

Gastrointestinal surgeries

Indications:

- partial or full obstruction: this can be due to a foreign body, a tumor, adhesions from prior surgery, intussusception (bowel telescoping in on itself)
- malfunction of the bowel: for example megacolon in cats, where the large bowel has lost forward contractile motion, or thickening of the bowel interfering with contractility or outflow.
- diagnostic purposes: for example full thickness intestinal biopsies

Included procedures are: gastrotomy, partial gastrectomy, enterotomy (incision into the lumen of the bowel), enterectomy (removing a section of bowel), typhlectomy (removal of the cecum), colostomy (incision into the lumen of the large bowel), colectomy (removal of the large bowel).

Preoperative workup and other diagnostics:

Most of these GI cases are referred either emergently, urgently, or on a scheduled basis, after a work up to further investigate & delineate their disease and the extent of their disease.

- General physical examination prior to anesthesia
- Preoperative laboratory work & imaging:
 - Mostly done prior to referral to the soft tissue surgery service
 - Extent of the workup depends on the history and clinical signs of your pet. But the workup will typically involve bloodwork & other lab analyses as well as imaging – starting with radiographs, and if needed additional imaging such as ultrasonography or CT.

Procedures:

A full abdominal exploratory surgery is performed through a midline incision. During this exploratory surgery, the surgeon will visually assess all abdominal organs and palpate organs as indicated in order to look for any abnormalities.

Gastrotomy: An incision is made into the lumen of the stomach, typically to remove a foreign body in the stomach, or a foreign body ranging from the stomach into the small intestines.

Partial Gastrectomy: a part of the stomach wall is removed. This could be to remove a tumor, or an unhealthy part of the stomach (ulceration, perforation, etc). Depending on the amount of tissue removed, the volume of the stomach is more or less affected. If a larger portion is removed, then providing smaller meals as the stomach adapts is recommended. If this area lies in the pylorus (connection between stomach and intestine), specific feeding recommendations might be made, in addition to medications, as surgery in this location might interfere with food passing through the stomach into the intestines.

Enterotomy: an incision is made into the lumen of the intestine. Typically enterotomy refers to a surgery of the small intestines. The small intestine is the longest portion of the gastrointestinal tract in dogs and cats, and consists of 3 parts: duodenum (first part after

the stomach), jejunum (longest part) and ileum (that connects to the large intestine). This incision could be small (for example a full thickness biopsy), or large (removal of a foreign body). It could involve multiple incisions (several biopsies or a linear foreign body) or a single incision.

Enterectomy: A part of the bowel (typically small intestine) is removed in this procedure, and the ends re-attached (anastomosed). Reasons for removing a section of intestine could be: a tumor, a stricture, diseased/compromised intestinal wall secondary to a foreign body. This is most often performed in the jejunum – not only because it takes up ~80% of the small intestine, but also because it does not have other structures attaching to it, like the duodenum does. Removal of a part of the duodenum is a complex surgery due to the pancreas and the biliary system connecting to it.

Typhlectomy: This refers to removal of the cecum. This is a blind ending structure at the junction of the small intestine (ileum) and large intestine (colon). The most common reason for a typhlectomy is a tumor of the cecum, although foreign bodies, or other lesions can occur. Sometimes the cecum can be removed without compromising/involving the ileum and colon, but more commonly the cecum is removed together with a part of ileum and colon, making the removal an ileocolonic anastomosis. In this surgery, the normal connection between the small and large intestine (with a valve function) is removed making the patient more susceptible to diarrhea or small intestinal issues.

Colotomy: it is rare to have to make an incision into the colon (either for a biopsy or for a foreign body). Most foreign bodies that have made it into the colon will be able to pass w/o surgery. As the amount of bacteria in the colon is higher than in the small intestine or stomach, concerns for contamination and postoperative intestinal surgery site issues are higher for colonic surgery.

Colectomy: Removal of (part) of the colon can be indicated for megacolon (typically in cats) or obstructive lesions (such as tumors). In some cases, the colectomy is partial and the ileocolonic junction can be preserved, but in other cases, the entire abdominal portion of the colon (up to the bone of the pelvic canal) is removed.

Complications:

- Anesthesia: as with any surgical procedure, there are always risks associated with general anesthesia. For otherwise healthy pets, these risks are usually low, but are considered increased in animals with systemic illness, such as intestinal obstructions – especially for chronic obstructions or if there is perforation of the intestine (with spillage of intestinal contents into the abdomen).
- Surgical site complications: this can range from a local dehiscence, to a fluid pocket (seroma) that will resolve on its own, or can be a local abscess that might need to be treated surgically.



- Intestinal dehiscence: This is a major complication, and the risk is increase if the intestinal wall is unhealthy or with very sick animals, with contents of the GI tract spilling in the abdomen. A second surgery is needed to revise any areas of leakage. Your surgeon will discuss these complications in more detail during your pet's visit.

In hospital care:

- Hospitalization and intravenous fluids are typically needed postoperatively to recover from surgery. Depending on the extent of surgery, duration of the disease/clinical signs, and other co-morbidities, this stay can be only the first night after surgery, or can be several days, until your pet is healthy enough to continue care at home.
- If there was a perforation, or if there is concern for bowel health, a drain (tube) might be placed in your pet's belly, allowing us to monitor how their belly is healing. We will remove this drain before your pet goes home with you.
- In some cases a feeding tube might be placed, either in the esophagus, or directly in the stomach. These might be left in place for continued at home feeding, and if so, specific care and feeding instructions will be provided for you.

At home care:

- Exercise restriction: leash walks/exercise restriction for the first 10-14 days after surgery to allow all the incisions to heal.
- Incision care: this includes keeping the incision dry and clean, as well as wearing an E-collar as long as the incision is still healing (first 10-14 days postoperatively).
- Concerns for intestinal dehiscence: other than monitoring for signs, such as lethargy, inappetence, fever, no specific care can be instituted to minimize the risk for dehiscence.
- Feeding tube care: see separate information sheet.

Prognosis:

Depends on the reason for the surgery, and the extent of surgery.