GI stoma

Done by :

Hala Mahasneh

Batool Dmour

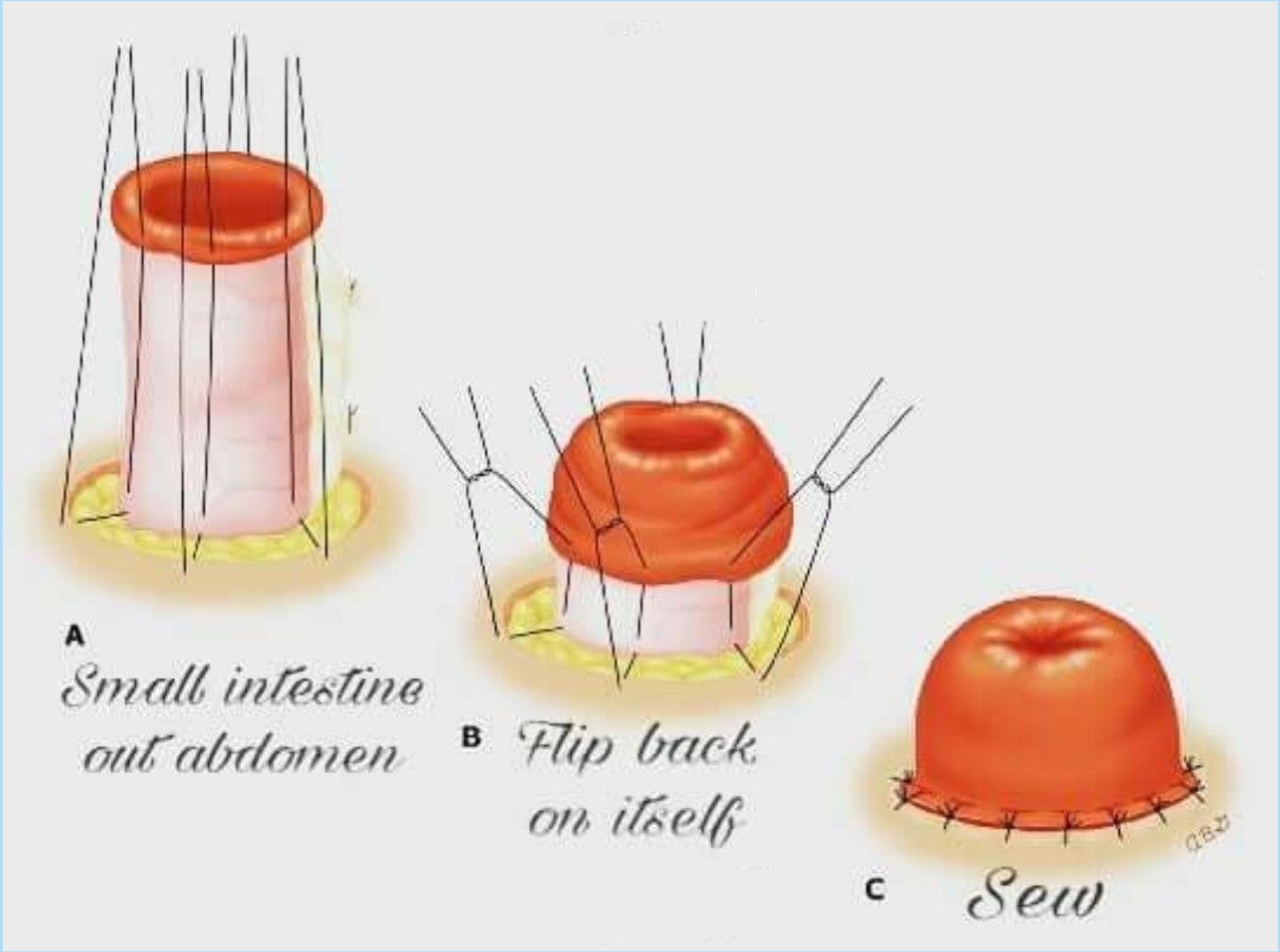
Supervised by :

Dr. Emad Abu-rajouh

Dr. Ahmad Sleihat

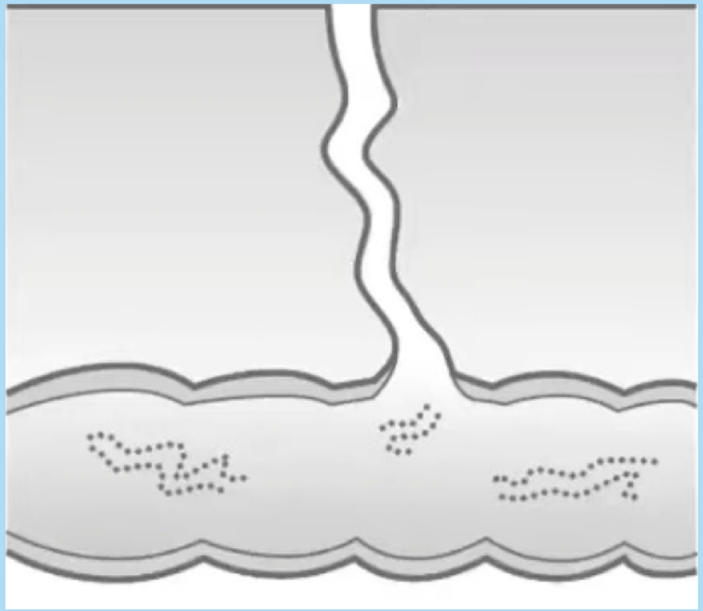
What We Will Talk About

- Definition
- types
- Indications
- Complications
- Uses
- Stoma bags and appliances
- PEG tube
- Summary


A
Small intestine out abdomen
B
Flip back on itself
C
Sew

Definition

- **A surgical opening (from the body surface) into a hollow viscus**
- stoma is an artificial opening made in the colon (or small intestine) to divert faeces and flatus out- side the abdomen where they can be collected in an external appliance. **(Colostomy & ileostomy)**
- a surgical procedure by which a tube is situated in the lumen or the stomach, primarily to administer nutrition(feeding) **(Gastrostomy & jejunostomy)**



types

According to the **Length of time to be used**

- Temporary stoma
- Permanent Stoma

According to the **origin**

- Colostomy
- ileostomy
- Gastrostomy
- Jejunostomy
- Esophagostomy

According to the **Method of construction**

- End stoma : single
- Loop Stoma : two openings connected with the same mucosa (not skin)
- Double Barrel

Indications for stoma

- Inflammatory bowel disease
- Ulcers
- Polyps
- Cancers
  - Coloncarcinoma
  - Rectalcarcinoma
- Disorders of bowel function – Hurschprung’s disease
- Accidental injury
- Congenital deformities of anus and rectum

Common indications for intestinal stomas were abdominal penetrating trauma, enteric perforation, intestinal obstruction and intestinal tuberculosis.

