Problems in gastrostomy
- Leak
- Infection
- Aspiration and pneumonia

Contraindications
- Previous gastric surgeries.
- Intestinal obstruction.
- Gastric outlet obstruction.

JEJUNOSTOMY

Jejunostomy for enteral nutrition becoming more popular because of—
- its comfort,
- easy to do,
- can be kept for long time,
- lesser complication than gastrostomy.
- Indications are same as gastrostomy.

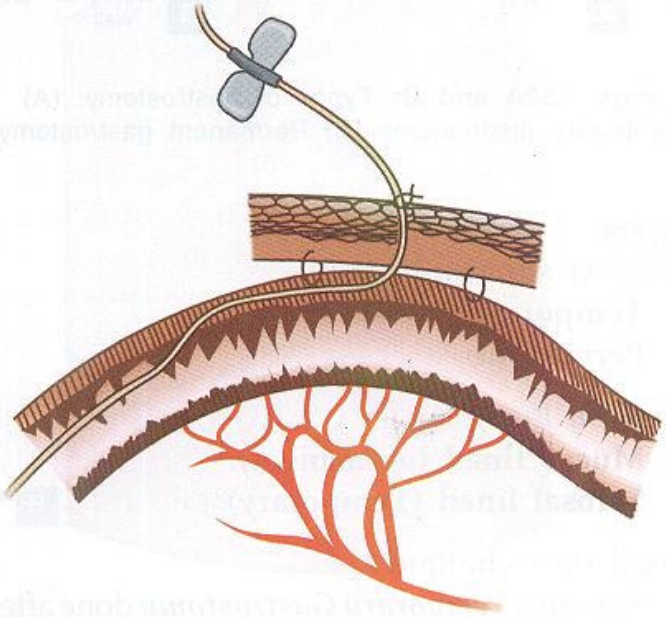
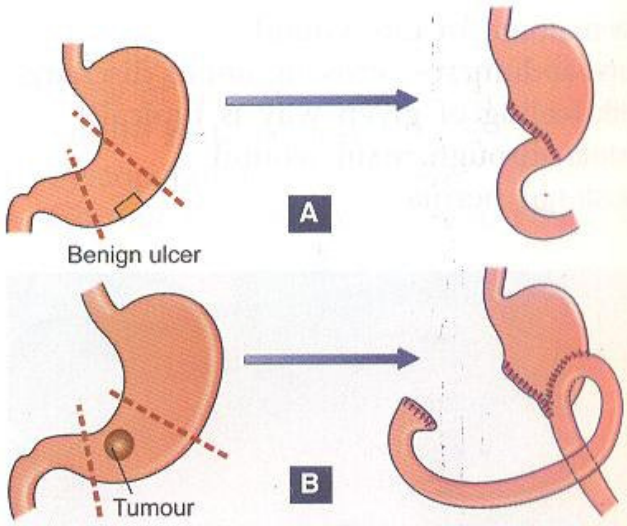


Fig. 7.33: Needle jejunostomy

Types
- **Witzel jejunostomy**: Site of placing jejunostomy is 30 cm from duodenojejunal junction.
- **Needle jejunostomy using** catheter of small gauge.

GASTRECTOMY

Types
1. Billroth I is done for benign condition. Here along with partial gastrectomy, gastroduodenostomy is done.
2. Billroth II is done for carcinoma stomach. After partial gastrectomy, gastrojejunostomy is done and duodenal stump is closed.
3. Lower radical gastrectomy is done in early carcinoma pylorus. Here along with the growth and proximal 5 cm of stomach, omentum, lymph nodes, spleen with tail of pancreas is removed and Billroth II anastomosis is done.
4. In growth of upper part or O-G junction, upper radical gastrectomy is done along with oesophago-gastric anastomosis.
5. In some cases like linitis plastica, total gastrectomy along with oesophago jejunal anastomosis is done.

