GASTROINTESTINAL PROCEDURES AND DEVICES

NASOGASTRIC ASPRIATION

- NG aspiration used to remove liquid contents from the stomach and decompress the stomach and small bowel

Table 89-1 Selection of Patients for Nasogastric Aspiration

Clinical Situation	Best Uses	Consider Withholding
GI bleeding with hematemesis	Rapid bleeding (large hematemesis, refractory hemodynamic instability)	Slow or mild bleeding (coffee grounds, blood-streaked emesis)
GI bleeding without hematemesis	Massive rectal bleeding with hemodynamic instability	Clinical picture suggests lower GI source (bright red blood per rectum, age >50 y, blood urea nitrogen/creatinine <30[21]
Small bowel-dilation	Small-bowel obstruction	Ileus

- Adverse effects are many and varied, but no systematic review has been performed to outline frequency of such mishaps

Table 89-2 Complications of Placement of Nasogastric and Nasoenteric Tubes

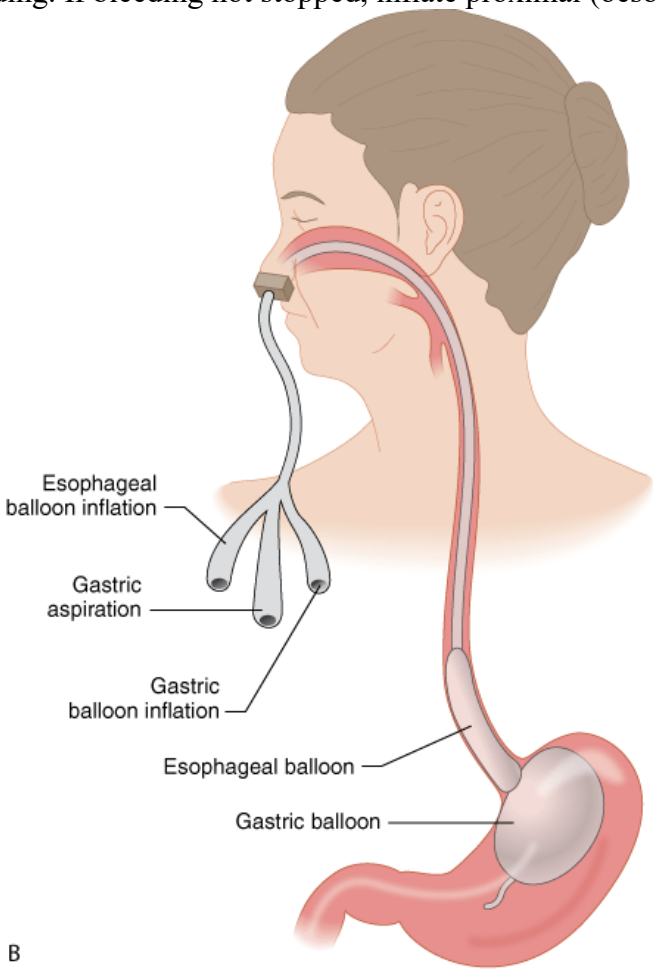
Epistaxis
Intracranial placement
Bronchial placement
Pharyngeal placement
Esophageal obstruction or rupture
Bronchial or alveolar perforation
Pneumothorax
Charcoal instillation into the lungs and pleural cavity
Gastric or duodenal rupture
Vocal cord paralysis
Pneumomediastinum
Laryngeal injuries
Knotting (preventing removal)

- Main morbidity is epistaxis and pain from the procedure
- TECHNIQUE:
    - Optimal position is patient seated upright with the neck slightly flexed
    - Topical LA (cophenylcaine spray) → vasoconstriction can shrink the turbinates
    - Premedication with IV metoclopramide can also decrease pain (sucrose in kids)
    - Direct the tube posteriorly (not superiorly) and it should naturally bend inferiorly toward the glottis → when resistance met, have the patient take

a drink and advance the tube when swallowing, minimises potential for false passage
    - Confirm with aspiration of gastric contents or on CXR
    - If intubated, flexing the neck or cooling the tube first may facilitate passage.