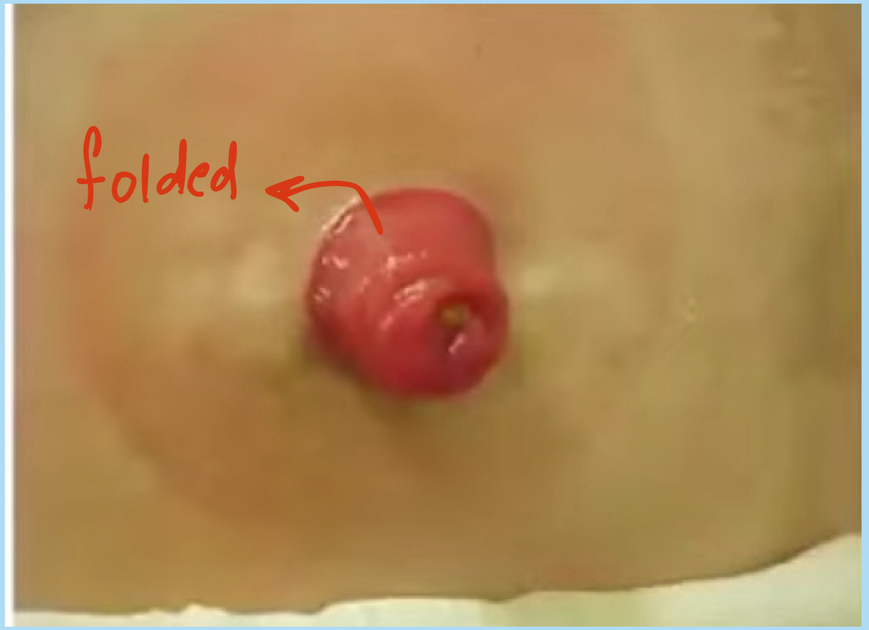
Indications for stoma as processes

1. **Diversion of Bowel:**
   - Defunction a distal anastomosis
   - Previously contaminated bowel
2. **Exteriorisation of Bowel :**
   - perforated or contaminated bowel, e.g. distal abscesses/fistula
   - permanent stoma, e.g. APER.
   - Feeding, e.g. percutaneous endoscopic gastrostomy (PEG).
   - Lavage
3. **Decompression**
   - cancers : colon cancer , rectum cancer...
   - pyloric stenosis
   - intestinal obstruction

Ileostomy

Definition

- is an spouted artificial opening (usually in RIF) made in the any part of the mid or distal small intestine to divert faeces and flatus out- side the abdomen (fluid Output: continous) where they can be collected in an external appliance.



- The best site is usually through the lateral edge of the rectus sheath, above and medial to the bony prominence
- ileostomies are positioned **spouted** to the skin (no flush , 2-3 cm) because the **enzymes** present in small bowel contents are more alkali and, therefore, more irritating to the skin

Types

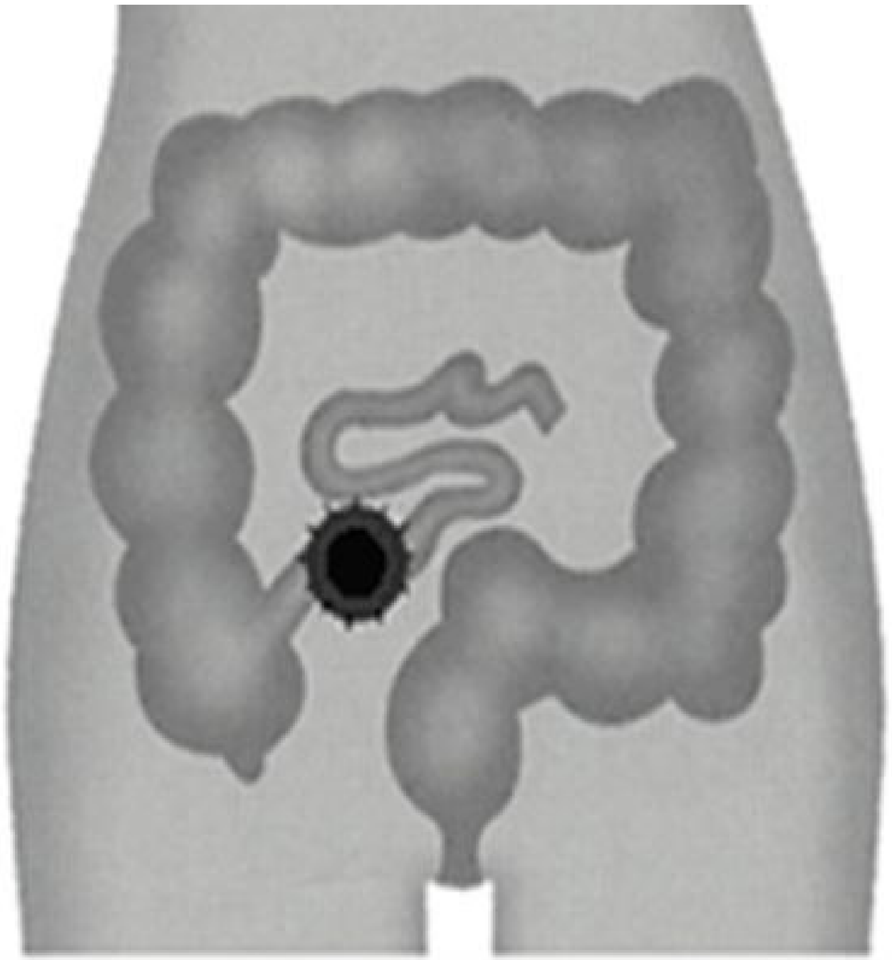
1.Loop ileostomy (Temporary)

- often used for defunctioning a **low rectal anastomosis or an ileal pouch.**
- A knuckle of ileum is pulled out through a skin trephine in the right iliac fossa.
- In these cases, the stoma will have **two openings**, although they'll be close together and you may not be able to see both.
- The advantages of a loop ileostomy over a loop colostomy are the ease with which the bowel can be brought to the surface and the absence of odour.

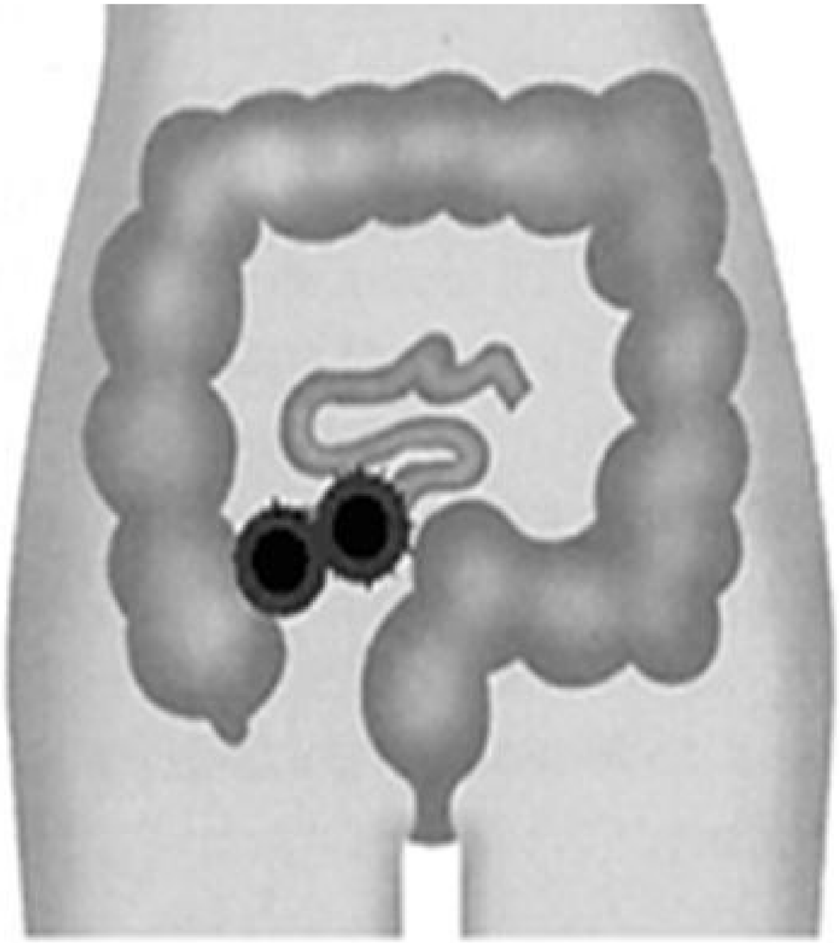
Types

2. End ileostomy (Can be permanent or temporary , but most likely permanent)

- sometimes required **after total proctocolectomy** or in patients with **obstruction** or After a **subtotal colectomy without anastomosis when it may later be reversed**
- The ileum is normally brought through the **rectus abdominis muscle**.
- While ileostomy output can amount to 4 or 5 litres per day, losses of 1–2 litres are more common.
- consistent ileostomy output in excess of 1.5 litres is usually associated with dehydration and sodium depletion in the absence of intravenous therapy.