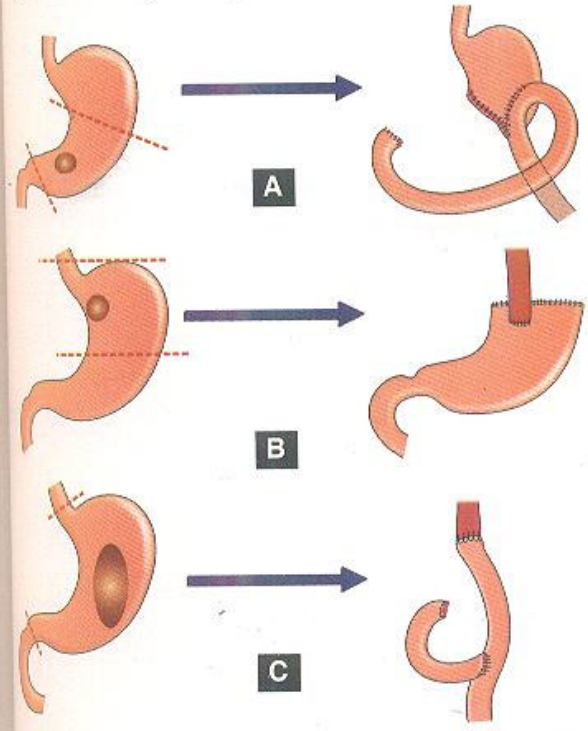


Figs 7.34A and B: Types of anastomosis after gastrectomy. (a) Billroth I anastomosis (b) Billroth II anastomosis.

Indications
- Chronic benign gastric ulcer.
- Benign tumors of stomach (Leiomyoma).
- Carcinoma stomach.
- Stomal ulcer.
- Bleeding ulcer.

cedure

domen is opened through upper midline sion. Tumour is felt and explored. Liver, ntum, tumor fixity, rectovesical pouch, nodes esocolon are looked for. Omentum is mobi- and detached from colon. Kocherisation one by mobilising second part of the denum. Right gastric artery is ligated. Left roepiploic artery is also ligated. Care should ken not to injure middle colic artery. Stomach vided using linear cutter stapler at duodenal mp. Alternatively it can be divided using shing clamp at gastric side and occlusion p at duodenal side and duodenal stump losed using 2 zero vicryl sewing machine ures. Stomach is lifted upwards and ending branch of left gastric artery is ligated rely. Large occlusion clamp is applied and mach is divided after applying crushing clamp he tumor side. New lesser curve is created n with a valve using vicryl single layer sutures. oth II or any of its modification type of rojejunostomy anastomosis is done. Often junojejunostomy is added to prevent possible denal leak. Corrugated or tube drain is kept right subhepatic pouch for 5 days.



s 7.35A to C: Gastrectomies for carcinoma stomach fferent locations (A) Lower radical gastrectomy (B) er radical gastrectomy (C) Total radical gastrectomy

Complications

- Bleeding.
- Bile leak.
- Duodenal blow out.
- Gastric fistula.
- Dumping syndrome.
- Anaemia.

CHOLECYSTECTOMY (OPEN)

Indications are similar to laparoscopic cholecystectomy.

Preparation is similar like for obstructive jaundice or any other laparotomy. Incision is right subcostal Kocher's incision. Nasogastric tube should be passed. After opening the abdomen, contents are explored. One mop is kept over the stomach and retracted medially; another over the colon and retracted below. One more under surface of the liver margin and retracted above using Deaver's retractor. Gallbladder is held using gallbladder holding or sponge holding forceps and retracted outwards towards the wound. Hartmann's pouch is held with Babcock's forceps (Hartmann's is pathological infundibulum of the gallbladder). Calot's triangle dissected carefully using peanut, scissor and long artery forceps. Cystic duct is identified and dissected carefully. Cystic artery is also identified above that and dissected. Anomalies and variations of cystic duct like low insertion, insertion into right hepatic duct etc are common and should be remembered. Cystic duct is doubly ligated using silk or vicryl suture material. Cystic artery is ligated using silk. Gallbladder is mobilized from liver bed using cautery and suction. Small bleeders in gallbladder bed of the liver are cauterized. Ligated cystic duct is cannulated along with a syringe. Air bubble should not be there in the cannula/needle or syringe (if present it will be mistaken for a radiolucent stone in C ARM or X-ray). Water soluble iodine dye is injected into the CBD through this cannula. Any stone if present in CBD appears as radiolucent area. It indicates that choledochotomy should be done. Other indications are – palpable stone in CBD; dilated

CBD more than 10 mm; recent jaundice; US shows CBD stone or when in doubt.

In difficult gallbladder – fundus first method is used. Fundus is separated from liver bed and dissected towards the Calot's triangle. Carefully cystic duct is dissected and ligated. In difficult situations, mass ligature of cystic duct and cystic artery is also done. *Subtotal cholecystectomy* is done when it is not possible to dissect the gallbladder near Hartmann's pouch.

Drain is placed in subhepatic pouch (tube/corrugated). Wound closed in layers.

Complications

- Injury to common bile duct, common hepatic artery, duodenum.
- Biliary fistula.
- Abscess formation–subphrenic/local/pelvic.
- Waltermann Waltmann syndrome–collection of fluid in the subhepatioc pouch/gallbladder bed which is compressing on IVC causing cardiac symptoms.
- Obstructive jaundice.
- Sepsis, septicaemia and its problems.