst during birth or immediately after birth. When torsion of a cyst occurs its size increases rapidly and US features change to complex. Complex cysts will have debris, internal septa or hemorrhage. Color spectral Doppler US can be used to evaluate ovarian vascularity. Unilaterally enlarged ovary with peripheral cysts containing fluid-debris level are highly suspicious for ovarian torsion and hemorrhagic infarction. Absence of blood flow is indicative of torsion. If the US findings are equivocal, an MRI can be performed for further characterization. Most torsion of fetal ovarian cysts occurs prenatally. A calcified abdominal mass, with or without wandering, can be an autoamputated ovary.

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