Surgical management of Peptic Ulcer Disease

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A Ministry of something DEEPER ministries

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- Laboratory
- Pharmacy
- Major and Minor Surgeries (with a registered surgeon on full time staff)
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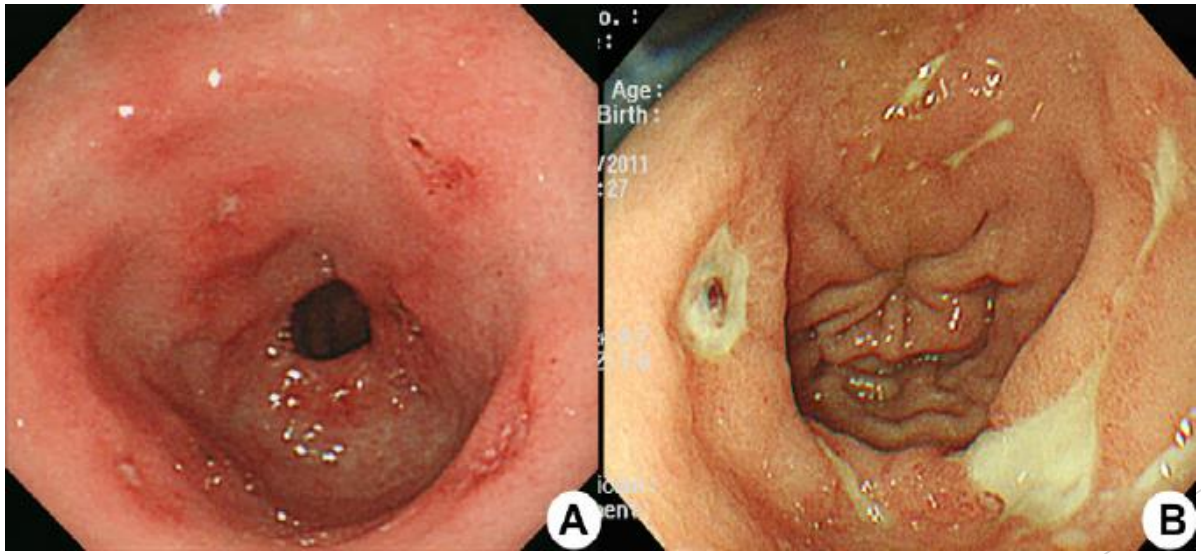
Introduction

- Previously commonest indication for gastric surgery
- Today: elective surgery uncommon
  - Development of antisecretory drugs(PPIs & histamine blockers)
  - H-pylori treatment
- Complications still occur, emergency treatment is surgical



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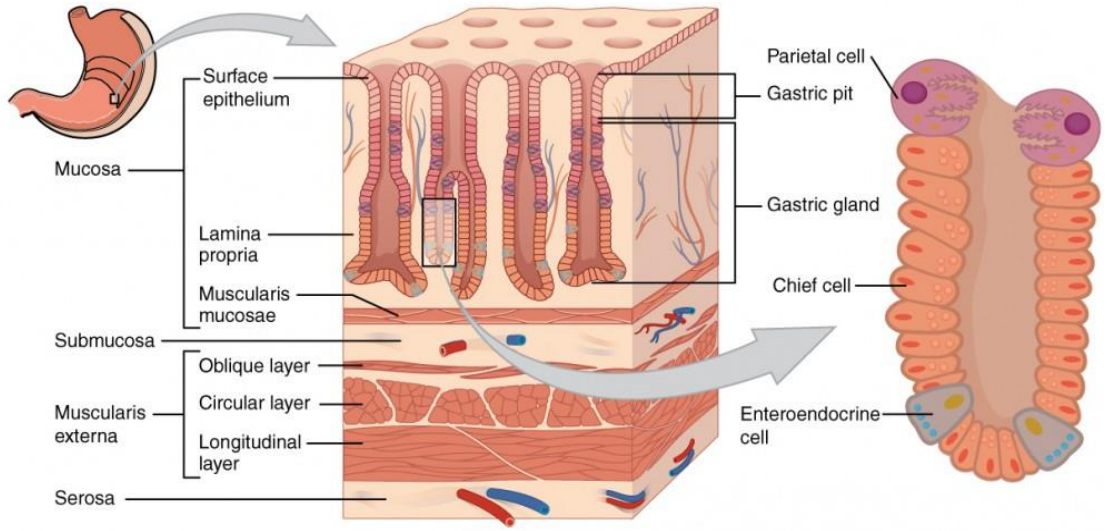
Definition

