PEDIATRIC SURGERY *Update* ©
Vol. 43 No. 02 AUGUST 2014

Ileocecal Duplication Cyst

Congenital duplications of the gastrointestinal tract are rare and usually detected in the first two years of life or prenatally. The clinical presentation depends on location, size, and presence of ectopic gastric or pancreatic mucosa. Intestinal duplications lead to volvulus, intussusception, bowel obstruction, bleeding or perforation. They can occur anywhere in the GI tract with the ileum, ileocecal and duodenum segment as the most common sites. Most alimentary tract duplications are cystic (80%–90%), with the remainder being tubular. The presence of gastric or pancreatic mucosa can lead to peptic ulceration, perforation, and hemorrhage. Most of the intestinal duplications share a common muscular wall and blood supply with the native bowel, especially those located in the abdomen, where they lie in the mesenteric border. The management of duplication cysts consists of resection of the segment harboring the duplication with anastomosis unless the duplications encompass a long segment of bowel. Ileocecal duplications are more frequently cystic lesions of varying size, share a common blood supply and wall with the ileum for a few centimeters from the valve and compress the cecum. These malformations manifest a clinical picture usually characterized by early presentation, occlusive feature and potentially deadly outcome. In many reports duplications in the ileocecal area have been managed with resection of the ileocecal valve. Removal of the ileocecal valve can lead to bacterial overgrowth, reduced intestinal transit time and impaired absorption with symptoms like diarrhea, malnutrition, and electrolyte imbalance. This has prompted management of ileocecal duplication cysts performing excision of the cyst together with the common wall of the ileum and restoring ileal wall continuity with transverse anterior enterorrhaphy preserving the functional ability of the ileocecal valve.

References:

1- Tong SC, Pitman M, Anupindi SA: Best cases from the AFIP. Ileocecal enteric duplication cyst: radiologic-pathologic correlation. Radiographics. 22(5):1217-22, 2002

2- Haratz-Rubinstein N, Sherer DM: Prenatal sonographic findings of congenital duplication of the cecum. Obstet Gynecol. 101(5 Pt 2):1085-7, 2003

3- Foley PT, Sithasanan N, McEwing R, Lipsett J, Ford WD, Furness M: Enteric duplications presenting as antenatally detected abdominal cysts: is delayed resection appropriate? J Pediatr Surg. 38(12):1810-3, 2003

4- Corroppolo M, Zampieri N, Erculiani E, Cecchetto M, Camoglio FS: Intussusception due to a cecal duplication cyst: a rare cause of acute abdomen. Case report. Pediatr Med Chir. 29(5):273-4, 2007

5- Kashiwagi Y, Suzuki S, Watanabe K, Nishimata S, Kawashima H, Takekuma K, Hoshika A:Sudden unexpected death associated with ileocecal duplication cyst and clinical review. Clin Med Insights Pediatr. 4:25-8, 2010

6- Catalano P, Di Pace MR, Caruso AM, De Grazia E, Cimador M: Ileocecal duplications cysts: Is loss of the valve always necessary? J Pediatr Surg 49: 1049-1051, 2014

Fecal Microbiome Transplant

Fecal microbiome transplant (FMT) also known as stool transplantation is the infusion of human stool, obtained from a healthy donor with no risk factors for transmissible diseases into the gastrointestinal tract of a disease patient. FMT purpose is to normalize the gut flora of the recipient. The human GI microbiota is considered a tissue, not an organ, and is used in FMT to implant in a recipient's GI tract. Routes of instillation for FMT includes retention enemas (most common route), colonoscopy and nasojejunal tubes. Enema administration is effective, cheap, and safe and carries fewer procedural or institutional admission costs. FMT has been used effectively to manage patients with refractory/recurrent pseudomembranous enterocolitis and Clostridium difficile infection with a success rate of 81% following a single infusion and 94% following a second infusion. No significant adverse events were noted other than mild infusion-related diarrhea and discomfort. FMT has also been used successfully in cases of inflammatory bowel disease (ulcerative colitis and Crohn disease) reducing symptoms, reversing disease and stopping medication, though its use is actually reserved for clinical trials. FMT in the management of inflammatory bowel diseases causes that 76% of subjects experience improvement in symptoms and 63% achieve clinical remission. Other conditions that could benefit from FMT include anorexia nervosa, constipation, diabetes mellitus, eosinophilic disorders of the GI tract, food allergies, irritable bowel syndrome, obesity, neurodegenerative and neurodevelopment disorders, and systemic autoimmunity disorders. Treatment may consist of a single dose of FMT or multiple doses depending on the condition and response of the patient during treatment. Common treatment-related symptoms include bloating/flatulence, abdominal pain/cramping, diarrhea, blood in stool, and fatigue. The absence of consensus in regards to volume, route, donor screening, safety measures, and the potential lack of medical supervision in children is still being discussed and studied.

