



PEDIATRIC SURGERY Update*

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Eppikajutsuto

The most common congenital lymphatic malformation is lymphangioma or cystic hygroma with an incidence of one in 6000 pregnancies. Multiple dilated cysts of lymphatic fluid due to absence of adequate vein drainage develop in the head and neck region, followed in order of preference with the axilla. Lymphangiomas cause cosmetic and functional complications. Management of lymphatic malformations can include observation, sclerotherapy (using K-432, Bleomycin or Doxycycline), or surgical excision. An oral herbal medicine called Eppikajutsuto (TJ-28) is utilized to reduce and eliminate excessive fluid in patient with inflammatory joint disorders and edema caused by nephritis and nephrotic syndrome. The ephedra herb is the main ingredient in Eppikajutsuto and is known to induce pharmacologic effects beyond its sympathomimetics activities such as anti-inflammatory, anti-anaphylactic, antimicrobial and antihistamine effects. Pseudoephedrine, a component of the ephedra herb, has inhibitory effects on acute inflammation. TJ-28 produces an inhibitory effect on fibroblast proliferation along with inhibition of prostaglandin E2 biosynthesis as anti-inflammatory effect. The main mechanism of action of TJ-28 is by suppressing the activity of vascular endothelial growth factor (VEGF) by inhibiting the synthesis of prostaglandin E2 and cyclooxygenase. Ephedra herbal treatment should not be used in elderly patients or individuals with ischemic heart disease or low appetite because of the risk of tachycardia and hypertension. TJ-28 reduces the accumulation of lymphatic fluid in lymphatic malformations. TJ-28 treatment has led to regression of lymphangiomas in the head, neck, shoulder, retroperitoneum and mediastinum with a response rate above 80% after six months of treatment. TJ-28 can be combined with sclerotherapy and/or surgery. The microcystic or combined variant of the lymphangioma seems to respond better than the macrocystic type-lesions. Difficult located lymphatic lesions can also be managed with TJ-28.

References:

- 1- Hashizume N, Yagi M, Egami H, et al: Clinical Efficacy of Herbal Medicine for Pediatric Lymphatic Malformations: A Pilot Study. *Pediatr Dermatol.* 33(2):191-5, 2016
- 2- Tanaka H, Masumoto K, Aoyama T, et al: Prenatally diagnosed large mediastinal lymphangioma: A case report. *Clin Case Rep* 6: 1880-1884, 2018
- 3- Goto Y, Yamashita M, Kakuta K, et al: A single institution experience of Eppikajutsuto for the treatment of lymphatic malformations in children. *J Pediatr Surg.* 2019 Oct 5. pii: S0022-3468(19)30565-2. doi:10.1016/j.jpedsurg.2019.08.025.
- 4- Shinkai T, Masumoto K, Chiba F, Tanaka N: A large retroperitoneal lymphatic malformation successfully treated with traditional Japanese Kampo medicine in combination with surgery. *Surg Case Rep.* 1:80, 2017

- 5- Wang S, Du J, Liu Y, et al: Clinical analysis of surgical treatment for head and neck lymphatic malformations in children: a series of 128 cases. *Acta Otolaryngol.* 139(8):713-719, 2019
- 6- Ozeki M, Nozawa A, Yasue S: The impact of sirolimus therapy on lesion size, clinical symptoms, and quality of life of patients with lymphatic anomalies. *Orphanet J Rare Dis.* 14(1):141, 2019

Transanal Rectosigmoidectomy for Constipation

Chronic idiopathic constipation is a common and serious problem in children. Children with chronic constipation suffer from abdominal distension, bloating, fullness, and soiling accidents that result in a poor quality of life and delayed social development. Most cases of constipation can be managed with modification of diet and medicines. A few cases will not respond to diet and medical therapy becoming intractable and developing involuntary soiling (encopresis). With severe constipation manual disimpaction and high dose laxatives are the next steps in management. Laxative therapy in chronic severe constipation can also be associated with abdominal distension, vomiting, crampy abdominal pain and bloating. Even with the colon filled with either solid or liquid stools they will not have a bowel movement. For these intractable children with constipation surgery might be an option. Surgery can consist of fecal diversion, transabdominal resection of sigmoid and rectum, antegrade continence enemas using the appendix (appendicostomy), botulinum toxin injections, posterior rectal sphincteric myectomy or stapled transanal rectal resection. All of these procedures have different results not always optimal. Recently, transanal full thickness rectosigmoidectomy with primary coloanal anastomosis has been utilized as surgical management of severe intractable constipation in children with good results. The goal of surgical management is to resect the dilated and hypomotile segment of rectum and colon identified on contrast enema bringing down to the anus a normal caliber bowel. The advantage of the transanal approach is that is a minimal invasive procedure that includes the rectum. Major concern when performing a transanal rectosigmoidectomy is damaging the sphincteric mechanism or reducing the rectal volume and leaving the child with postoperative fecal incontinence or urgency. By preserving the dentate line the ability to differentiate between solid, liquid and gas is preserved. By preserving five cm of the rectum proximal to the pectinate line during the rectosigmoidectomy fecal reservoir is preserved reducing the incidence of postop incontinence and laxative use.