- Ulcer: A mucosal break (>5mm diameter)extending beyond muscularis mucosa
- Erosion: Gastric/duodenal lesion(>5mm)limited to the mucosa



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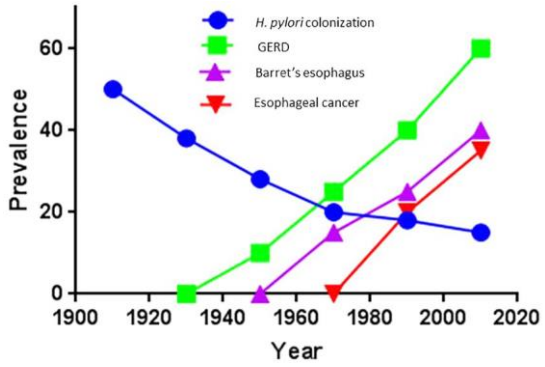
Epidemiology

- PUD affects 4m people worldwide
- Incidence 1.5-3%
- Lifetime prevalence of perforation in PUD 5%
- Mortality of perforation is 1.3-20%
- 30 and 90 day mortality 29-30% respectively



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Aetiology

- H-pylori
- NSAIDS
- Smoking,alcohol
- Malignancy
- Extreme stress
  - cushing’s ulcer:head injury
  - Curling’s ulcers:burns

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Helicobacter pylori

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Helicobacter pylori

- Gram negative rod
- 50% of world's population estimated to be infected
- Transmission:vomit,stool,saliva
- Infection through contaminated drinking water & food is controversial
- **95% duodenal ulcers**
- **70% gastric**

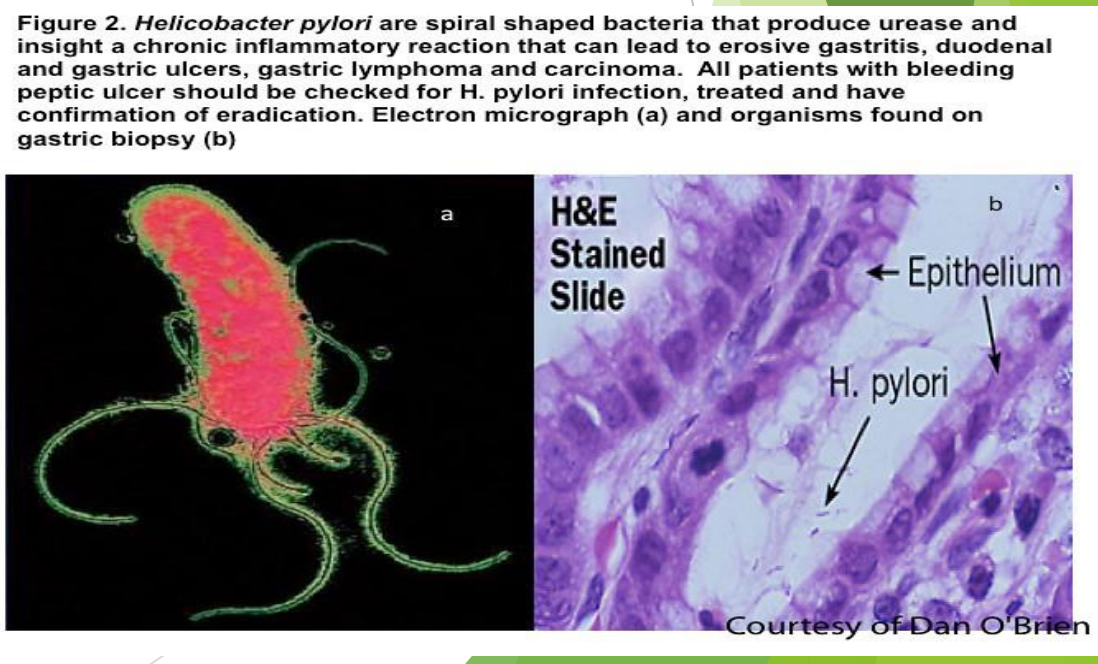

Figure 2. ***Helicobacter pylori*** **are spiral shaped bacteria that produce urease and insight a chronic inflammatory reaction that can lead to erosive gastritis, duodenal and gastric ulcers, gastric lymphoma and carcinoma. All patients with bleeding peptic ulcer should be checked for H. pylori infection, treated and have confirmation of eradication. Electron micrograph (a) and organisms found on gastric biopsy (b)**

