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## Chylous Mesenteric Cyst

Chylous mesenteric cysts are rare intraabdominal malformations mostly found in male children before the age of fifteen years. They represent a subclassification of lymphangiomas. Chylous mesenteric cysts are rare variant of mesenteric lesions making up to 9% of all abdominal cysts and approximately 3% of pediatric lymphangiomas. Though sometimes asymptomatic, when chylous cysts obtain a large size they produce symptoms by virtue of size and volume characterized by abdominal pain, increase in abdominal girth, nausea, vomiting, anorexia, diarrhea, constipation, bowel torsion and/or bowel obstruction. They can even rupture and cause chylous peritoneal ascites. Chylous mesenteric cysts arise from the embryonic retroperitoneal lymph sac. Failure to communicate with the lymphatic or venous system, or blockage of the lymphatics as a result of trauma, infection or neoplasm can give rise to a chylous cyst. Collection of chyle in a portion of the mesentery of the small bowel leads to cyst formation with a characteristic milky fluid. The cyst can attain an enormous size without causing significant symptoms. The composition of the fluid includes mostly chylomicrons and lymphocytes. Abdominal ultrasound and CT-Scan are diagnostic of chylous mesenteric cysts. The different surgical approaches used to manage these cysts include marsupialization, sclerotherapy, drainage, enucleation, percutaneous aspiration or excision. By far, the best management of chylous mesenteric cysts is complete surgical excision, which sometimes can include resection of the affected small bowel. Once removed chylous mesenteric cysts rarely recurs maintaining an excellent prognosis. Malignant transformation has been reported in less than 3% of all cases.

**References:**

1- Jain SP: Chylous mesenteric and retroperitoneal cysts of developmental origin amongst Ethiopians: report of four cases. Ethiop Med J. 30(4):233-8, 1992
2- Orobitg FJ, Vazquez L, De Franceschini AB, Ramos-Ruiz E: Mesenteric cyst of lymphatic origin: a radiopathological correlation and case report. P R Health Sci J. 13(3):171-4, 1994
3- Cao X, Wu J, Hong W: [Chylous mesenteric cyst in three children]. Zhongguo Dang Dai Er Ke Za Zhi. 10(3):416-7, 2008
4- Kantarci M, Doganay S, Kurtcan S, Gundogdu C, Oral A, Demir B: The Multi-Detector CT findings of giant abdominal lymphangiectasis mimicking a mesenteric cystic mass in a patient with midgut volvulus. Eurasian J Med. 40(2):94-7, 2008
5- Chen HP, Liu WY, Tang YM, Ma BY, Xu B, Yang G, Wang XJ: Chylous mesenteric cysts in children. Surg Today. 41(3):358-62, 2011
6- Guzman L1, Oppenheimer E, Lugo-Vicente H, Correa M: Chylous jejunal cyst causing volvulus in a child: case report and literature review. Bol Asoc Med P R. 105(1):42-7, 2013

## Patent Processus Vaginalis

Inguinal hernia repair is probably one of the most common procedure performed in children. When a child has a unilateral reducible inguinal hernia, the issue of exploring the contralateral side has brought great debate among surgeons. The presence of a contralateral patent processus vaginalis (PPV) does not means a metachronous inguinal hernia will develop. With the advent of laparoscopy for repair of a unilateral inguinal hernia the issue of finding a contralateral PPV takes relevance. Using laparoscopy during ipsilateral hernia repair an average of 20% of contralateral processus vaginalis are patent. There are two ways to detect a PPV during laparoscopy: transinguinal or transumbilical approach. Transinguinal laparoscopy through the ipsilateral hernia sac during open repair is the much popular approach having a specificity of 99.5% and sensitivity of 99.4%. Transumbilical laparoscopy provides a more direct view on the inspection of the contralateral deep inguinal ring. It uses an additional umbilical incision. Studies suggest the small possibility of development of metachronous inguinal hernia developing following a negative evaluation of a contralateral PPV after using transumbilical laparoscopy. The argument is that the insufflation of the peritoneal cavity can cause the peritoneal veil at the superior aspect of the contralateral PPV to close the orifice in the intersection of the testicular vessels and vas deferens at the deep ring resulting in the false impression of absence of a contralateral PPV. Regardless of the method used to diagnose a contralateral PPV or the possibility or not of developing a contralateral inguinal hernia, most surgeons will perform closure upon diagnosis by laparoscopy. Meta-analysis has found 50% of metachronous hernia develops within one year while 90% do so in five years from the initial surgical procedure. Children at risk for development of a contralateral PPV include those under peritoneal dialysis, ventriculo-peritoneal shunts, ascites or increased intraabdominal pressure.