References:

- 1- Levitt MA, Martin CA, Falcone RA Jr, Pena A: Transanal rectosigmoid resection for severe intractable idiopathic constipation. *J Pediatr Surg.* 44(6):1285-90, 2009
- 2- Zhang B, Ding JH, Zhao YJ, et al: Midterm outcome of stapled transanal rectal resection for obstructed defecation syndrome: a single-institution experience in China. *World J Gastroenterol.* 19(38):6472-8, 2013
- 3- De la Torre L, Cogley K, Cabrera-Hernandez MA, Frias-Mantilla JE, Wehrli LA: Transanal proximal rectosigmoidectomy. A new operation for severe chronic idiopathic constipation associated with megarectosigmoid. *J Pediatr Surg.* 54(11):2311-2317, 2019
- 4- De La Torre L, Cogley K, Calisto J, Nace G, Correa C: Primary sigmoidectomy and appendicostomy for chronic idiopathic constipation. *Pediatr Surg Int.* 32(8):767-72, 2016
- 5- Gasior A, Brisighelli G, Diefenbach K, et al: Surgical Management of Functional Constipation: Preliminary Report of a New Approach Using a Laparoscopic Sigmoid Resection Combined with a Malone Appendicostomy. *Eur J Pediatr Surg.* 27(4):336-340, 2017

Transanastomotic Tubes

Intraoperative transanastomotic tubes placement have been an integral part of several procedures in the upper gastrointestinal tract of children. Transanastomotic tubes (TT) have been primarily used during repair of esophageal and duodenal atresia for early feeding purpose, avoidance of prolonged total parenteral nutrition, to avoid a gastrostomy, and in the rare multiple jejunoileal atresia defect as a stent. Silastic (silicone) tubes have been preferred over regular plastic tubes. In esophageal atresia, TT has been associated with shorter duration of parenteral nutrition, less TPN-related complications, shorter time to enteral and full oral feedings along with shorter hospitalization. Due to less TPN feeding when using TT the frequency of cholestasis is reduced. Also, the incidence of catheter related sepsis is reduced as the need for central venous catheterization is reduced in TT children. Studies have also demonstrated no significant increase in complications caused by the inherent tube such as anastomotic leak, stenosis, stricture, need for postoperative esophageal dilatation or increase in the frequency of gastroesophageal reflux. Other studies have suggested that there is a higher incidence of anastomotic stricture when using TT, though they do not discriminate between silastic or regular plastic tubes. In children born with congenital duodenal obstruction, the use of TT has been found to be a safe and effective way to lead to early full pre-anastomotic feedings reducing the duration of parenteral feeding hence reducing cost of management. Since parenteral nutrition requirements are reduced while using TT in duodenal obstruction repair the need for central venous access and concomitant complications is also reduced. Finally, in the setting of multiple jejunoileal atresia the TT act as a stent while performing multiple anastomoses helping position the multiple loops of bowel accurately during the anastomosis and facilitating accurate placement of sutures. It also allows access postoperatively for enteral feeding and radiological contrast studies if needed.

References:

- 1- Alabbad SI, Ryckman J, Puligandla PS, Shaw K, Nguyen LT, Laberge JM: Use of transanastomotic feeding tubes during esophageal atresia repair. *J Pediatr Surg.* 44(5):902-5, 2009
- 2- Fusco JC, Calisto JL, Gaines BA, Malek MM: A large single-institution review of tracheoesophageal fistulae with evaluation of the use of transanastomotic feeding tubes. *J Pediatr Surg.* 53: 118-120, 2018
- 3- Lal DR, Gadepalli SK, Downard CD, et al: Perioperative management and outcomes of esophageal atresia and tracheoesophageal fistula. *J Pediatr Surg.* 52(8):1245-1251, 2017
- 4- Harwood R, Horwood F, Tafilaj V, Craigie RJ: Transanastomotic tubes reduce the cost of nutritional support in neonates with congenital duodenal obstruction. *Pediatr Surg Int.* 35(4):457-461, 2019
- 5- Hall NJ, Drewett M, Wheeler RA, Griffiths DM, Kitteringham LJ, Burge DM: Trans-anastomotic tubes reduce the need for central venous access and parenteral nutrition in infants with congenital duodenal obstruction. *Pediatr Surg Int.* 27(8):851-5, 2011
- 6- Yardley I, Khalil B, Minford J, Morabito A: Multiple jejunoileal atresia and colonic atresia managed by multiple primary anastomosis with a single gastroperineal transanastomotic tube without stomas. *J Pediatr Surg.* 43: E45-46, 2008

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