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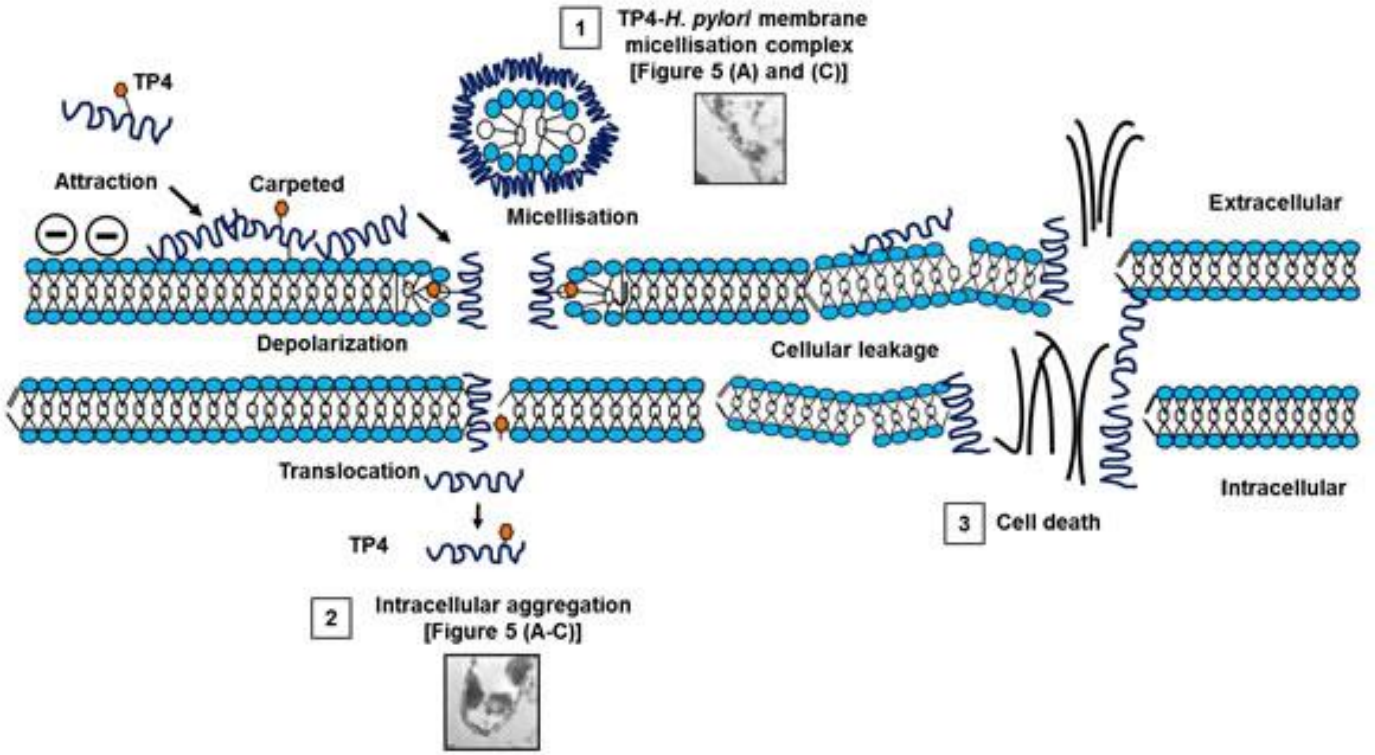
Mechanism of action of H-pylori



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Diagnosis of H-pylori

- Invasive
  - HISTOLOGY
    - CLO test
    - PCR
- Non invasive
  - C13 breath test
  - Stool test
  - Serum IgG

