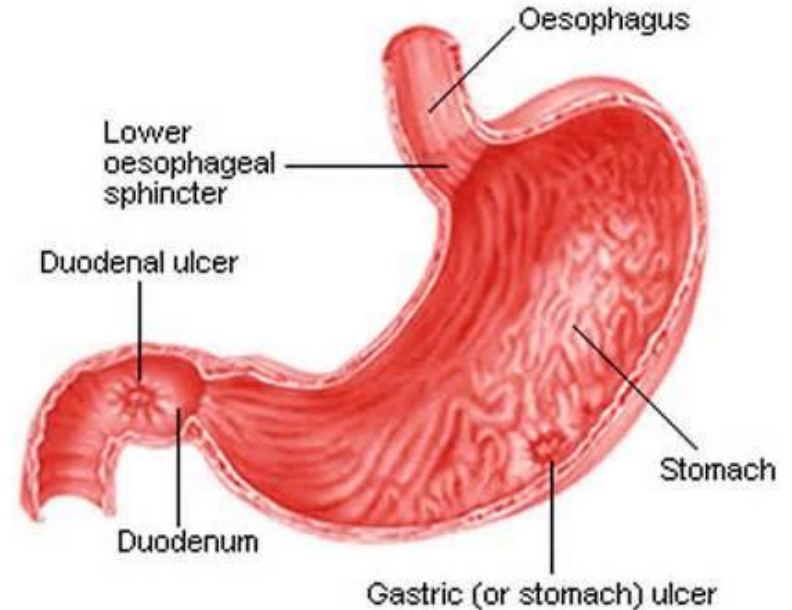


Acute Non- Variceal Upper Gastrointestinal Bleeding

Prof. N. J. Bandesha
Department of Surgery
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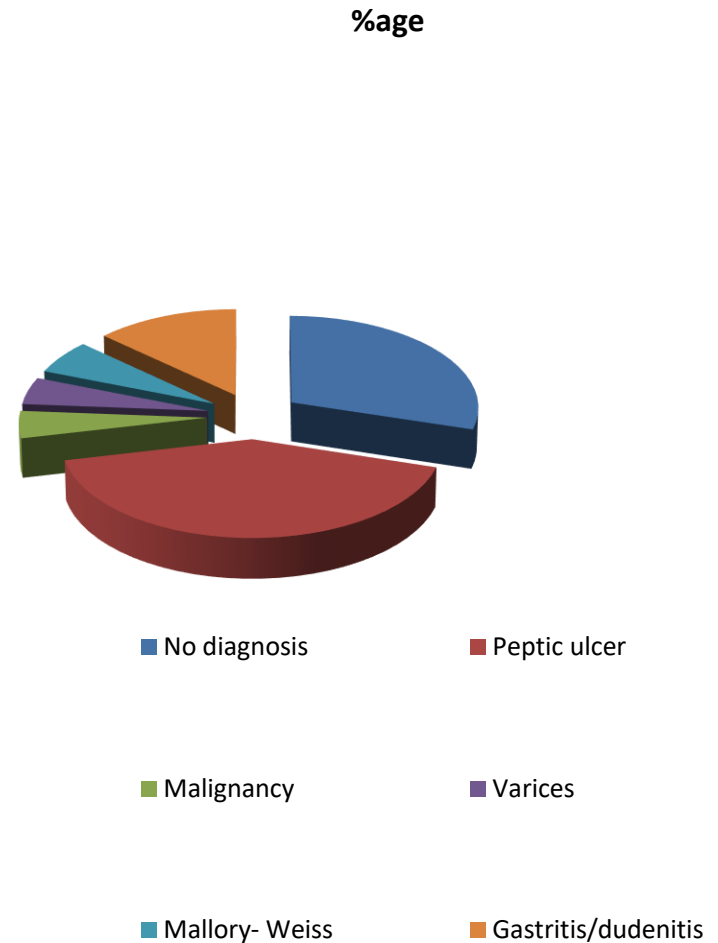
Introduction

- In UK incidence 103 cases per 100,000 per year
- Overall mortality 8 -14%
- Mortality high in hospitalized pts
- Typical Pt. elderly, co-morbidities & on anti-palacet therapy



Aetiology

No Diagnosis	25 %
Peptic Ulcer	35%
Malignancy	4%
Varices	4%
Mallory- Weiss	5%
Gastritis/ Duodenitis	11%
Oesophagitis	10%
Others	6%



Initial Assessment & Triage

- Haematemesis
- Melaena
- Coffee ground vomiting
- Haematochezia
- Trivial -- catastrophic bleeding
- The Blatchford Score
- Rockall Score
- Must be calculated in all cases

Rockall Score

Total score is calculated by simple addition. A score less than 3 carries good prognosis but total score more than 8 carries high risk of mortality

	Score 0	Score 1	Score 2	Score 3
Age	< 60 yrs	60- 79 yrs	80 yrs or more	
<u>Shock</u>	No shock	Pulse >100 Systolic BP >100	<u>SBP</u> <100	
Co-morbidity	Nil major		<u>CHF</u> , <u>IHD</u> , major morbidity	Renal failure, liver failure, metastatic cancer
Diagnosis	<u>Mallory-Weiss</u>	All other diagnoses	GI malignancy	
Evidence of bleeding <small>5/1/2020</small>	None		Blood, adherent clot, visible or spurting vessel	

Baltchford Score

- Low need for intervention if at admission
 1. Blood urea < 6.5mmol/L
 2. Hb > 130gm/L in males
& 120gm/L in female
 3. Systolic BP 110 mm Hg or >
 4. Pulse < 100 beats/minute

Initial Management

- Young pts, no haemodynamic compromise, Baltochford /Rockall Score zero can be discharged
- Most pts need admission
- Two large bored cannula
- Resuscitation

