Small Bowel Disorders (duodenum, jejunum, and ileum)

The small intestine is a vital organ that is responsible for the digestion and absorption of the food/liquid we ingest. There are three parts to the small intestine – the duodenum which connects to the stomach, the jejunum which is the mid portion, and the ileum which connects to the large intestine (colon). The surface area of the small intestine is huge and on average we have over 20 feet of small intestine! Therefore surgical removal of a portion is possible and performed commonly by General Surgeons. Like most other organ systems, surgical diseases of the small intestine can be categorized as non-cancerous and cancerous.

Non-cancerous conditions of the small intestine include strictures/obstructions, Crohn’s disease, diverticuli (including Meckel’s diverticulum), intussusception, fistulae, perforation, and bleeding.

a. Strictures (narrowing)/Obstructions (blockage) of the small intestine can have several causes such as cancer, inflammation (seen in Crohn’s disease), and adhesions (most common). Anyone who has had abdominal surgery in the past is at risk for developing a partial or complete blockage (obstruction) of the small intestine because of adhesions that form after abdominal surgery. If a blockage fails to resolve with a short course of bowel rest (nothing by mouth) and NGT decompression (a tube placed in the nose that goes into the stomach to suction the contents of the stomach and small intestines) then surgery is required.

b. Crohn’s disease is an autoimmune disorder that can cause inflammation of any part of the gastrointestinal tract from the mouth to the anus. Sometimes it affects the small intestine. Repeated episodes of inflammation lead to strictures (narrowing) and these segments may require removal surgically.

c. Diverticuli are outpouchings that are mainly seen in the large intestine (colon) as a result of chronic constipation but can also occur in the small intestine. Typically no treatment is required. There is a special type of diverticulum called a Meckel’s diverticulum that occurs in the ileum (last part of the small intestine) that can contain tissue inside the pouch that does not belong (typically pancreatic or stomach type tissue). This specific type of diverticulum can cause bleeding and may require surgical removal.

d. Intussusception is another word for telescoping of a loop of bowel into itself. This can spontaneously resolve or become “stuck” and cause an obstruction. This is quite rare in adults, more common in children. Occasionally surgery is required to remove the “telescoped” portion of intestine.

e. Fistulae – a fistula is a connection between two structures that does not normally exist. An example is a connection between the small intestine and the skin called an enterocutaneous fistula (ECF). ECF’s are a difficult problem to deal with and may require surgical intervention if the fistulous communication does not close on its own.

f. Perforation refers to a tear or hole in the wall of the small intestine (or any hollow organ). This can be a life threatening condition and requires immediate surgical intervention to either repair the hole or remove the affected portion(s) of intestine. The perforation can be caused by a variety of things such as cancer, a blockage, a foreign body, penetrating trauma, ulcers, etc.
g. Bleeding can occur anywhere in the body but when it occurs in the small intestine it usually manifests as melena (dark, tarry bowel movements). The causes of bleeding in the small intestine are many but a definitive diagnosis is usually hard to obtain. Surgical treatment is a last resort.

Cancerous conditions include adenocarcinoma, carcinoid tumors, and lymphomas. In general small bowel cancers (all three types just mentioned) are extremely rare.

a. Adenocarcinomas (refers to a cancer of glandular cells) of the small intestine are treated by surgical removal. Unfortunately these are aggressive and usually have spread to other areas by the time patients present with symptoms.

b. Carcinoid tumors are slow growing cancers that produce a hormone called serotonin. When these tumors spread to the liver, patients experience flushing and diarrhea (a.k.a. carcinoid syndrome). The treatment of these tumors is complex (involving surgery and/or chemotherapy) and depends on what stage (how advanced) of cancer patients present with.

c. Lymphomas of the small intestine are very rare but do occur. In general lymphomas are treated with chemo/radio therapy but with an isolated small bowel lymphoma (especially if the lymphoma is causing a blockage/obstruction) the treatment would be to surgically remove the affected portion of intestine.