End Ileostomy



Loop Ileostomy

indications

1.Main indications of Ileostomy were enteric perforation (55.10%), and intestinal tuberculosis (20.40%).

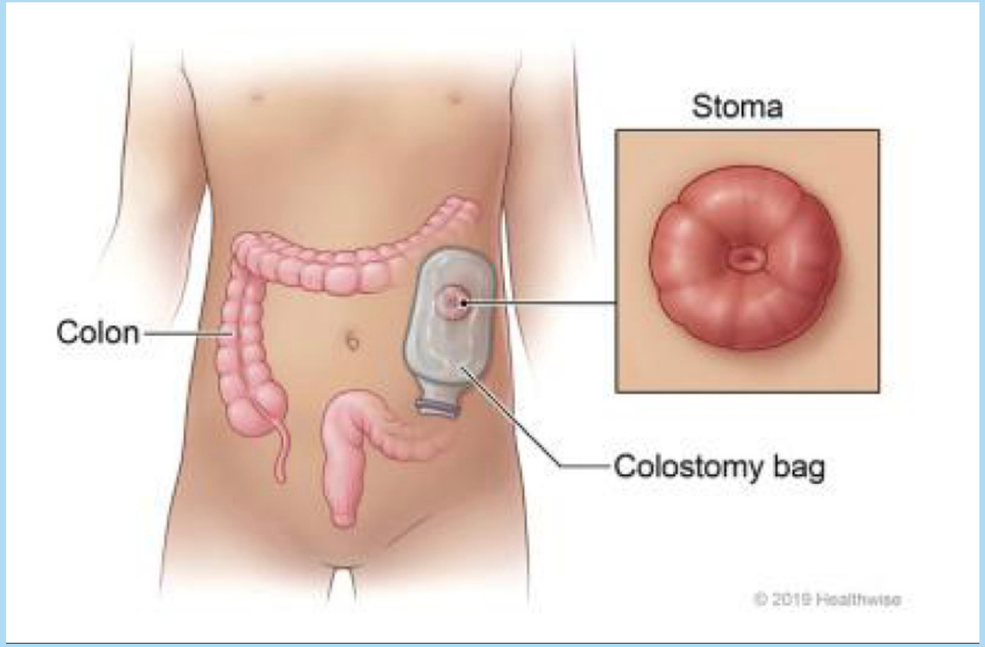
2. To evacuate stool from the body if the entire colon has been removed such as in colorectal cancer, Crohn's disease, ulcerative colitis, and familial adenomatous polyposis.

3. extensive bowel injury, which precludes primary anastomosis like longstanding peritonitis, intestinal obstruction, radiation enteritis, ischemia, inflammatory bowel diseases, tubercular and enteric colitis in the developing world and rectal causes.

Colostomy

Definition

- is an flush artificial opening (usually in LIF) made in the colon to divert faeces and flatus out- side the abdomen (solid or semisold Output: eposidic, not continous, Bad odor) where they can be collected in an external appliance.

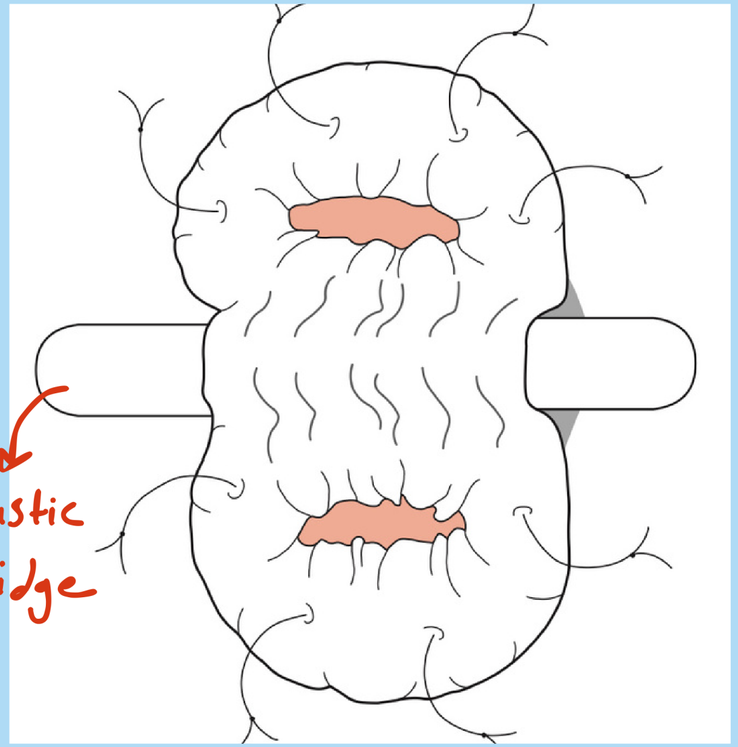


Types

1.Loop colostomy (Temporary)

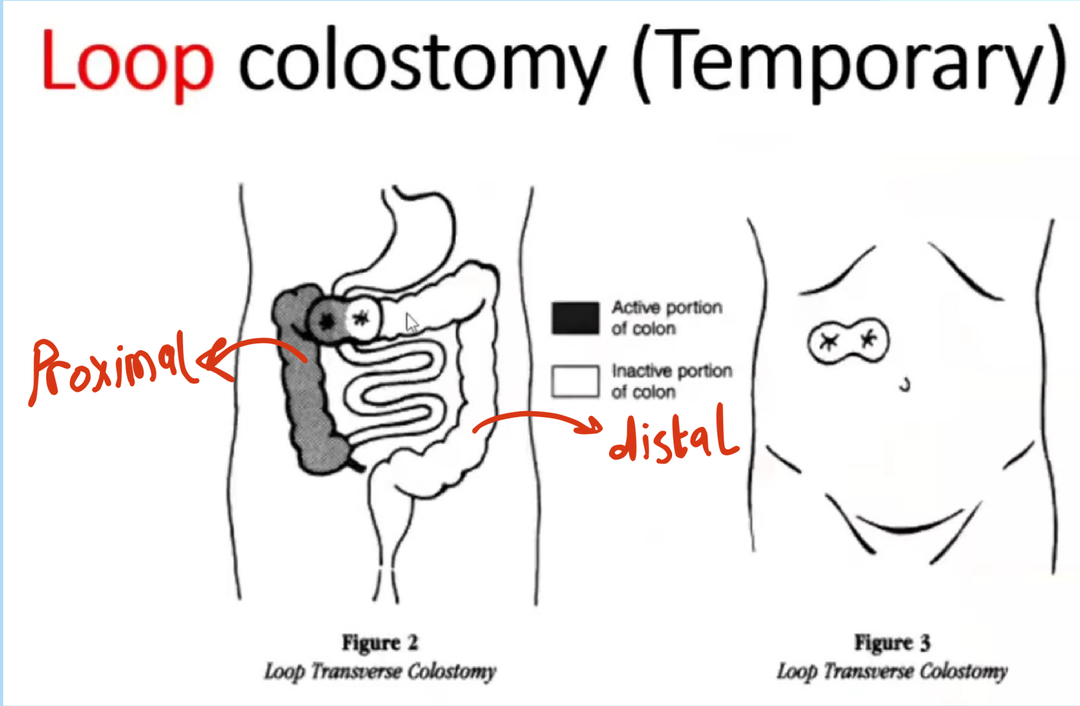
- temporary loop colostomy is made by bringing a mobilised loop of colon to the surface, where it is held in place by a plastic bridge passed through a mesenteric window created just at the junction with the colon. Once the abdomen has been closed, the colostomy is opened, and the edges of the colonic incision are sutured to the adjacent skin margin.

When firm adhesion of the colostomy to the abdominal wall has taken place, the bridge can be removed.