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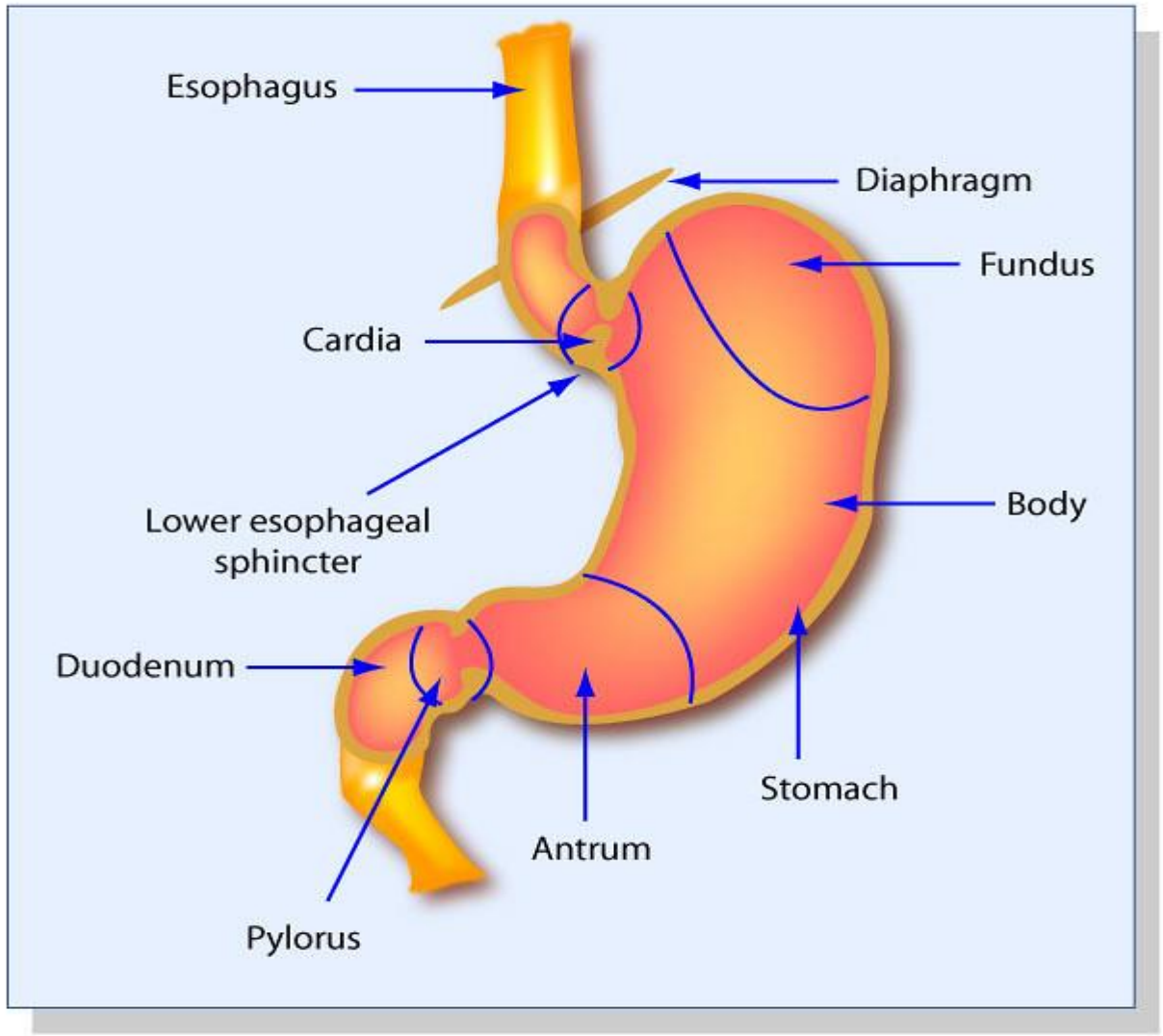
Anatomy

- Gastric ulcers
  - Lesser curvature of gastric antrum
- Duodenal ulcers
  - 4x commoner cf GU
  - 1st part of duodenum



