Surgery of the Intestines
Definitions

- **Enterotony**: gain access to the lumen of the small bowel to remove a foreign body or help define a disease by acquiring a full thickness biopsy.

- **Enterectomy**: intestinal resection and anastomosis after removing bowel necrosis.
Indications

Indications for enterotony:
1. Remove intestinal foreign body.
2. A full thickness biopsy.

Indications for enterectomy:
1. Diseases causing bowel necrosis: (e.g. foreign bodies [Ingested foreign body, dried feces, indigested food like a piece of bone, heavy parasite infestation], trauma, volvulus [an axial rotation of portion of intestine], strangulation [part of intestine loop slips through an opening]).
2. Neoplasia.
3. Intussusception. (Invagination of a portion of intestine into the part that follows or precedes).
4. Severe, focal infiltrative bowel disease (e.g. phycomycosis, pythiosis, zygomycosis).
5. Congenital obstruction: (e.g. atresia).
6. Ulcers.
Rapid absorption and systemic distribution of toxins and bacteria

Leakage of intraluminal contents resulting in peritonitis

Blood loss— intra- and extraluminal

Loss of intestinal

• Impaired venous return
• Arterial transport of blood
• Edema, anoxia, sequestration of blood
• Necrosis
• Changes in bacterial flora and massive
Anatomy

- *S.I.* extend from the pylorus to the cecum and occupies the ventro-caudal part of abdomen. Its length about 3.5 times of the length of the body.

- The major portion of the S.I. is jejenum, which is a very mobile structure.

- The tunica of S.I includes the mucosa, submucosa, muscularis and serosa.
Blood supply

- Blood supply of small intestine from the *cranial mesenteric A*., which is apart of Aorta
- The cranial mesentric A. devides into 15-20 intestinal branches.
Surgical technique

**Not:**

- must perform within 12 hr. of diagnosis. within this time fluid, acid base and electrolytes abnormalities should be correct.
- Prophylactic antibiotics administered preoperatively are indicated in small bowel surgery.
Enterotomy technique

- Make midline abdominal incision.
- Isolate the segment of bowel to entered with moisture laparotomy sponges.
- Place a 3/0 stay of both ends of the preposed enterotomy incision.
- Milk bowel contents away from the preposed enterotomy site.
- Place non-crushing intestinal forceps (or an assistant’s finger) across the bowel to minimized spillage.
- Make a full thickness stab incision into the lumen enlarge the incision with scisores.
- Perform the enterotomy over healthy bowel distal to the foreign body.
- Close the enterotomy incision with 3/0 or 4/0 synthetic absorbable suture material or mono filament non-absorbable suture material.
- Appositional suture pattern is preferred.
- Rinse the enterotomy site thoroughly with warm saline.
- Use omentum or jejunal onlay patch to reinforce the suture line even in relatively healthy tissue.
- perform ruotine abdominal closure.
Enterectomy technique

- Make midline abdominal incision long enough to accommodate a thorough abdominal exploratory procedure.
- Isolate the affected bowel segment with saline-moistured laparotomy sponges.
- Isolate and ligate the mesenteric vessels to the affected area.
- Place crushing clamp across the bowel at a 60 degree angle to the long axis of the bowel.
- Milk the ingesta away from the crushing clampsplace a non-crushing clamp across the viable segments of bowel to be anastomosed or have an assistant gently hold the bowel segments during the anastomosis.
• Excise the diseased bowel by between the crushing clamp and arcadia vessel ligation.
• Suture by 3/0 or 4/0, all knots are extra luminal
• Carefully place the first suture at the mesenteric border. The second suture apposes the antimesentric border. Place sutures approximately 2-3 mm apart along the “near” side of the anastomosis. Include the entire thickness of the bowel.
• Appose the “far” side or back wall similarly
• Gently flush warm sterile saline over the anastomotic site and adjacent lengths of bowel.
• Wrap a piece of omentum around the line of anastomosis and gently tack it to the bowel above and below the anastomosis.
• Close the defect in the mesentery with a continuous suture.
Post-operative considerations

- The animal should be monitored closely for vomiting during recovery.
- Analgesics should be provided as need.
- Hydration should be maintained with IV fluids and electrolyte abnormalities should be monitored and correction.
- Small amount of water may be offered 8-12 hr after surgery, if no vomiting occurs small amounts of food maybe offered 12 to 24 hr after surgery, and should be fed a bland, low fat food.
- Antibiotic should be discontinued within 2 to 6 hr of surgery unless peritonitis is present.
- After intestinal surgery clinical signs (depression, high fever, excessive abdominal tenderness, vomiting and or ileus.
Complication

The most complication of intestinal surgery are

- Shock
- Leakage
- Ileus
- Dehiscence
- Peritonitis
- stenosis