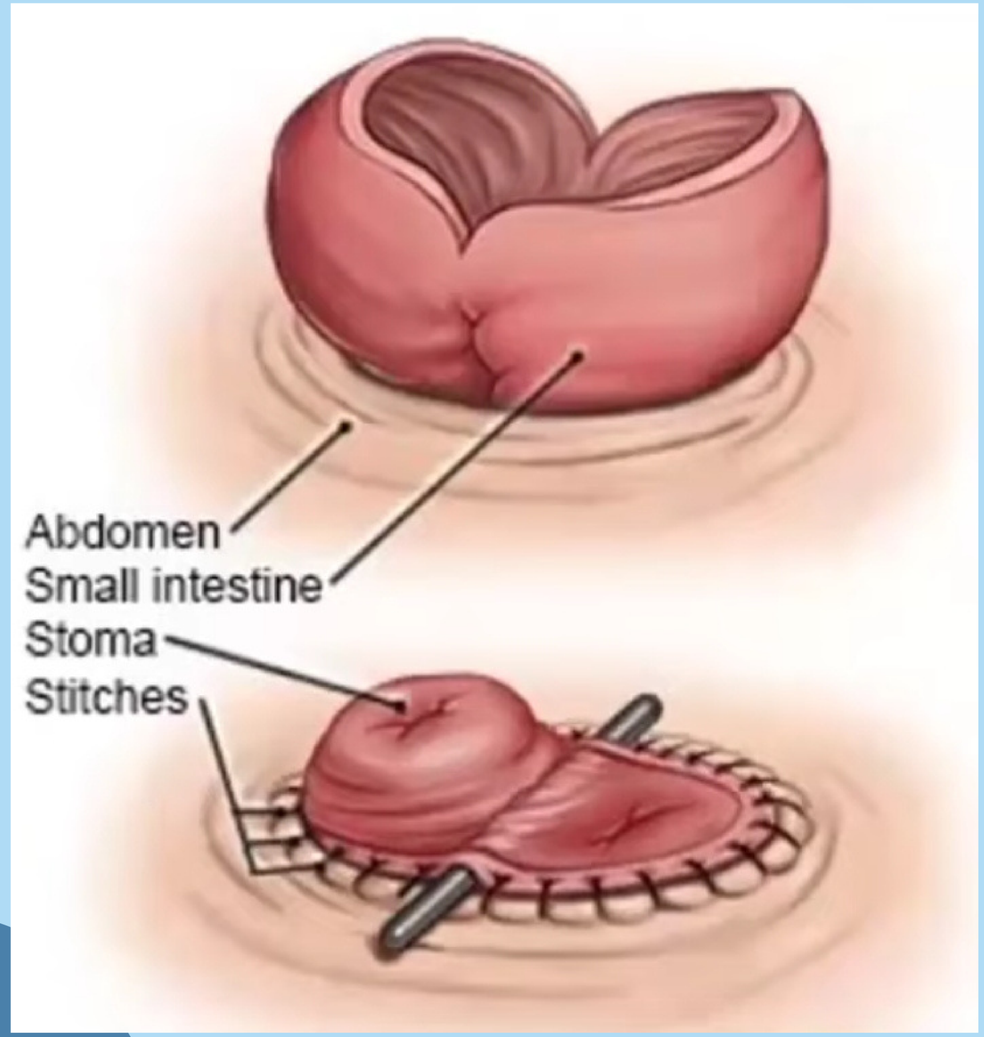
- Following healing of the distal lesion for which the temporary stoma was constructed, the colostomy can be closed.

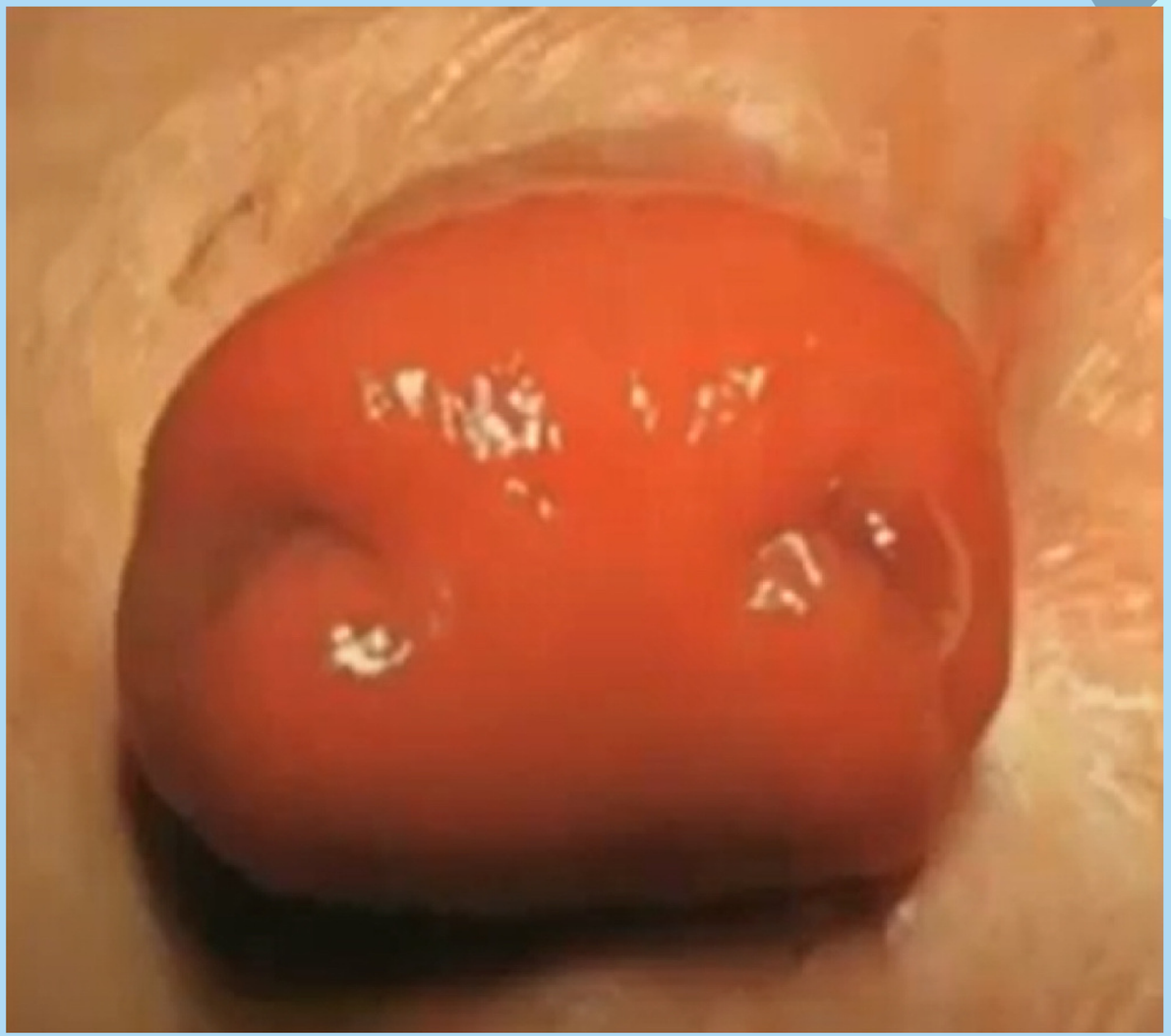
- Colostomy closure is most **easily and safely** accomplished if the stoma is **mature**, typically after the colostomy has been established **for two months .**



- Mostly Done on the **transverse** colon (Temporary) Done in emergencies

- The stoma has 2 openings (Both proximal and Distal ends)