FBC

Coagulation screen

ABGs

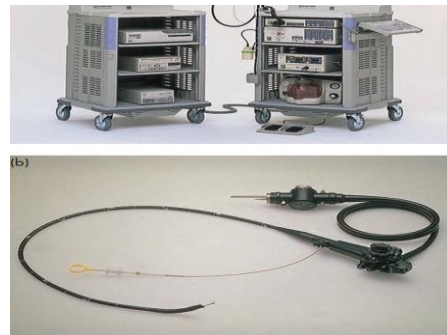
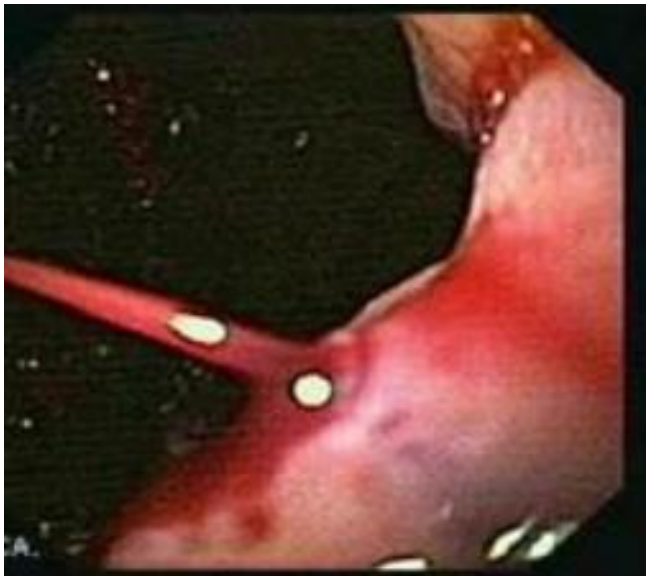
Group and cross match

Biochemistry

Admit in dedicated Upper GI unit

When To Do OGD

- Indications vary
- But main factor is necessity for endostasis
- Continuous bleeding
- Instability despite resuscitation
- Needs urgent endoscopy
- But in general after 24/24



- Stigmata of hemorrhage in bleeding peptic ulcers have prognostic characteristics.
- 5 categories:
 - a) active bleeding,
 - b) a non-bleeding visible vessel,
 - c) adherent clot,
 - d) dot,
 - e) a clean base.



Massive Haemorrhage

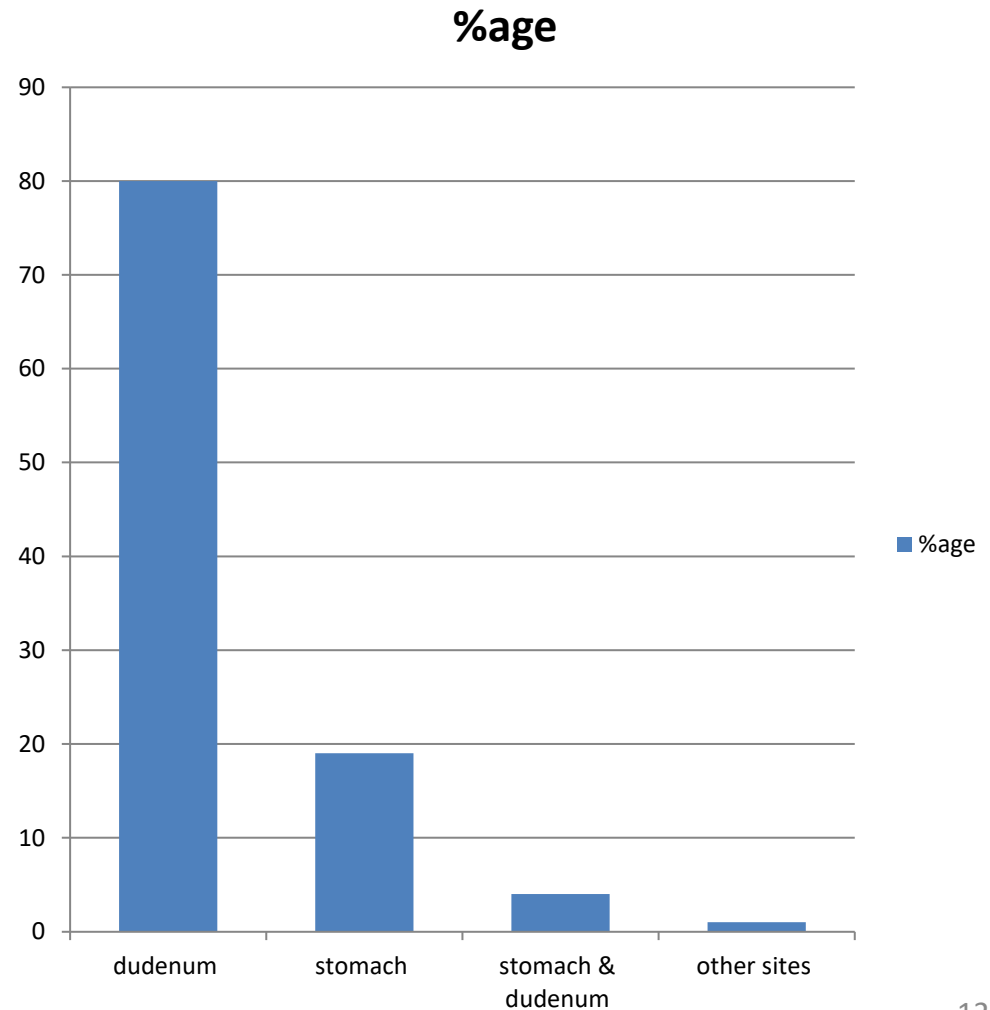
- Needs to follow usual guide lines
- Pre warmed crystalloid or colloids
- Blood if needed
- RBC replacement if loss 30% or more
- But difficult to assess
- Hb level not good indicator of loss
- Platelets if $< 75 \times 10^9/L$
- Coagulation factors if loss $>$ one blood volume
- Mostly FFP

Peptic Ulcer

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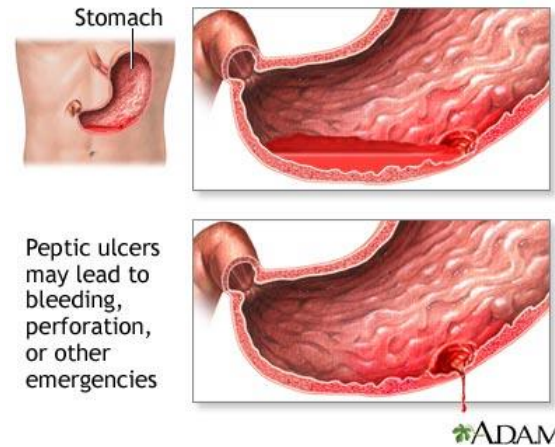
Introduction

