# Surgery of the Intestine

**Enterotomy** : 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 remove bowel necrosis.

## Anatomy

- *small intestine* 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 jejunum, which is a very mobile structure.
- *The* tunica of S.I includes the mucosa,submucosa ,mascularis and serosa.

## Blood supply

- Blood supply of small intestine from the cranial mesenteric artery . which is part of Aorta
- The cranial mesentric A. devides into 15- 20 intestinal branches.

## Preoperative Management:

- 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.
- Withhold food from mature animals for 12 to 18 hours and from pediatric patients 4 to 8 hours before induction.

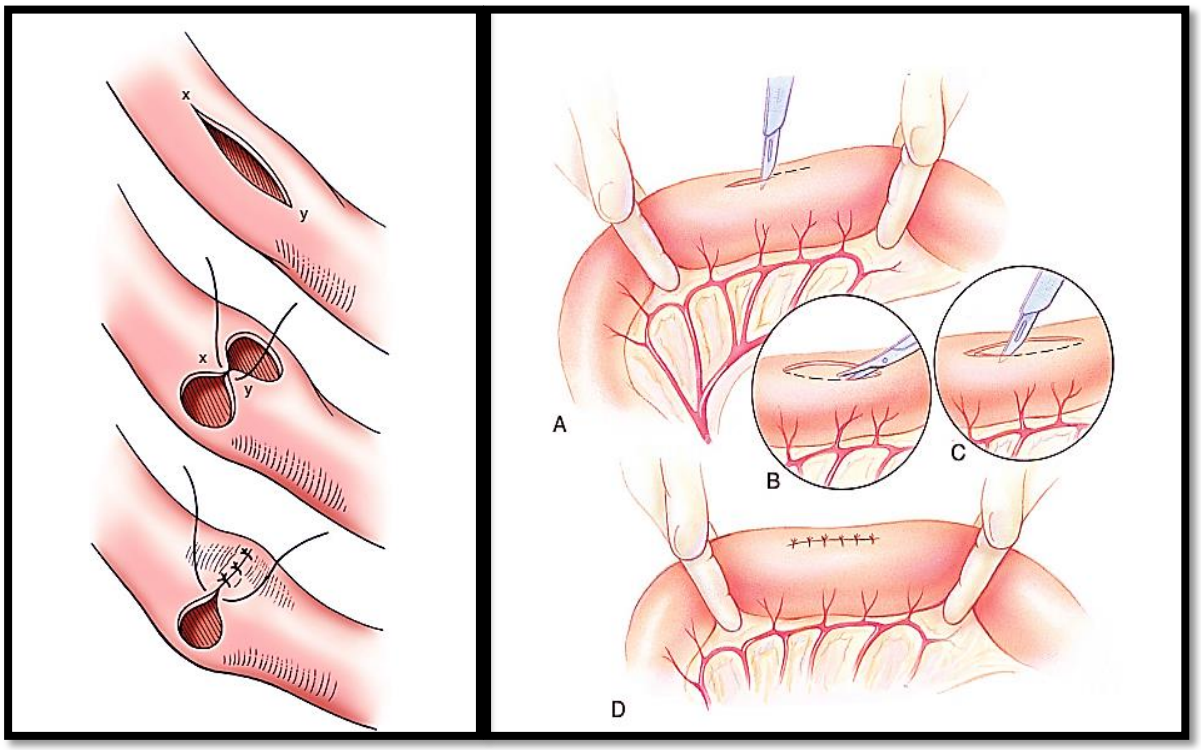
## Indications for enterotomy :

1. Remove intestinal foreign body.
2. Full thickness biopsy.
3. Intestinal Perforation.

## 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(on the antimesenteric border).
- 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.