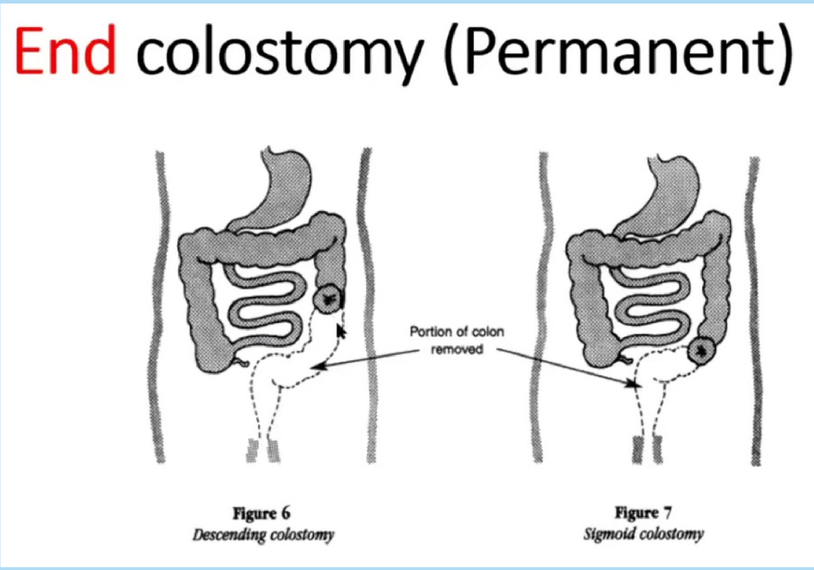

Abdomen
Small intestine
Stoma
Stitches



2. End colostomy (Permanent)

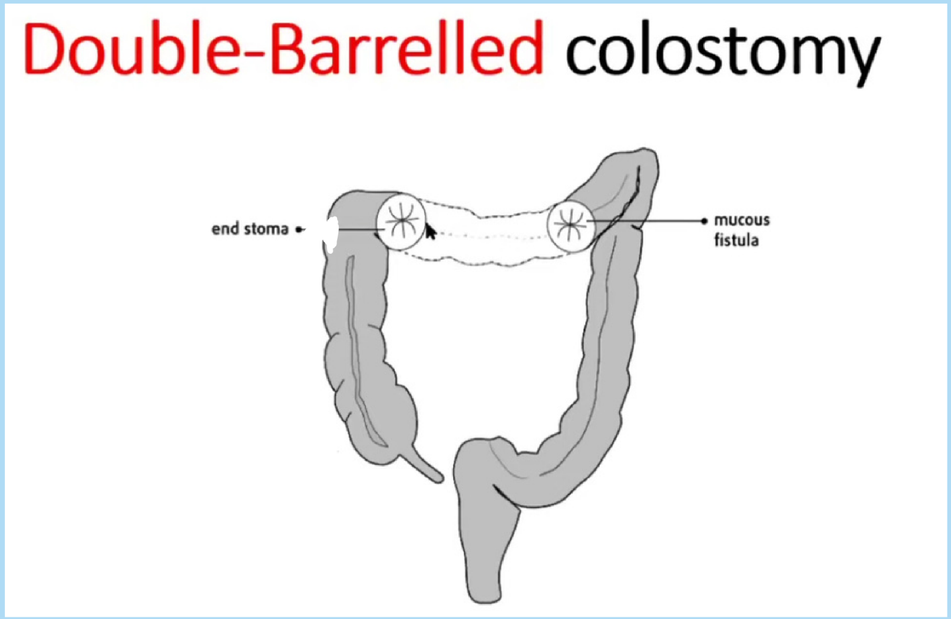
- This is formed after an abdominoperineal excision of the **rectum** or as part of a **Hartmann’s procedure** . The colonic margin is then sutured to the adjoining skin.
- The best site is usually through the lateral edge of the rectus sheath, above and medial to the bony prominence.
- **Single** opening & **More easily** than loop colostomy

Hartmann's procedure is often an emergency operation to remove an obstruction, persistent infection or cancer before it can spread. When a portion of the bowel is removed under these conditions, the remaining portions can't be safely reattached at that time.



3.Double - barrelled colostomy (Temporary)

- The double-barreled colostomy involves the creation of **two separate stomas** on the abdominal wall, by dividing the bowel completely (by skin not mucosa). The **proximal (nearest) stoma is the functional end** which is still connected to the gastrointestinal tract and will therefore drain stool. The **distal stoma is connected to the rectum and is called a mucus fistula** as it drains small amounts of mucus material. This type of surgery is often performed to rest an area of the bowel and may later be closed via further surgery.




a


b

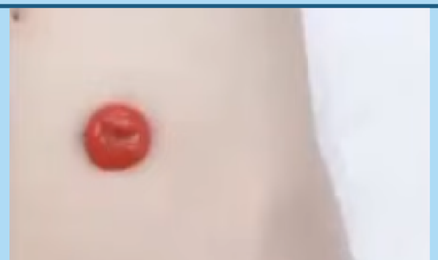
indications

1. Main indications of colostomy were penetrating injuries (50.88%), and intestinal obstruction.
2. Intestinal obstruction with associated inflammation, as in diverticulitis, UC
3. Birth defect, such as a blocked or missing anal opening, called an imperforate anus.
4. colorectal cancer
5. Colostomy is performed in scenarios of large bowel obstruction secondry to benign or malignant cause, perforation with peritonitis, rectovaginal fistulas and perianal sepsis

Stoma bags and appliances

- stoma output is collected in disposable adhesive bags.
- **Ileostomy appliances** tend to be drainable bags, which are left in place for 48 hours, while **colostomy appliances** are simply changed two or three times each day.
- A wide range of such bags is currently available. Many now incorporate an adhesive backing, which can be left in place for several days.

	Ileostomy	*Colostomy*
Site	RIF	LIF
shape	Spouted	Flush
Effluent	Fluid - small bowel	Solid , semi-solid contents - large bowel
output	Continuous (higher)	Episodic (lower)
Appliances	Drainable - every 48 h	Disposable - changed 2-3 times a day
Electrolytes disturbance	More common	Less common
skin irritation	More common	Less common
Bad odor	Less	More



complications

1. bleeding/hemorrhage

- can be defined as either **early** or **late** complications. Its occurrence may depend on surgical factors, comorbidities of the subject, or intrinsic factors of the stomal complex.

2. Ischemia & necrosis

- Most frequently occurs as an **early** complication related to insufficient arterial supply at the stomal site . Ischemia and subsequent necrosis of the stoma, however, **can also occur late** following total prolapse of the ostomy.

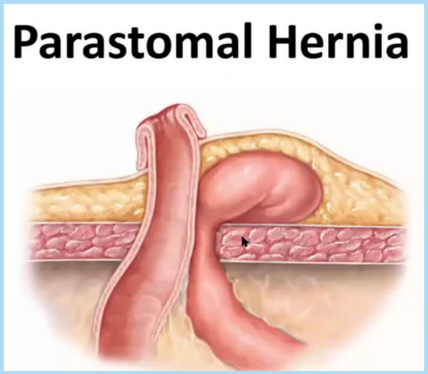
3. Retraction

- It represents one of the most frequent **early** complications. It can be defined the underlying viscera applies inward tension on the stoma such that it carries the surrounding skin with it.

4. Stenosis

- **Late** complication defined by reduction of the stomal lumen at the peristomal skin or muscular fascia

5. Hernia



- **Late** complication defined by dislocation of the stomal loop due to failure of the abdominal wall, which occurs as a result of complete or partial detachment of the aponeurotic fascia.

6. Prolapse

- **Late** complication defined as excessive protrusion of the stomal loop beyond the abdominal skin plane

7. Fistula

- Clinically defined as the formation of a neo-pathway that connects two cavities or one cavity with the outside.

7. Inflammatory pseudopolyps

- These are hyperplastic, fbrino-proliferative formations with a benign character, localized at the level of the mucosa of the ostomy

8. Dehydration ★ **Just in ileostomy**

9. Obstruction ★

may occur intra-abdominally or at the site where the stoma exits the fascia.

Main complications included local skin problems, wound infection and retraction.