- Chronic
- usually solitary lesions
-
- 80% - duodenum
- 19% - stomach
- 4% - stomach & duodenum
- 1% - other sites esophagus, gastrectomy, jejunum, Meckel's diverticulum



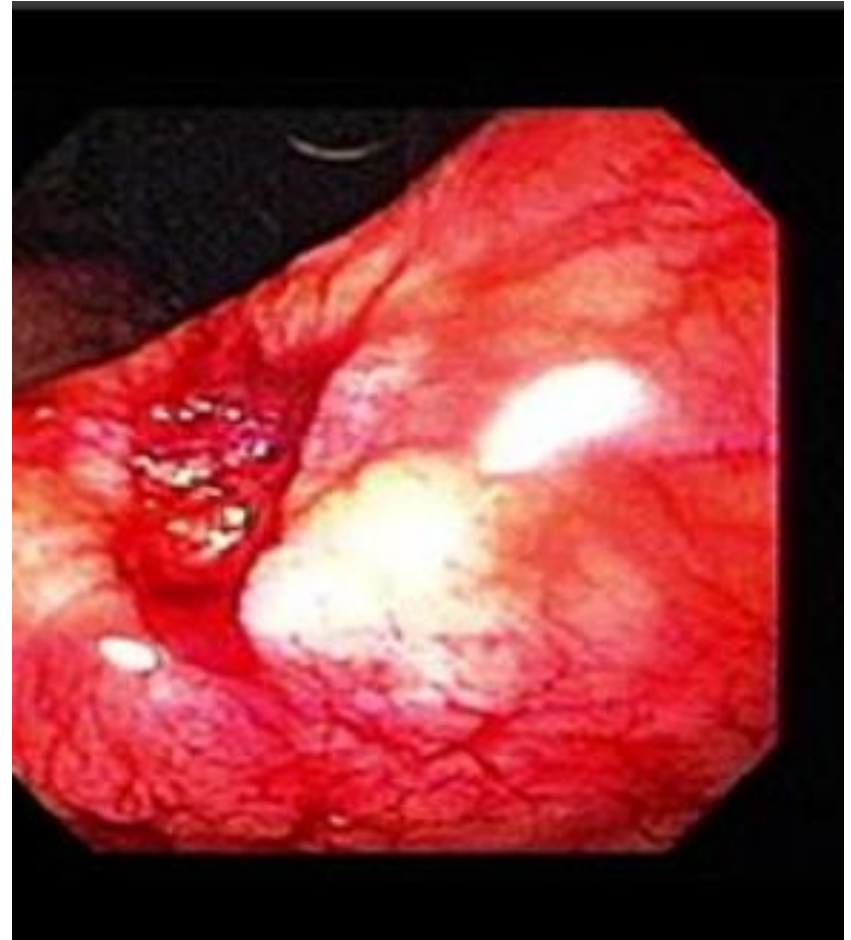
Predisposing factors

- H. pylori
- Smoking & alcohol
- Drugs (NSAIDS)
- Stress
- Diseases like cirrhosis, CRF, COPD, Hyperparathroidism
- Familial
- Gastrin secretion
- Incidence decreasing
- Male : female = 4:1
- Mortality higher in poor



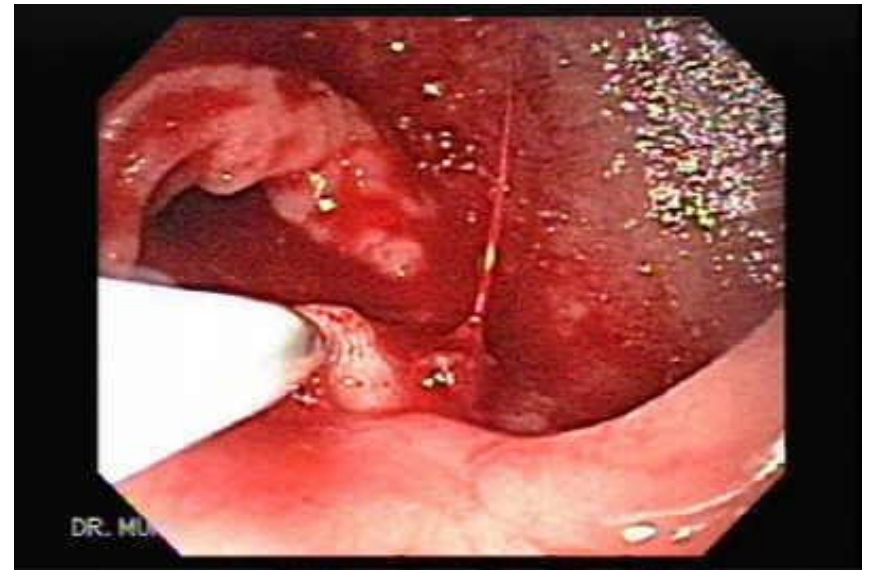
Pathology

- 80% solitary
- 80% in duodenum out of these 90% in 1st part
- In stomach at lesser curve
- 50% < 2 cm
- 10% > 4cm