**References:**

1- Mortellaro VE, Gasior AC, Knott EM, Shah SR, Ostlie DJ, Holcomb GW 3rd, St, Peter SD: Is there an increased risk of complications with laparoscopy looking for a contralateral patent processus vaginalis? J Laparoendosc Adv Surg Tech A. 22(7):710-2, 2012

2- Tam YH, Wong YS, Chan KW, Pang KK, Tsui SY, Mou JW, Sihoe JD, Lee KH: Simple maneuvers to reduce the incidence of false-negative findings for contralateral patent processus vaginalis during laparoscopic hernia repair in children: a comparative study between 2 cohorts. J Pediatr Surg. 48(4):826-9, 2013

3- Zhong H, Wang F: Contralateral metachronous hernia following negative laparoscopic evaluation for contralateral patent processus vaginalis: a meta-analysis. J Laparoendosc Adv Surg Tech A. 24(2):111-6, 2014

4- Shalaby R, Ismail M, Samaha A, Yehya A, Ibrahem R, Gouda S, Helal A, Alsamahy O: Laparoscopic inguinal hernia repair; experience with 874 children. J Pediatr Surg. 49(3):460-4, 2014

5- Centeno-Wolf N, Mircea L, Sanchez O, Genin B, Lironi A, Chardot C, Birraux J, Wildhaber BE: Long-term outcome of children with patent processus vaginalis incidentally diagnosed by laparoscopy. J Pediatr Surg. 50(11):1898-902, 2015

6- Ahmed H, Youssef MK, Salem EA, Fawzi AM, Desoky EA, Eliwa AM, Sakr AM, Shahin AM: Efficacy of laparoscopically assisted high ligation of patent processus vaginalis in children. J Pediatr Urol. 12(1):50-55, 2016

## Meckel Diverticulitis

Meckel's diverticulum is an out pouching true ileum diverticulum occurring in 2% of the

population two feet from the ileocecal valve described as the most common congenital anomaly of the gastrointestinal tract. It occurs in the antimesenteric border of the ileum and can contain two types of ectopic tissue: pancreas or gastric. Meckel's diverticulum can lead to several complications in children such as 1) bleeding, 2) obstruction, and 3) inflammation with gangrene or perforation. Meckel diverticulitis can present with clinical signs suggestive of acute appendicitis such as abdominal pain, distension, tenderness and rebound tenderness. Meckel diverticulitis is more common in adults than children. Inflammation of a Meckel's diverticulum can occur due to the presence of ectopic gastric mucosa with wall ulceration or due to obstruction of the lumen of the diverticulum with vascular involvement. Obstruction can be caused by food, enterolith, foreign body or even parasites. The diverticulum itself may serve as a fulcrum for twisting of the adjacent small bowel with resultant obstruction. During sonography the inflamed Meckel diverticulum can be seen as a tubular hypoechoic structure or a complex mass leading to then wrong diagnosis of appendicitis or intestinal duplication. Routine color Doppler sonography reveals anomalous vessels and signs of inflammation on the wall of the Meckel's diverticulum. Oral contrast CT-Scan findings of an inflamed Meckel include a blind-ending pouch of variable size and mural thickness containing fluid, air, or particulate material with surrounding mesenteric inflammation. The location of the diverticulum can vary between right lower quadrant to the mid abdomen. Laparoscopy is a safe and effective alternative in the management of a complication Meckel diverticulum. Most cases can be managed with simple diverticulectomy without the need for resection and anastomosis.

**References:**

1- Baldisserotto M, Maffazzoni DR, Dora MD: Sonographic findings of Meckel's diverticulitis in children. AJR Am J Roentgenol. 180(2):425-8, 2003

2- Bennett GL, Birnbaum BA, Balthazar EJ: CT of Meckel's diverticulitis in 11 patients. AJR Am J Roentgenol. 182(3):625-9, 2004

3- Hamada T, Tanaka M, Hashimoto Y, Yamauchi M, Shigeoka N, Nakai K, Suenaga K: Contrast-enhanced sonographic findings of gangrenous meckel diverticulitis. J Ultrasound Med. 25(9):1227-31, 2006

4- Huang CC, Lai MW, Hwang FM, Yeh YC, Chen SY, Kong MS, Lai JY, Chen JC, Ming YC: Diverse presentations in pediatric Meckel's diverticulum: a review of 100 cases. Pediatr Neonatol.55(5):369-75, 2014

5- Alemayehu H, Stringel G, Lo IJ, Golden J, Pandya S, McBride W, Muensterer O: Laparoscopy and complicated meckel diverticulum in children. JSLS. 18(3), 2014

6- Park JS, Lim CW, Park T, Cho JM, Seo JH, Youn HS: Suppurative meckel diiverticulum in a 3-year-old girl presenting with periumbilical cellulitis. Pediatr Gastroenterol Hepatol Nutr. 18(1):66-70, 2015

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***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)-999-9450 Fax (787)-720-6103 E-mail: *titolugo@coqui.net***
**Internet: http://home.coqui.net/titolugo**


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