**Enterotomy incisions may be closed transversely if the intestinal lumen is**

**Enterotomy**

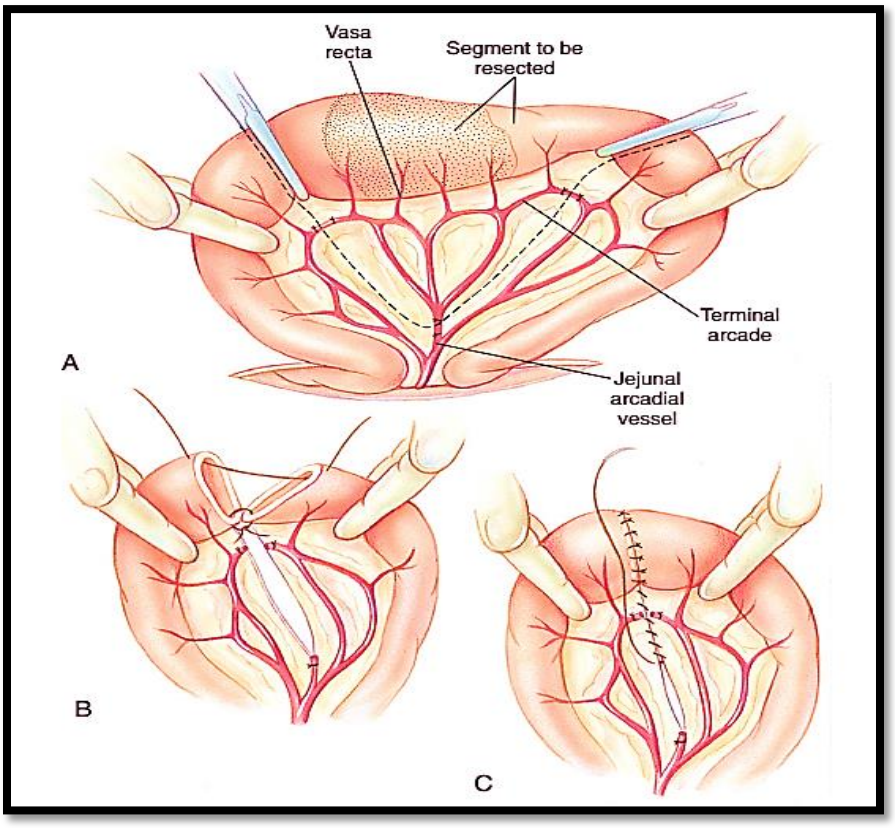
**Enterectomy:**

**Indications for enterectomy :**

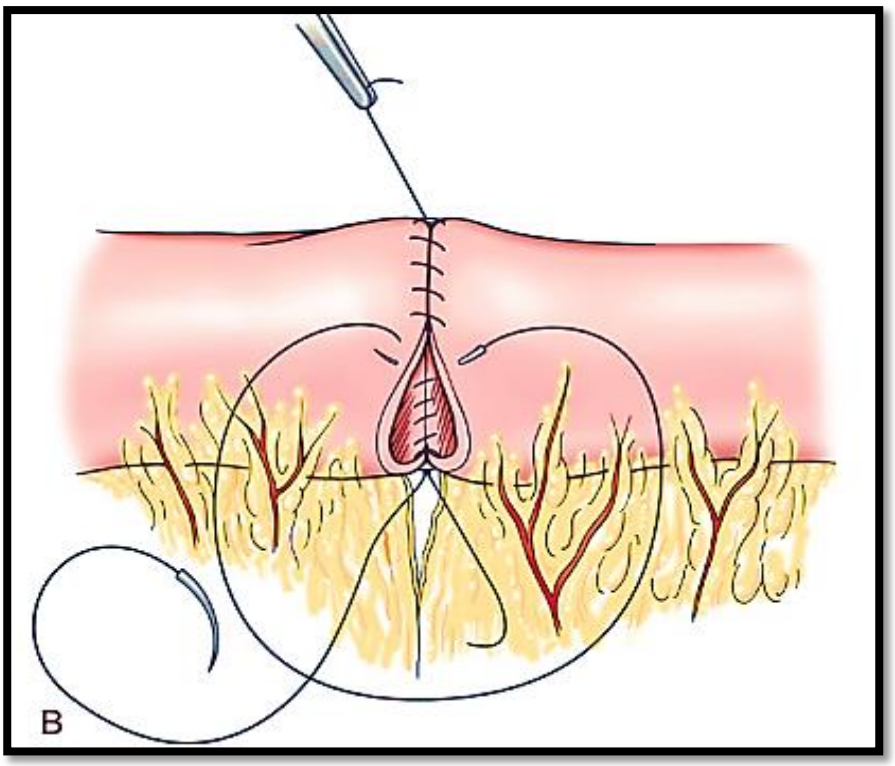
1. Diseases causing bowel necrosis: (e.g. foreign bodies(Ingested foreign body, dried feces, indigested food like a piece of bone, heavy parasite manifestation).
2. Trauma.
3. Volvulus (an axial rotation of portion of intestine).
4. Strangulation (part of intestine loop slips through an opening).
5. Neoplasia.
6. Intussusception.(invagination of a portion of intestine into the part that follows or precedes).
7. Congenital obstruction :(e.g. atresia ).
8. Ulcers.

**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.




**intestinal resection and anastomosis**




**End-to-end anastomosis**

**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:**

1. Leakage.
2. Ileus.
3. Dehiscence.
4. Peritonitis.
5. stenosis
6. Shock and death are possible complications of intestinal surgery.