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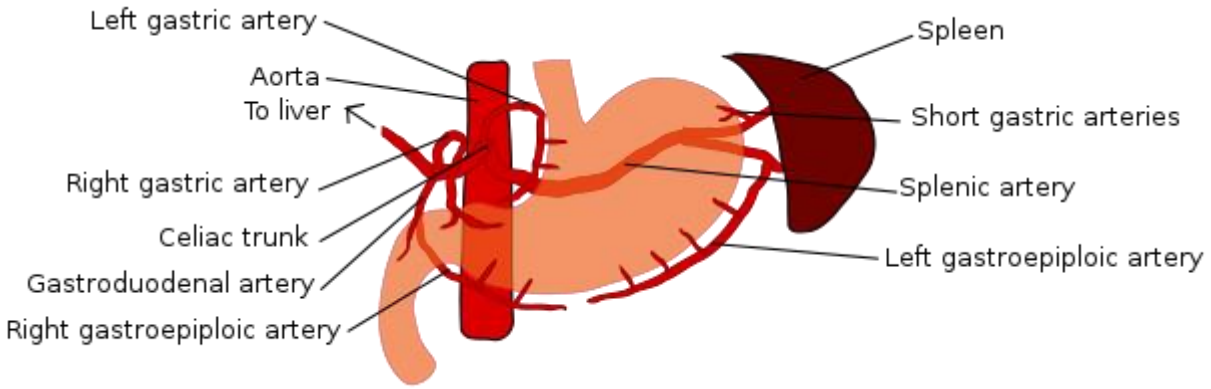
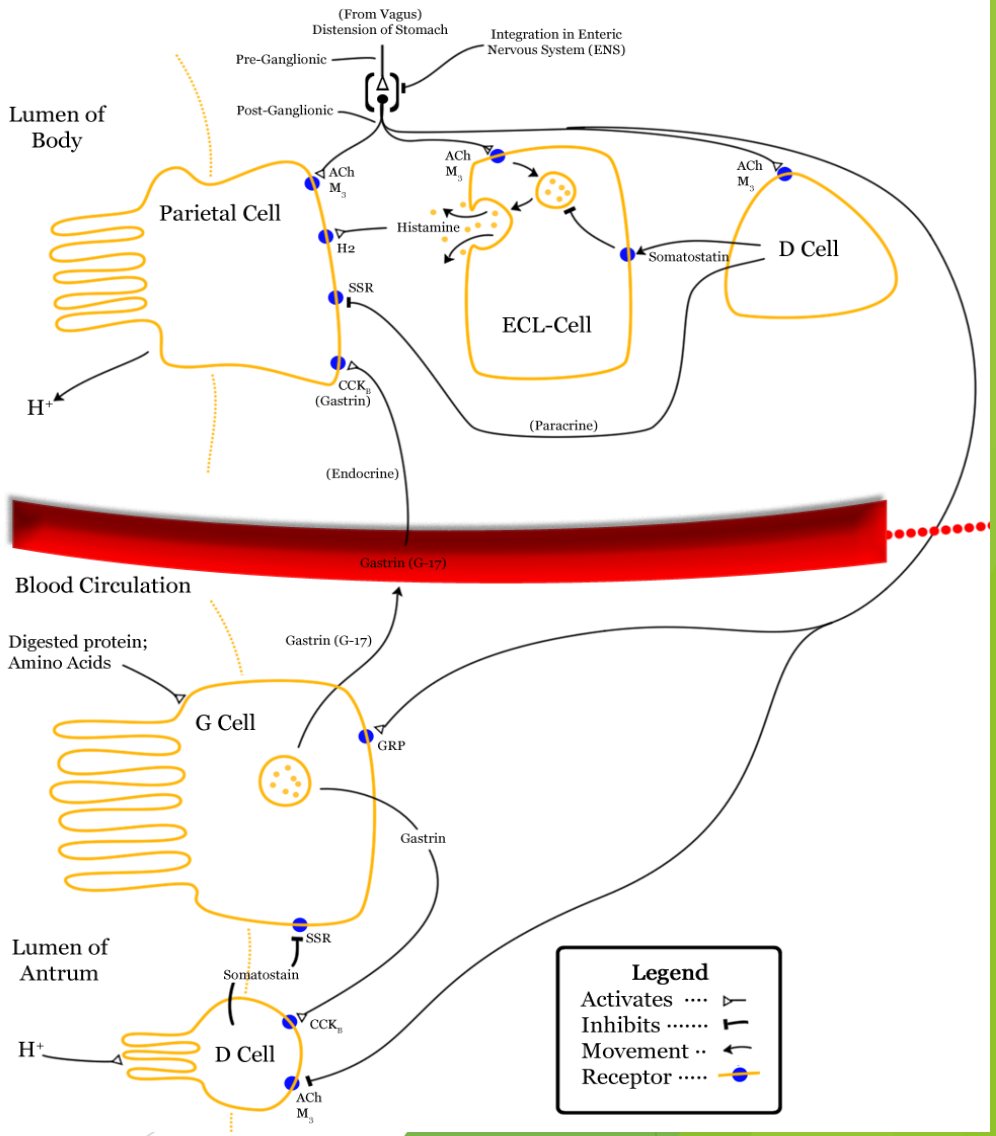
Physiology