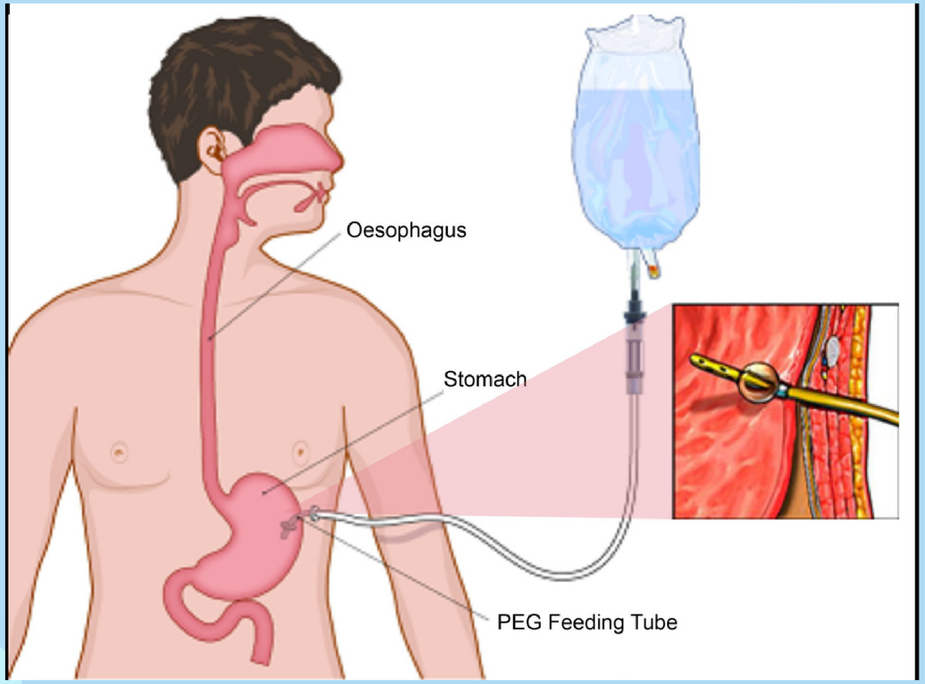
Early: 1. Ischemia 2. Bleeding
3. Retraction 4. Skin irritation

Late: 1. Prolapse 2. Parastromal hernia 3. Recurrent disease
4. Bowel obstruction

Gastrostomy

Definition

- An opening in the stomach made surgically, usually connecting the stomach to the outside of the abdomen so that a feeding tube or gut decompression tube can be passed into the stomach.



indication

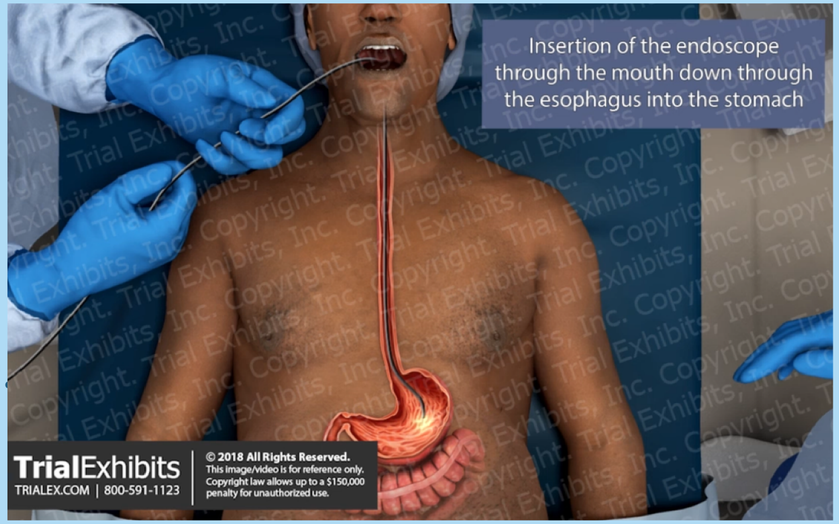
- Neurological swallowing disorders e.g cerebral palsy, multiple sclerosis etc
- Esophageal stricture or atresia
- Esophageal cancer
- Gastric outlet or small bowel obstruction
- Major neck surgeries
- Any condition which requires prolonged tube feeding for > 4weeks.

Types

- Open gastrostomy
- Percutaneous endoscopic gastrostomy(PEG)

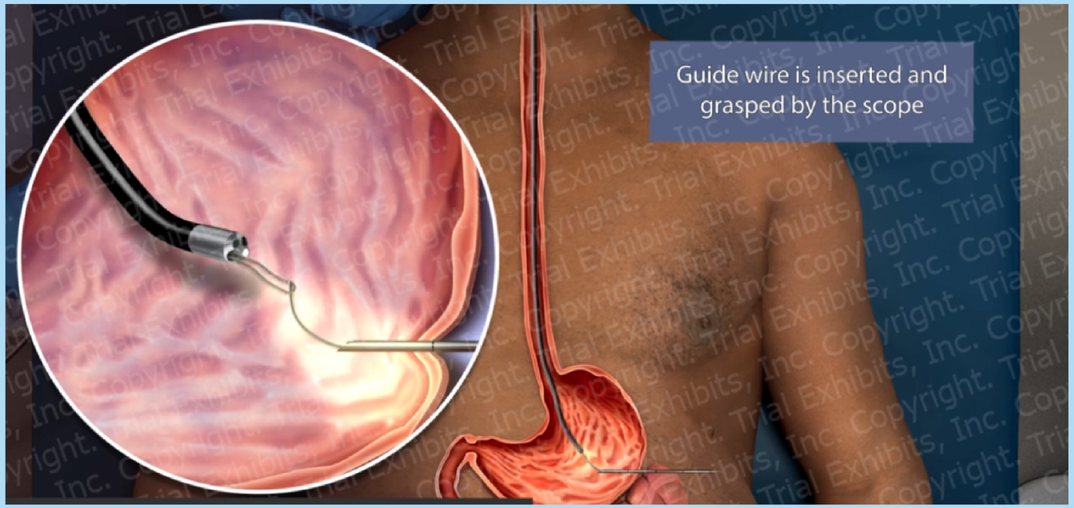
Percutaneous endoscopic gastrostomy(PEG)

- The principle of a sutureless approximation of the stomach to the anterior abdominal wall has allowed the pull technique
- Reduced morbidity and mortality compared to open.
- The fiber optic endoscope is passed into the stomach and directed towards the anterior abdominal wall.

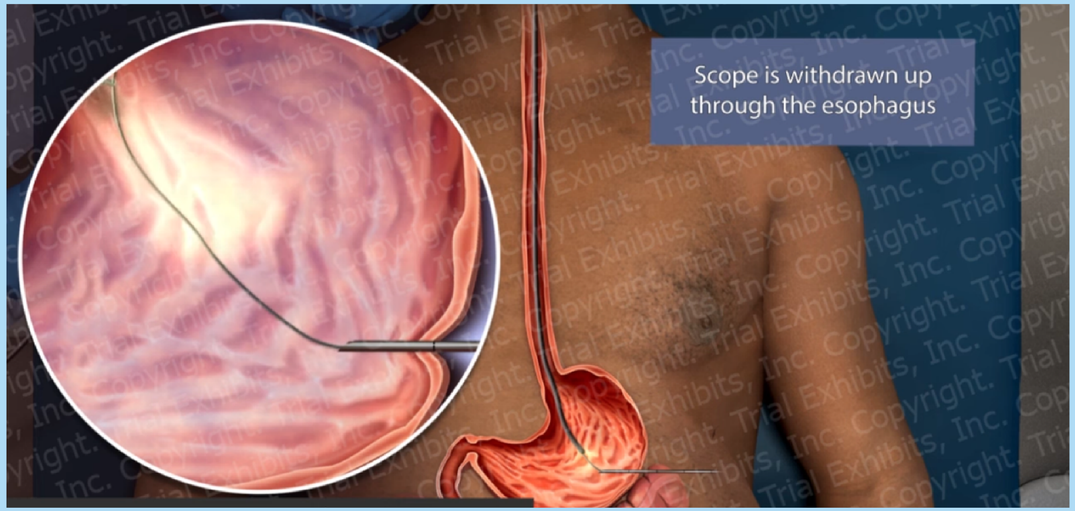


- The second operator identify it by transillumination and guide it to the ideal site of placement of the tube.