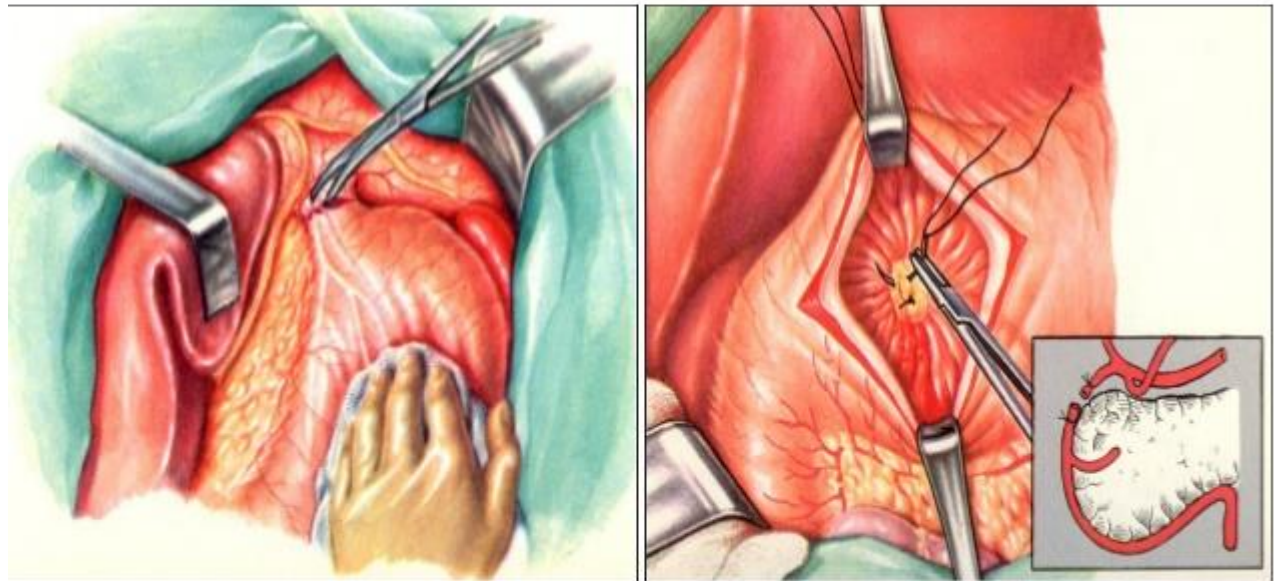


Duodenal Ulcer

- Common malady today
- Surgery rarely done
- Surgery mostly done for complications
- Bleeding
- Perforation
- Obstruction



Surgery of bleeding duodenal ulcer



Truncal vagotomy

Suture of bleeding duodenal ulcer

Duodenal Ulcer

- 90% of DU have H. Pylori infection, NSAIDS or aspirin use
- Steroids or cocaine use
- Smoking
- Gastroduodenal dysmotility
- Psychological stress
- Zollinger-Ellison syndrome important D/D (hard to treat & distal to 1st part of duodenum)

Medical Management of DU

- Acid suppression
- Eradication of *H. pylori*
- Stoppage of NSAIDS & aspirin
- *H. pylori* infection diagnosed by serology, antral biopsy, Urea breath test

***H. PYLORI* BACTERIA**

- Gram negative
- Spiral rod
- Unipolar flagella
- Microaerophilic
- Urease positive*

*Most important character



*Scanning microscopic view of *H. pylori*

Medical Management of DU

Regimen I

- PPI
- Clarithromycin 500 mg BD 1/52
- Amoxicillin 1gm BD or
Metronidazole 400mg BD 1/52

Regimen II

- PPI
- Bismuth subsalicylate 2 tablets OD
14/7
- Meronidazole 200mg QDS 14/7
- Teracycline 500mg QDS 14/7

Indications for Surgery



Obstruction



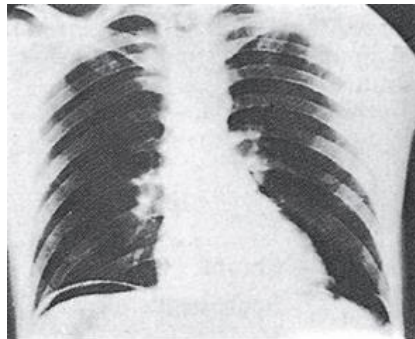
Bleeding



Perforation

Perforated Duodenal Ulcer

- Morality is higher than bleeding ulcer (10.6% : 2.5%)
- Acute abdomen , peritonitis/
Pneumoperitoneum
- Resuscitation
- I/v antibiotics
- Surgery open or laparoscopic repair
- Peritoneal wash out
- **Occasionally** stable sealed perforation by conservative way



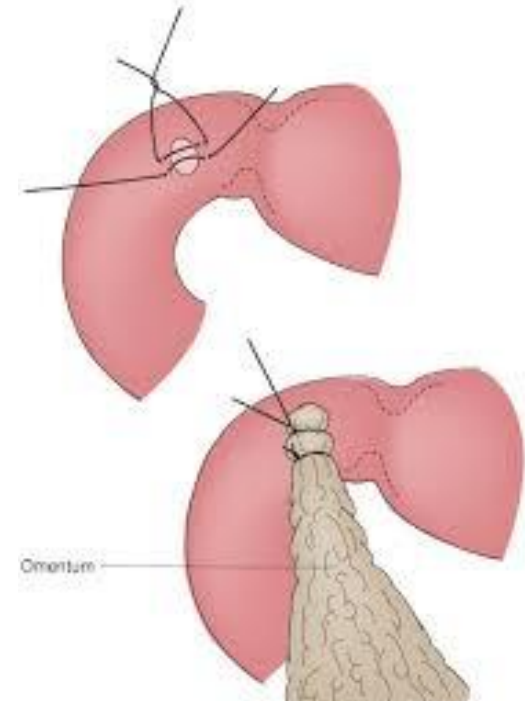
Surgical Options

- Simple closure & over sewing
- HSV
- Vagotomy & Drainage
- Vagotomy & Antrectomy