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Presentation

- Epigastric pain
  - Duodenal ulcers
    - Before meals and at night
    - Relieved by eating
  - Gastric ulcers
    - Worse on eating (wt loss)
    - Relieved by antiacids
  - Perforation
    - Sudden onset abd.pain
    - Peritonism
    - Board like rigidity

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Work up

- Bloods: Hb, FBC, Urea (hemorrhage)
- C13 breath test
- Plain films (can be negative)
- CT95% sensitive
- Endoscopy
  - CLO/urease test for H.pylori
  - Biopsy all ulcers to check for malignancy
- Gastrin levels if zolinger-Elison suspected

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Medical treatment

- PPI x2 for 7-14 days
  - Metro x2
  - Clarithromycin x2

- All patients with PUD should be tested and if possible treated for H.pylori
- Patients should be tested **4 weeks** after completing treatment
- Any patient tested for H.pylori should stop taking PPIs at least **2 weeks** before hand

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Complications

- **Bleeding – 73%**
- **Perforation- 9%**
- Obstruction-3%
- Intractable disease
- Suspected malignancy

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Indications for surgery

- Failed endoscopic therapy
- Haemodynamic instability despite volume resuscitation(>3 units of blood)
- Recurrent haemorrhage after 2 attempts at endoscopic treatment
- Continued slow bleed requiring >3 units of blood

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Surgery Vs. Angioembolisation

- Surgery and embolization = effective following failed endoscopy
- Embolisation in patients unfit for surgery
- Surgery if patients with a coagulopathy
- Surgery if all else fails

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Surgical Management

- Goal = haemorrhage control
- Acid reduction(historically surgical, currently medical)
- Approach determined by location (surgeon should attend endoscopy)

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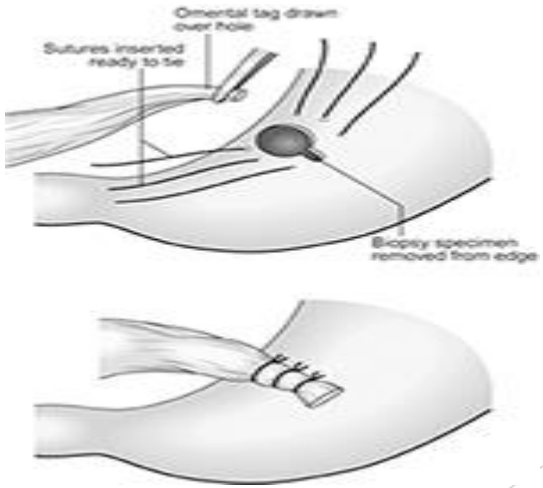
Bleeding duodenal ulcers

- Posterior wall ulcers: expose ulcer with duodenotomy or duodenopyloromyotomy
- Direct suture ligation
- Gastroduodenal artery ligation if necessary
- +/- Reinforce with Graham (omental) patch



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Bleeding gastric ulcers

- If large curvature = wedge resection
- Antrum = billroth 1(distal gastrectomy
- High riding = billroth 2/ subtotal gastrectomy

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Take home message

1. Duodenal > Gastric ulcers
2. H.Pylorivis a major risk factor and requires treatment
3. Bleeding, first line is endoscopy
4. Uncontrolled bleeding requires surgery
5. Open surgery for unstable patients

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