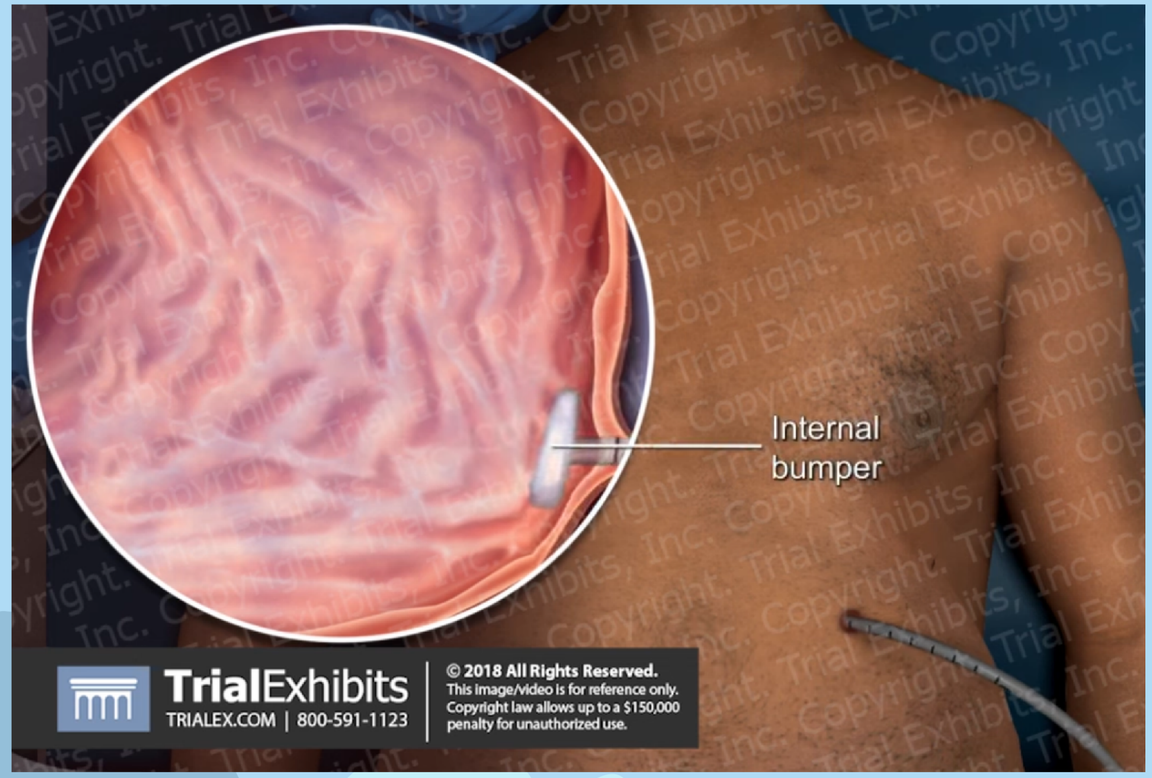
- A cannula is passed by the abdominal operator percutaneously into the stomach, he then pass a thread through the cannula.