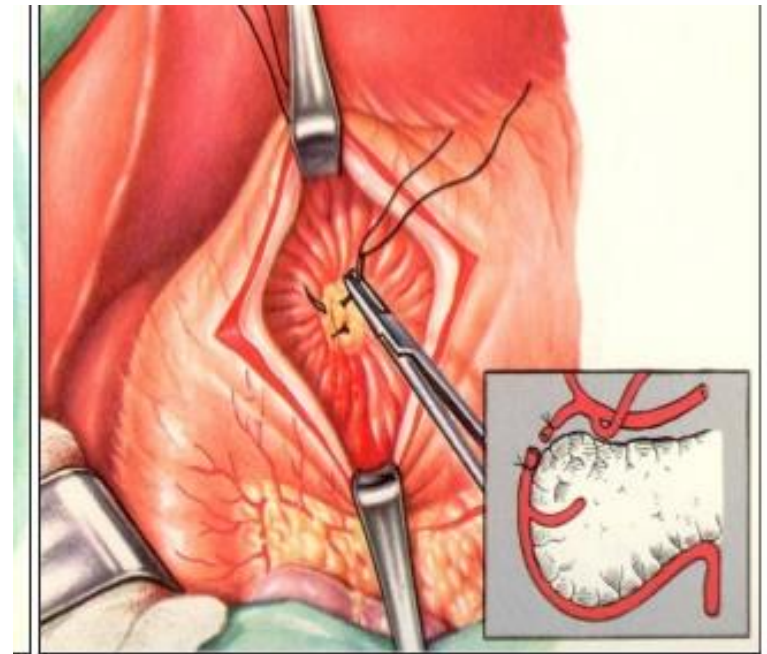
Perforated Duodenal Ulcer

- Anterior surface post pyloric region
- < 5 mm
- simple omental patch
- Vigorous peritoneal lavage
- Sump Suction tube
- Liquid diet on 2nd or 3rd day
- Triple therapy



Bleeding Duodenal Ulcer

- No significant change in incidence
- Continuous infusion of PPI
- Hypotensive Pts. Transfusion need & posterior ulcer need surgical R/V



Suture of bleeding duodenal ulcer

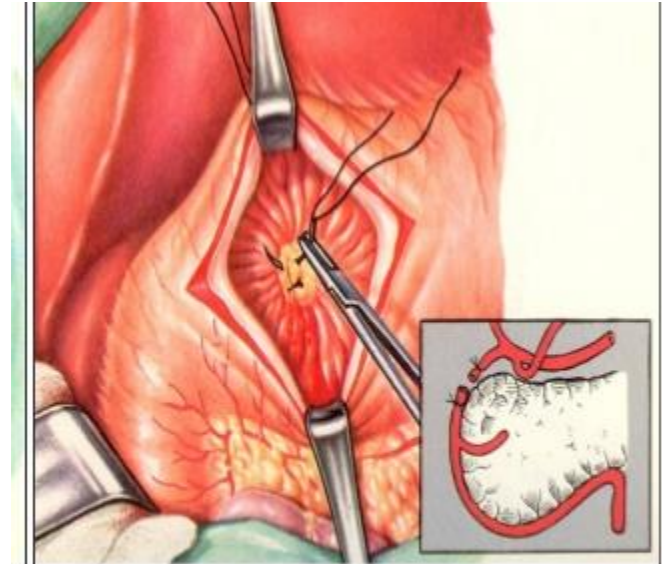
Endoscopic Treatment

- Diathermy
- Epinephrine injection
- Clipping



Indications for Surgery

- Haemodynamic instability
-
- Failed endoscopic treatment
- Visible vessel



Suture of bleeding duodenal ulcer

Obstructing Duodenal Ulcer

- Functional gastric outlet obstruction
- Pain, nausea & vomiting of short duration (days)
- Improve by NG suction
- PPI
- Do not need surgery
- OGD– oedema & active ulceration

Obstructing Duodenal Ulcer

- Symptoms for months
- Pts with weight loss, nausea & vomiting
- Distended epigastrium
- Succession splash
- Needs surgery
- OGD– distended stomach with narrow gastric outlet
- Balloon dilatation
- HSV/ GJ
- Vagotomy & antrectomy

Benign Gastric Ulcer

- Most common upper GI problem
- Most common in older men
- Peak incidence 55-65 yrs
- Risk factors are
 - NSAIDS
 - Smoking
 - H. Pylori infection



Peptic ulcers may lead to bleeding, perforation, or other emergencies



ADAM.

Clinical Features

Benign Gastric Ulcer

- Epigastric pain following meals
- Bloating
- Belching
- Gastric outlet obstruction
- Haematemesis & Maelena
- Perforation
- Obstruction as nausea & vomiting

Investigations

Benign Gastric Ulcer

- OGD + biopsy+ CLO test
- For CLO test-- Bismuth containing medicine , PPI & Antimicrobial medicines stop for 4/52
- Urea Breath test

Treatment

Benign Gastric Ulcer

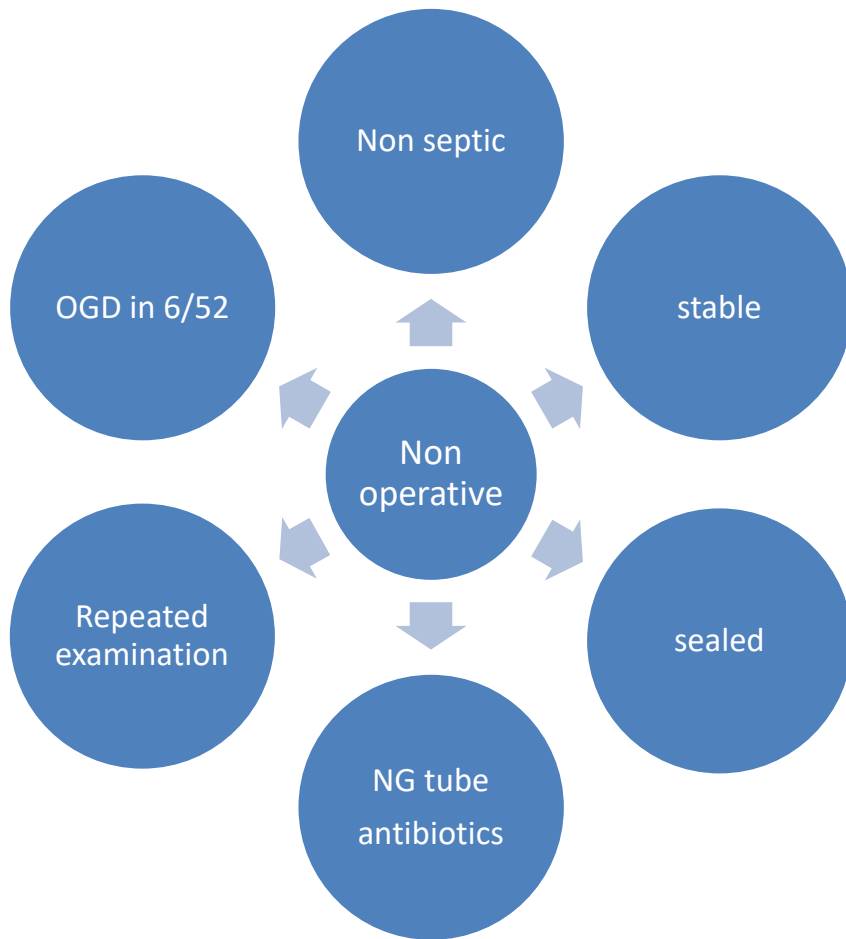
- 80-90% have H. Pylori
- General management

