



# **PEDIATRIC SURGERY Update** ©

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### **Appendicostomy**

Appendicostomy refers to a novel surgical procedure utilized as an antegrade continent enema for the management of fecal incontinence, soiling, colonic dysmotility and intractable slow transit constipation in children and adults. The appendix is brought to the skin, usually through the navel, as a small stomal conduit, to be catheterized on a daily basis or regularly and used for antegrade colonic irrigation washouts achieving socially acceptable fecal continence and cleansing. The appendicostomy procedure can be done open or laparoscopically. The laparoscopy approach has less operative trauma, less pain, better cosmetic results and can be performed as an outpatient procedure. During the procedure a silastic catheter or a Chait button is inserted. Cecal wrap and fixation as antireflux measures have been recommended but they have not eliminated fecal leak or reflux and increase operative time. The most important variables that predict outcome are patient compliance, regular use of the irrigations and patient age. Complications of using the appendix as conduit include painful catheter insertion related to stomal stenosis since many children avoid regular prophylactic catheter insertion. This problem can also be overcome using constantly an indwelling tube or the Chait button. Mucus leak is common during the first 6-8 weeks. The washout regime can cause significant pain due to volume or content (senna). Other less common complications of the appendicostomy include bleeding, granulation tissue, perforation, infection, embarrassment about the catheter and fecal leak. The appendicostomy procedure effectively reduces soiling in more than 80% of children with idiopathic constipation so long as the parents are motivated to perform the antegrade enemas on a daily basis. Abdominal pain common in chronic constipation is significantly reduced in severity and frequency in these patients. In the preschool child the benefits are earlier cleanness before starting school with less incidence of stenosis and leakage.

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## **Fibrous Soft Tissue Tumors**

Fibrous soft tissue tumors (FSTT), also known as fibromatosis or desmoid tumors, refer to a group of non-neoplastic spindle cell proliferations that behave locally aggressively but without a propensity to metastasize. They have an increase propensity for local invasiveness and recurrence. FSTT comprised almost 12% of all soft tissue tumors in infants and children. Mean age of presentation is five years. FSTT are firm circumscribed masses, with a white-tan cut surface, glistening or a whorled appearance. They rarely have evidence of hemorrhage or necrosis. Histologically FSTT appears as proliferation of spindle shaped, well-differentiated fibroblast arranged in fascicle in a background of mature collagen with a few or none typical mitotic figures. Included in this group of FSTT are infantile digital fibromatosis, fibromatosis colli, aggressive fibromatosis, fibrous hamartoma of infancy and others. Management of FSTT encompasses local surgical excision with a recommended surgical margin of 1 cm and excision in depth to include the adjacent normal tissue plane. Though having negative margins at resection is the ideal goal of therapy, this is sometimes difficult to achieve if there is going to be sacrifice of structure or function. Local recurrence has been reported in more than 10% of FSTT due to inadequate primary excision. Recurrence of FSTT has been associated with younger age, incomplete resection and specially when involving digital or extremity lesions. However, even with incomplete excision, FSTT has a low recurrence rate and carries an excellent prognosis. Radiotherapy and/or pharmacologic treatment is reserved for patients with unresectable or progressive disease.

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## **Diaphragmatic Rupture**

Diaphragmatic rupture almost always occurs after a traumatic event, most probably a motor-vehicle accident followed by falls. Blunt trauma accounts for more than 80% of diaphragmatic injuries. More than 50% of cases have an associated injury. Several anatomic factors predisposing to diaphragmatic rupture include a thinner abdominal wall, more horizontal position of the diaphragm, ribs more cartilaginous and elastic rupturing at areas of fixed attachment especially the costal origin which is longer and weaker.

Regardless of the mechanism of injury, the early detection of an occult diaphragmatic rupture usually depends on a high index of suspicion. Isolated diaphragmatic injuries do occur in children more frequently than in adults and diaphragmatic rupture prevails in the left posterolateral side. The right side is protected by the liver. Preoperative chest X-ray and CT Scan are diagnostic of most diaphragmatic ruptures in children. Early management determines the effectiveness of treatment and avoids the consequence of missed injuries. Delayed diagnosis can lead to intestinal obstruction and strangulation of the intestine, sepsis and death. Contributing factor for delay in diagnosis also is the extent of diaphragmatic rupture as well as the site of rupture. Short length of diaphragmatic rupture may not manifest initially but as the extent of rupture increases, more and more intraabdominal viscera will herniate into the thoracic cavity as a result of negative intra-thoracic pressure and create symptoms. Most of the delayed cases are seen in the right side. Diaphragmatic rupture is usually repaired using a laparotomy in the acute setting. With delayed diagnosis surgeons prefer a thoracic approach for repair. Operative strategies should be planned based on the localization, size of the rupture, associated injuries and stability of the patient.

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