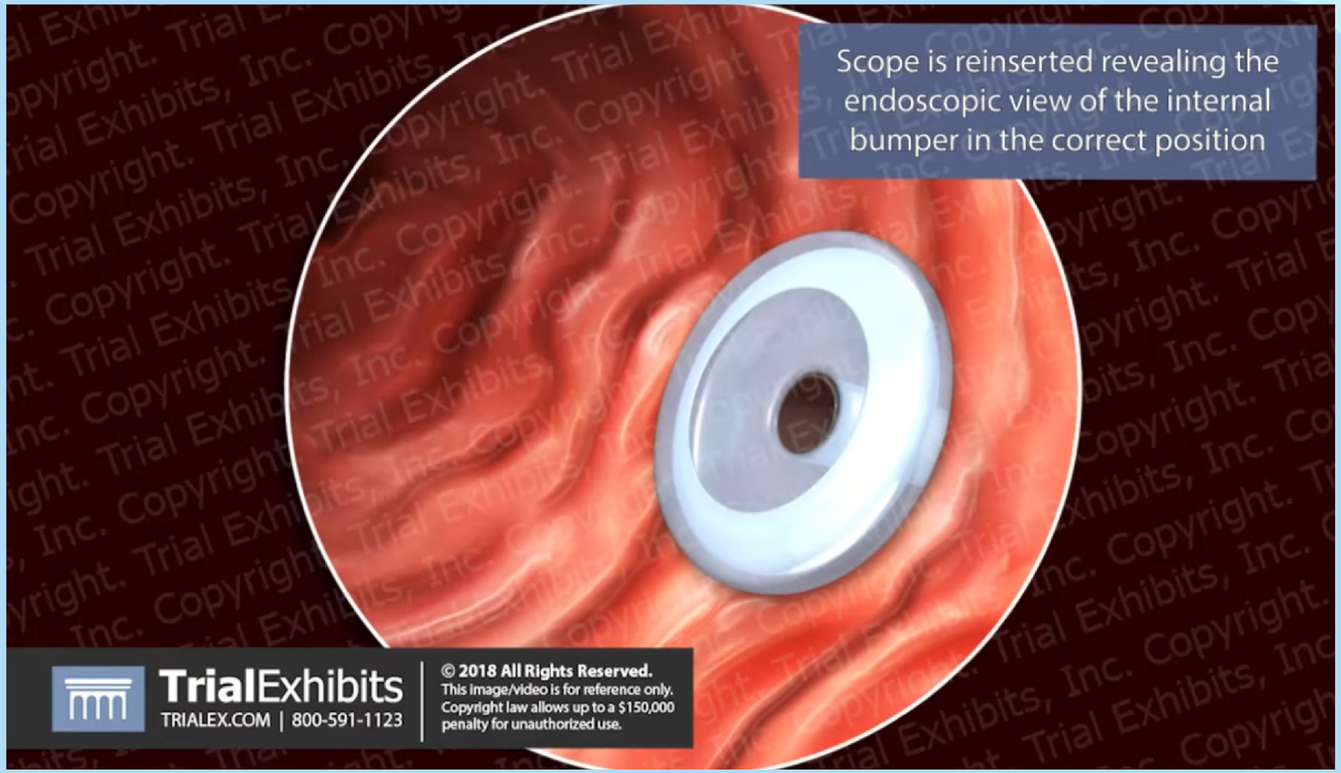


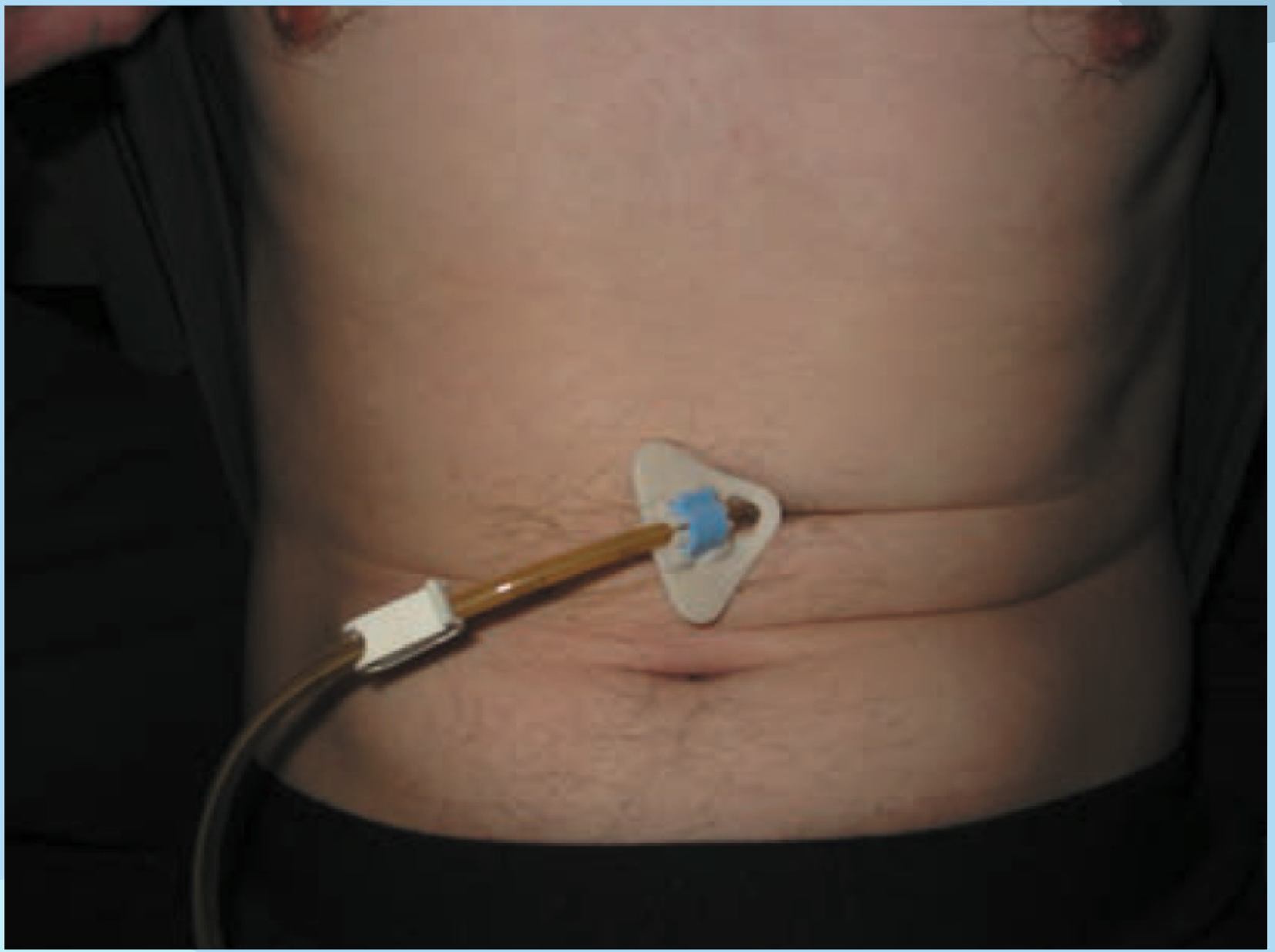
- This thread is grasped under direct vision by the endoscopistusing biopsy forceps and drawn back through the mouth.



- The gastrostomy tube is securely anchored to the thread which is pulled by the abdominal operator delivering it through the mouth, esophagus, stomach and through the anterior abdominal wall.
- The tube secured on the skin with nylon







Complications

- Infection
- Trauma to other structures eg colon
- Hemorrhage
- Leakage
- Blockage
- Aspiration pneumonia
- Displacement of tube

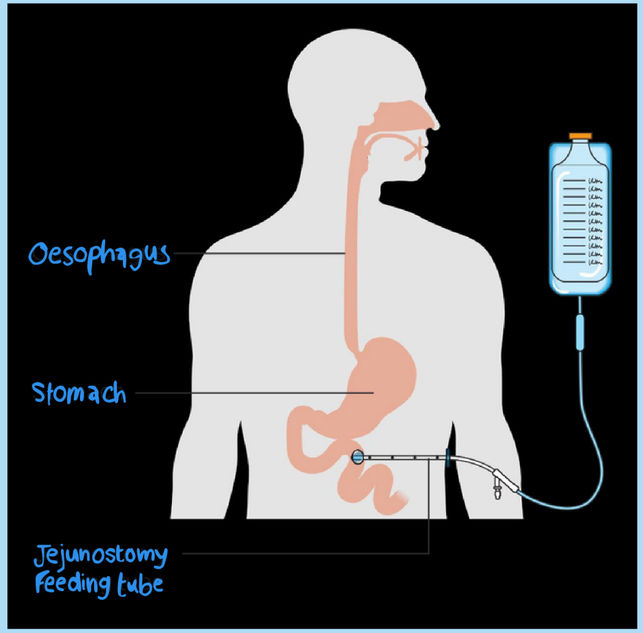
Jejunostomy

Definition

- jejunostomy tube (J-tube) is a soft, plastic tube placed through the skin of the abdomen into the midsection of the small intestine. The tube delivers food and medicine until the person is healthy enough to eat by mouth.

Indication

- Gastric outlet obstruction
- gastric enteral feeding is contraindicated
- Central nervous system disorders
- chronically ill



- There are many techniques used for jejunostomy: longitudinal Witzel, transverse Witzel, open gastrojejunostomy, needle catheter technique, percutaneous endoscopy, and laparoscopy.

steps

- Expose the upper jejunum; laparoscopically or through a small left upper quadrant transverse incision
- Trace the bowel proximally to the duodenojejunal flexure
- Select a loop 10-20 cm distal to this point so that it will easily reach the anterior abdominal wall.
- Insert vicryl purse-string suture on antimesenteric border
- Make a tiny enterotomy in the Centre of purse-string and introduce 9Fr feeding Jejunostomy tube
- Tighten the purse string around the tube
- To exclude the enterotomy from the peritoneal cavity, suture the bowel to the parietal peritoneum at four points around the entry site of tube

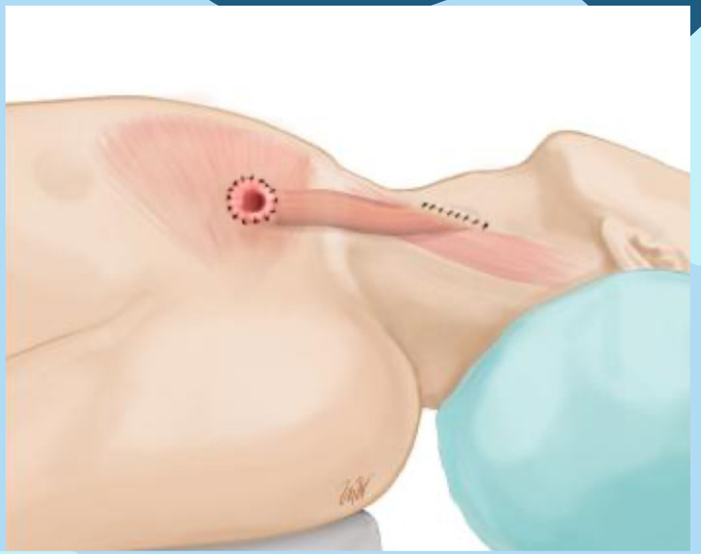
Complications

- minor bleeding from the site
- local infection
- granulation tissue formation
- tube dislocation
- obstruction or migration of the tube
- Intra-abdominal abscess
- enterocutaneous fistulas
- leakage from the catheter
- perforation of the small intestine
- Electrolyte disorders
- Vitamin, mineral and trace element deficiencies

Esophagostomy

Definition

- This procedure can be performed as a temporizing procedure for an esophageal perforation when a primary repair cannot be performed
- Cannot use in excessive vomiting (contraindication)



Indications

- include esophageal perforation in patients too ill to tolerate thoracotomy, detection of esophageal perforation or suture line breakdown at a time too late to permit primary repair, benign or malignant obstruction of the esophagus associated with persistent pneumonitis.

complication

- vomiting
- scratching at the tube and bandage
- patient removal of the tube
- inflammation
- infection at the wound site and mechanical issues

Thank you!