Assess indications for steroids and stop if possible

NSAIDS should be stopped if possible

- Eradicate H.Pylori by triple therapy
- PPI+ metronidazole + Clarithromycin or Amoxicillin
- Eradication done in 90%
- Repeat OGD in 6/52
- Surgery may be needed as well

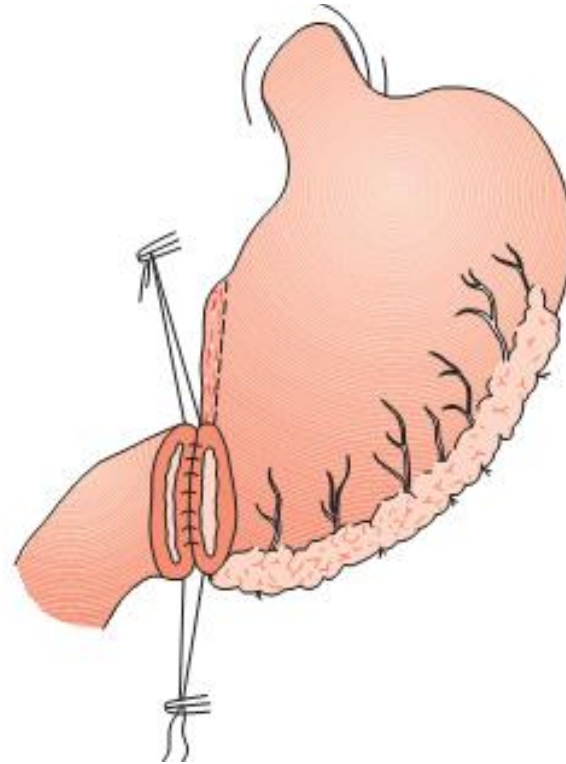
Management of Gastric Ulcer Perforation



- Non operative - Only in very selective cases
- If peritonitis progresses
- No improvement in 12/24
- Surgery needs to be done

Surgical Treatment of Perforated Gastric Ulcer

- Simple patching of hole and biopsy
- Distal gastrectomy Billroth I anastomosis



Management of Bleeding Gastric Ulcer

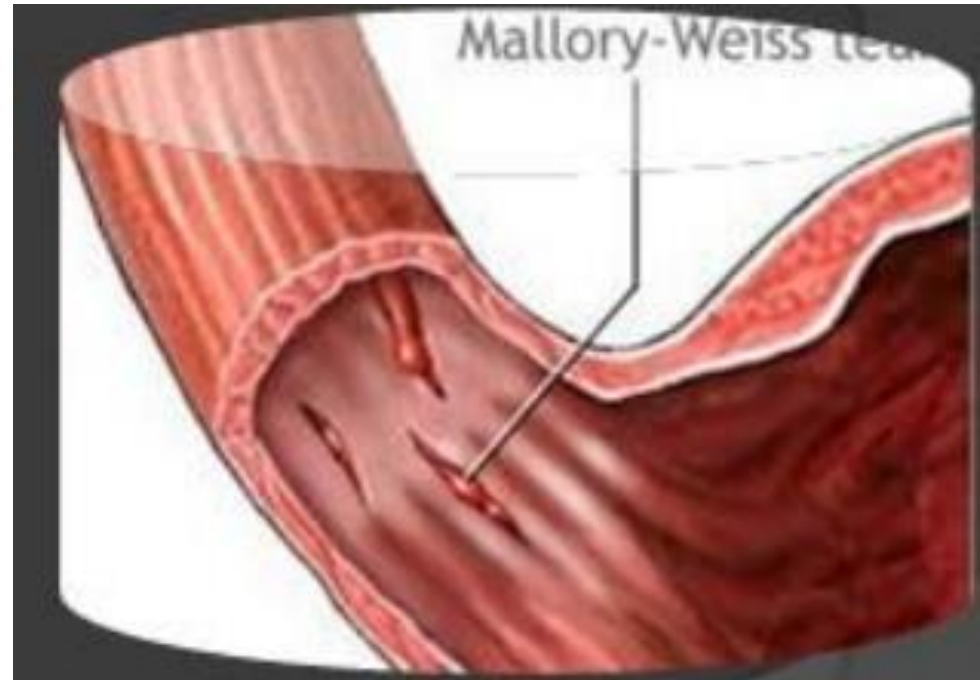
- Appreciable mortality
- 80% stop itself
- Resuscitate & achieve stability
- Endoscopic treatment like heat probe, injection or both
- Surgery may needed as well

Gastric Ulcer Obstruction

- Usually complication of scarred duodenal ulcer
- But recurrent gastric ulcer—stricture
- PPI
- Correction of electrolytes
- OGD
- Balloon dilatation
- Stenting
- Surgery

Mallory- Weiss Syndrome

- Painless haematemesis after vomiting & straining mostly by excessive alcohol intake
- High incidence of GORD
- Linear tear of mucosa or mucosa & submucosa close to OGJ
- More common in males



Mallory- Weiss Syndrome

- Tear may be single or multiple
- Bleeding stops spontaneously in majority
- Located on lesser curve side in 85%
- But may be severe or recurrent
- Associated lesion as hiatal hernia , stic or duodenitis/ peptic ulcer

Mallory- Weiss Syndrome

- OGD to confirm diagnosis
- Most settle without treatment
- Injection of adrenaline 1:10000
- Mechanical methods like banding or clipping not superior but good alternatives