OESOPHAGEAL BALLOON TAMPONADE (SENGSTAKEN-BLAKEMORE):

- Designed to tamponade bleeding from oesophageal varices
- With increasing availability of endoscopy and utilisation of octreotide/terlipressin, the use of these tubes has declined
- Complications common → emesis/aspiration (consider intubation) high rate of oesophageal/gastric rupture (~10%)
- Maintain balloon tamponade until definitive measures can be taken
- TECHNIQUE:
    - Once tube is in place (similar technique to NG insertion) → inflate distal bleeding. If bleeding not stopped, inflate proximal (oesophageal) balloon



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PARACENTESIS:

- In paracentesis, asictic fluid is removed for diagnostic or therapeutic purposes
    - Rule out SBP → diagnostic

    - Patients with respiratory compromise or severe pain due to tense ascites → therapeutic, large volume paracentesis
        - Can be complicated by hyponatraemia, renal impairment and encephalopathy
        - Whether diagnostic or therapeutic, complications include bowel perforation, ascitic fluid leak, haemorrhage or introduction of infection
- US can confirm presence of fluid and best location for drainage to minimise potential for bowel damage:

- Correct coagulopathy prior procedure
- Place in comfortable supine position → LLQ most often due to potential to liver injury in RLQ
    - Appropriate skin preparation → skin traction can create Z-track (displaced track) to the peritoneum, which can minimise potential for infection and persistent leakage

TRANSABDOMINAL FEEDING TUBES:

- COMPLICATIONS FROM THESE TUBES NEED TO BE RECOGNISED

Table 89-5 Complications Seen with Transabdominal Feeding Tubes	
Complication	**Initial Considerations**
Purulent drainage from stoma	Local care with hydrogen peroxide unless cellulitis is present.
Leakage from stoma	Carefully replace with larger tube.
Tube occlusion	Attempt irrigation, most often, just replace.
Dislodged tubes	Gently replace, confirm placement with x-rays.
Pneumothorax	High index of suspicion, consider needle aspiration.
Bacteremia	Consider as potential source in septic patient.
Bleeding from tract	If recently inserted, consider local injection, consult.
Bleeding from granuloma buildup	Local therapy with silver nitrate.
Infection of surrounding skin	Consultation, pull tube, IV antibiotics.
Necrotizing fasciitis	Consider MRI to help confirm, surgical debridement.
Peritonitis	Determine if fistula exists, consultation, IV antibiotics.
Pulmonary aspiration of feedings	Reduce flow rate, half-strength feeds, consider J-tube.
Vomiting or diarrhea	Reduce flow rate, half-strength feeds, stop feeds.
Gastroesophageal reflux	Reduce flow rate, half-strength feeds, consider J-tube.
Intestinal obstruction	Step feedings, NPO, admit, and observe.
Gastric outlet obstruction	Reposition tube.
Gastric volvulus	Surgical consult.
Gastric perforation	Surgical consult.
Esophageal perforation	Surgical consult.
Colonic perforation	Surgical consult.
Colocutaneous fistula	Surgical consult.
Electrolyte abnormalities	Change feedings or increase free water.
GI bleeding	Endoscopy and therapy directed at cause.
Bolster buried in abdominal wall	Surgical consult.

- FREQUENT MINOR COMPLICATIONS ARE ASSOCIATED WITH THESE TUBES:
    - Purulent drainage and leakage around the stomal site, clogging, dislodgement and vomiting/diarrhoea
    - As long as there is no evidence of cellulitis or necrotising fasciitis, local skin care with peroxide and warm water will usually clear up the problem
    - If tubes were placed by a surgeon or endosocopist → there will usually be a bolster holding the tube in place → can either be removed endoscopically or if the tube is cut, get serial radiographs to ensure passage within 1-2 weeks
    - If the tube has become dislodge or has fallen out, it should be replaced as quickly as possible (within a few hours to prevent closure of the tract → most tracts mature after 2-3 weeks. DO NOT ATTEMPT TO REPLACE A TUBE WITH AN IMMATURE TRACT. If resistance is met, abandon the attempt.