References:

1- Kellermayer R: Prospects and challenges for intestinal microbiome therapy in pediatric gastrointestinal disorders. World J Gastrointest Pathophysiol. 4(4):91-93, 2013

2- Borody TJ, Paramsothy S, Agrawal G: Fecal microbiota transplantation: indications, methods, evidence, and future directions. Curr Gastroenterol Rep. 15(8):337, 2013

3- Kunde S, Pham A, Bonczyk S, Crumb T, Duba M, Conrad H Jr, Cloney D, Kugathasan S: Safety, tolerability, and clinical response after fecal transplantation in children and young adults with ulcerative colitis. J Pediatr Gastroenterol Nutr. 56(6):597-601, 2013

4- Allegretti JR, Hamilton MJ: Restoring the gut microbiome for the treatment of inflammatory bowel diseases. World J Gastroenterol. 20(13):3468-74, 2014

5- Samuel BP, Crumb TL, Duba MM: What Nurses Need to Know About Fecal Microbiota Transplantation: Education, Assessment, and Care for Children and Young Adults. J Pediatr Nurs. Feb 7, 2014

6- Borody TJ, Campbell J: Fecal microbiota transplantation: techniques, applications, and issues. Gastroenterol Clin North Am. 41(4):781-803, 2012

Subcostal Hernias

Subcostal hernia is a very rare entity presenting as an isolated defect or a complex multisystem defect, the exact etiology of which is still unknown. They more probably occur

secondary to traumatic abdominal wall weakness or previous surgery, than congenital. They most commonly appear in the left subcostal region as a small protruding defect of 2 cm. Protrusion through the hernial content includes stomach and/or small/large bowel. There is risk of incarceration due to the small ring of defect. Associated conditions identified in the few case reports include left absent kidney, deformed thoracic cage, cardiac malformations, agenesis of the müllerian ducts & left ovary, and aplasia cutis congenita. The pathogenesis includes failure of the ectoderm to develop adequately in the area of the hernia that may lead to underlying embryologic defects as a result of disrupted inductive interactions between the abdominal wall layers, which occur during normal development The diagnosis can be confirmed with US, MRI or simple physical examination. The hernial defect has a sac. Management is straightforward and consists of surgical closure of the hernia defect using the surrounding rim of open external abdominal fascia. Recurrence is rare and the prognosis is good.

References:

1- Nicksa GA, Christensen EP, Buchmiller TL: A case report of a congenital left subcostal hernia in a neonate. J Pediatr Surg 44: 1653–1655, 2009

2- Monteagudo J, Ruscher KA, Margolis E, Balazero F, Finck CM: Congenital subcostal hernia with unusual contents. J Pediatr Surg 45: 435–437, 2010

3- Sengar M, Manchanda V, Mohta A, Jain V, Das S:Intercostal variant of lumbar hernia in lumbocostovertebral syndrome: our experience with 6 cases. J Pediatr Surg. 46(10):1974-7, 2011

4- Lyngdoh TS, Mahalik S, Naredi B, Samujh R, Khanna S: Lumbocostovertebral syndrome with associated VACTERL anomaly. J Pediatr Surg. 45(9):e15-7, 2010

5- Raghu SR(1), Alladi A, Vepakomma D, Siddappa OS, Tilak P: Embryogenesis and types of subcostal hernia--a rare entity. J Pediatr Surg. 48(3):533-7, 2013

*** Edited by: Humberto Lugo-Vicente, MD, FACS, FAAP**

Professor of Pediatric Surgery, University of Puerto Rico - School of Medicine,
Rio Piedras, Puerto Rico. Director - Pediatric Surgery, San Jorge Childrens Hospital.
Address: P.O. Box 10426, Caparra Heights Station, San Juan, Puerto Rico USA 00922-0426.
Tel (787)-786-3495 Fax (787)-720-6103 E-mail: *titolugo@coqui.net*
Internet: http://home.coqui.net/titolugo

ISSN 1089-7739