Dieulafoy's Lesion

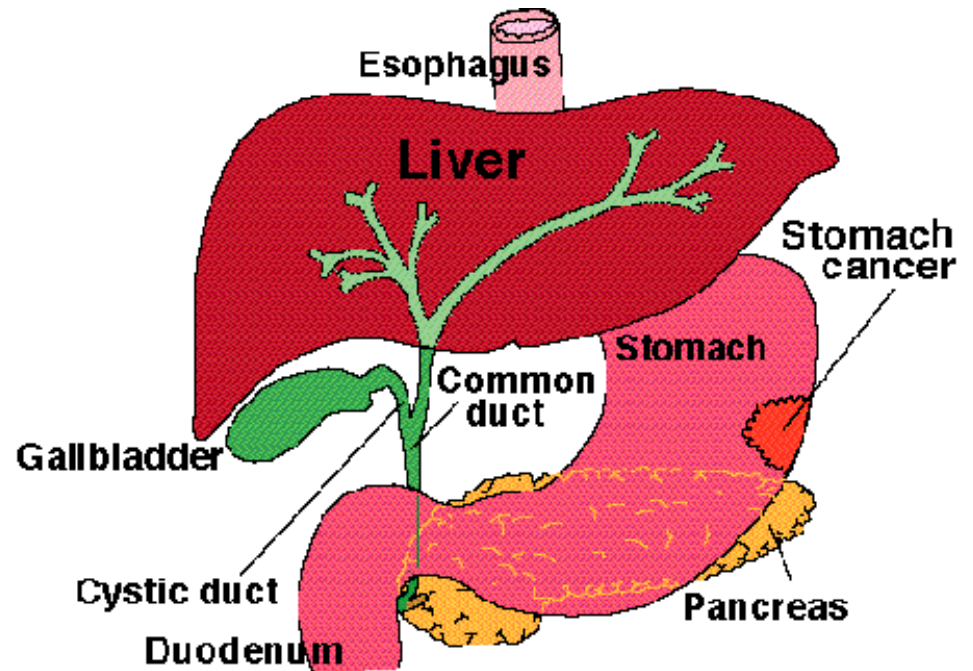
- Rare cause
- Spontaneous rupture of submucosal artery
- Mostly in stomach
- Usually within 3 cm of OGJ
- On OGD protruding vessel without surrounding edema
- Commonly missed due to small size & inaccessible position
- Clip or band ligation
- By this low rate of rebleed than adrenaline injection

Adenocarcinoma of Stomach

Naveed Jabbar

Epidemiology & Pathogenesis

- Leading cause of death
- 4th most common malignancy
- 2nd leading cause of cancer related death
- Considerable geographical variation



World wide Incidence

- **Japan**
- **Korea**
- **Area of South America**
- North America
- Australia
- Portions of North America

Epidemiology & Pathogenesis

- Poor prognosis
- 5 yrs survival 10%
- Better survival in Japan
- Male to female ratio 2:1



Predisposing Factors

- H. pylori infection
- Gastric polyps
- Exposure to nitrosamine
- Previous gastric surgery
- Tobacco use
- Pernicious anaemia
- Family history
- Genetic mutation such as e-cadherin

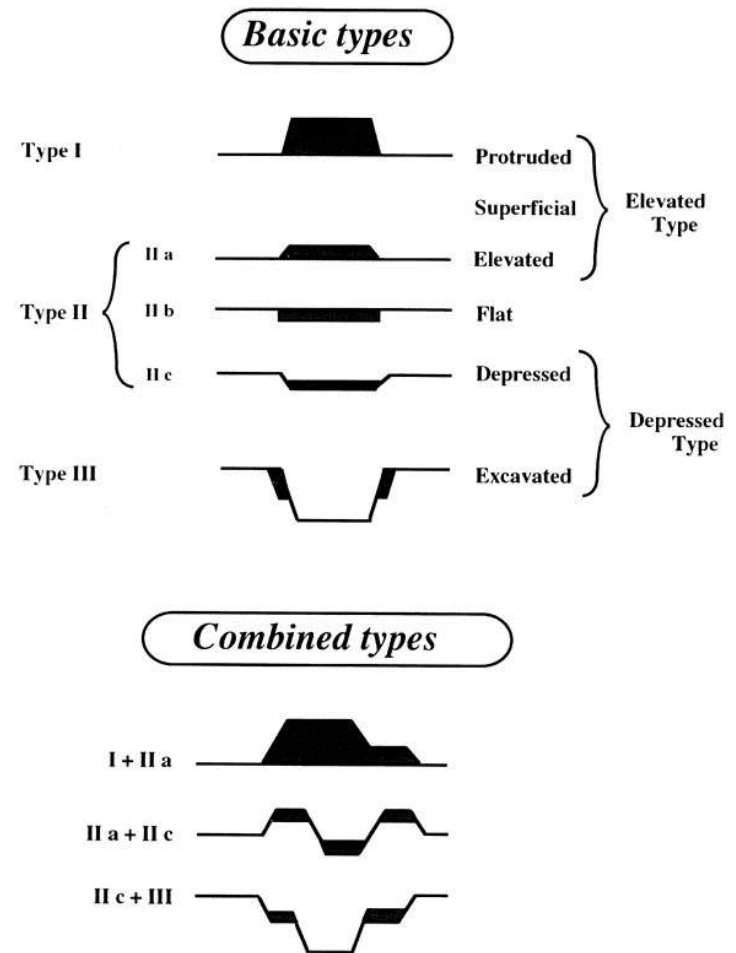
Pathology

- Over 90% are adenocarcinomas
- Subtypes are intestinal and diffuse
- Proximal tumours incidence increasing in Europe
- Distal more in Japan and other parts of world

Intestinal	Diffuse
Well differentiated	Poorly differentiated
More in high risk group	More common in west
Older people	More in women and young people
Blood born metastasis more common	Lymphatic spread more common

