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Duodenal Duplications

Bowel duplications are congenital anomalies that occur anywhere in the gastrointestinal tract from mouth to anus. Duplications are spherical or tubular in shape, located in or adjacent to the wall of part of the gastrointestinal tract (dorsal or mesenteric side of the native bowel), have smooth muscle in their walls, and are lined by alimentary tract mucosa. Duodenal duplications (DD) comprise 5 to 10% of all bowel duplications. DD usually present with a palpable abdominal mass, obstructive symptoms (vomiting), bleeding (from heterotopic gastric mucosa), perforation or pancreatitis. Most develop symptoms during the first two years of life. DD are usually attached by a common muscularis posteromedial to the duodenum, partly embedded in the pancreas with no communication with the lumen. Diagnosis can be established by the finding of “gut signature” on ultrasound - the hyperechoic inner layer produced by the mucosa surrounded by a hypoechoic outer layer caused by smooth muscle. CT, ERCP and MR-Cholangiography can identify location, size, associated structures and bile ductal anatomy. Management of duodenal duplications depends on the association of this lesion to the native duodenum, pancreas and biliary system. Preop or intraoperative cholangiography should be done whenever the biliary system is involved. Preferred management is complete excision whenever possible, but mucosal stripping or marsupialization are acceptable alternatives.

References:

1- Macpherson RI: Gastrointestinal tract duplications: clinical, pathologic, etiologic, and radiologic considerations. Radiographics 13(5):1063-80, 1993
2- Stern L, Warner BW: Gastrointestinal Duplications. Seminars Pediatr Surg 9(3): 135-140, 2000
3- Lyer CP, Mahour GH: Duplications of the Alimentary Tract in Infants and Children. J Pediatr Surg 30(9): 1267-1270, 1995
4- Siddiqui AM, Shamberger RC, Filler RM, Perez-Atayde AR, Lillehei CW: Enteric Duplications of the Pancreatic Head: Definite Management by Local Resection. J Pediatr Surg 33(7): 1117-1121, 1998
5- Lad RJ, Fitzgerald P, Jacobson K: An unusual cause of recurrent pancreatitis: duodenal duplication cyst. Can J Gastroenterol 14(4):341-5, 2000
6- Stringer MD, Spitz L, Abel R, Kiely E, Drake DP, Agrawal M, Stark Y, Brereton RJ: Management of alimentary tract duplication in children. Br J Surg 82(1):74-8, 1995

Gynecomastia

Gynecomastia refers to abnormal breast enlargement in males. In children, gynecomastia can be classified as simple pubertal, pathological, general obesity and pectoral muscle hypertrophy. Most cases of gynecomastia are simple pubertal associated to a transient or permanent disturbance in steroid hormone physiology occurring when the male breast is exposed to a decreased ratio of androgen to estrogen. Pubertal gynecomastia can be

managed non-operatively since breast enlargement start one year after the onset of puberty and subside two years later. Pathological gynecomastia is associated with drug use (steroids, digitalis, spironolactone, marijuana), chronic liver disease or malignancy (Leydig cell tumor of the testis). General obesity is associated with fat deposition surrounding breast tissue that lends itself to weight reduction. Diagnosis is by history and physical exam. Routine endocrine work-up is not cost effective. Persistent pain, uncertain diagnosis and cosmetic reasons (embarrassment or distress) are the major reasons for operation. Subcutaneous mastectomy through a periareolar incision gives the best cosmetic results. Common late postoperative sequelae are inverted areolae, hypopigmentation and hypoesthesia of the areolar region.

References:

1- Mahoney CP: Adolescent gynecomastia. Differential diagnosis and management. Pediatr Clin North Am 37(6):1389-404, 1990

2- West KW, Rescorla FJ, Scherer LR 3rd, Grosfeld JL: Diagnosis and treatment of symptomatic breast masses in the pediatric population. J Pediatr Surg 30(2):182-6, 1995

3- Park AJ, Lamberty BG: Gynaecomastia: have Webster's lessons been ignored?. J R Coll Surg Edinb 43(2):89-92, 1998

4- Bowers SP, Pearlman NW, McIntyre RC Jr, Finlayson CA, Huerd S: Cost-effective management of gynecomastia. Am J Surg 176(6):638-41, 1998

5- Mellor SG, McCutchan JD: Gynaecomastia and occult Leydig cell tumour of the testis. Br J Urol 63(4):420-2, 1989

6- Persichetti P, Berloco M, Casadei RM, Marangi GF, Di Lella F, Nobili AM: Gynecomastia and the complete circumareolar approach in the surgical management of skin redundancy. Plast Reconstr Surg 107(4):948-54, 2001

Idiopathic Bowel Perforation

Bowel perforation causing pneumoperitoneum during the neonatal period is usually associated with necrotizing enterocolitis (leading cause), atresias, meconium ileus, and Hirschsprung’s disease. Other times they are iatrogenic (misplaced tubes, vigorous resuscitation and drug-related). There is a group of newborns with spontaneous isolated bowel perforation and no evidence of the above disease disorder termed idiopathic bowel perforation (IBP). IBP can occur in the stomach, small, large bowel, and appendix. The perforation is single, small, on the antimesenteric wall, measuring less than one cm with almost minimal surrounding bowel necrosis. A suggested etiologic factor consists of ischemic necrosis secondary to a very localized vascular accident. Diagnosis is made after finding pneumoperitoneum is found in simple abdominal films. After resuscitation, hydration and antibiotherapy, management is surgical. Gastric perforations are sutured and in proximal bowel perforations resection and anastomosis can be done. In distal bowel perforations ganglionic segment should be exteriorized. Hirschsprung’s disease should be excluded by multiple seromuscular frozen section and rectal biopsy. IBP carries a good prognosis with a survival rate above 80%.

References:

1- Bax NM, Pearse RG, Dommering N, Molenaar JC: Perforation of the appendix in the neonatal period. J Pediatr Surg 15(2):200-2, 1980

2- Zamir O, Shapira SC, Udassin R, Peleg O, Arad I, Nissan S: Gastrointestinal perforations in the neonatal period. Am J Perinatol 5(2):131-3, 1988
3- Zamir O, Goldberg M, Udassin R, Peleg O, Nissan S, Eyal F: Idiopathic gastrointestinal perforation in the neonate. J Pediatr Surg 23(4):335-7, 1988
4- Weinberg G, Kleinhaus S, Boley SJ: Idiopathic intestinal perforations in the newborn: an increasingly common entity. J Pediatr Surg 24(10):1007-8, 1989
5- St-Vil D, LeBouthillier G, Luks FI, Bensoussan AL, Blanchard H, Youssef S: Neonatal gastrointestinal perforations. J Pediatr Surg 27(10):1340-2, 1992
6- Harms K, Ludtke FE, Lepsien G, Speer CP: Idiopathic intestinal perforations in premature infants without evidence of necrotizing enterocolitis. Eur J Pediatr Surg 5(1):30-3, 1995

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