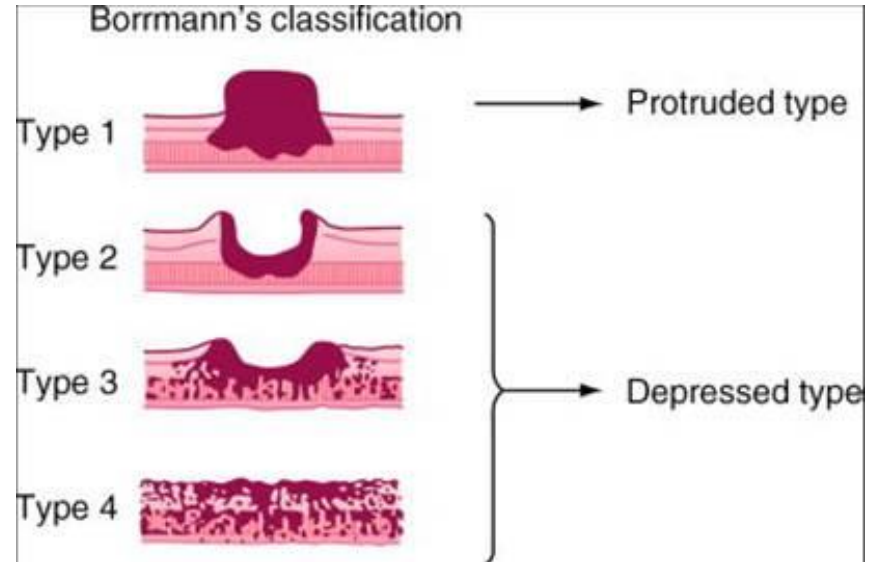
Early Gastric Cancer

- Cancer limited to mucosa and submucosa
- 30-40% of newly diagnosed cancer in Japan
- 15% of early gastric cancer lymph nodes +ve
- 5 yrs. survival is 80%



Advanced gastric Cancer

- Means a tumour which has involved muscularis prpopria
- > 90% in UK at the time of diagnosis
- Most have lymph nodes and peritoneal deposits



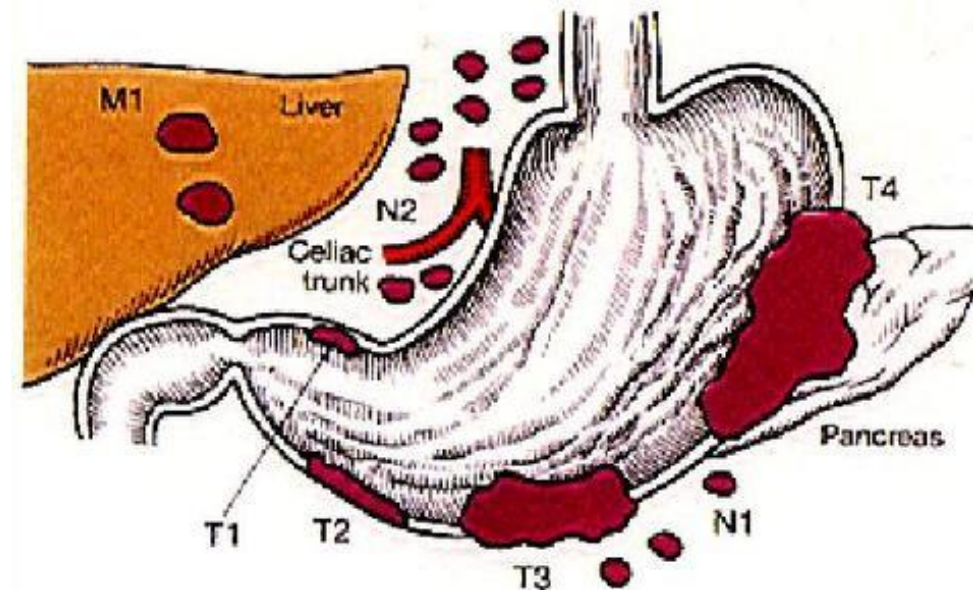
TNM Classification

- **T1= Limited to mucosa & submucosa**
- **T2= involves muscularis propria & subserosa**
- **T3 = penetrates serosa**
- **T4 = involves contiguous structures**

- **N0 = no lymph nodes**
- **N1 = 1-6 regional lymph nodes**
- **N2 =7- 15 regional lymph nodes**
- **N3 = > 15 lymph nodes**

- **M0 = No distant metastasis**

- **M1 = distant metastasis +**



Clinical features

- Vague symptoms
- Indigestion , vomiting
- Malaise
- Early satiety
- Post prandial fullness
- Loss of appetite
- Perforation, haemorrhage
- Abdominal mass
- Sister Mary Joseph's nodes
- Virchow's node
- Bulmer's shelf
- Jaundice
- Ascites
- Enlarged liver

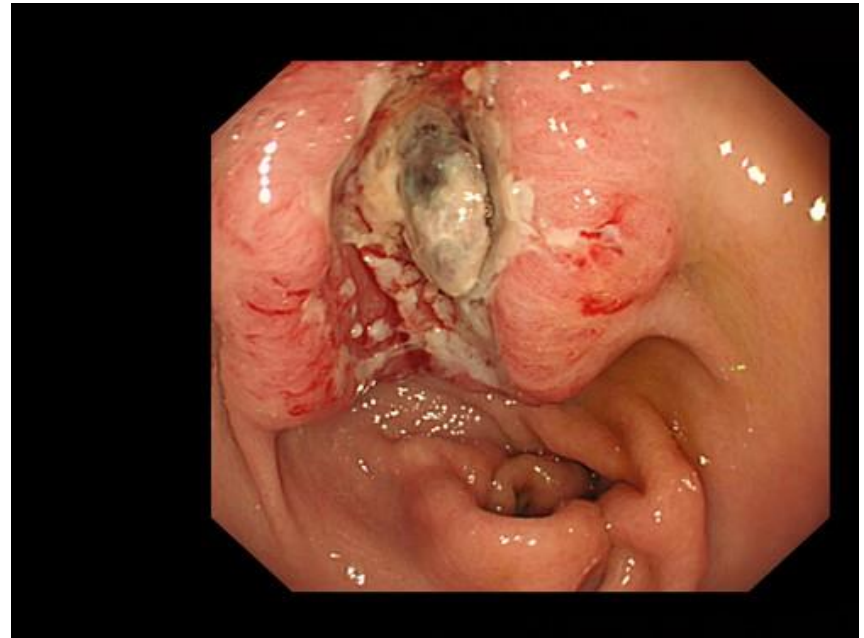
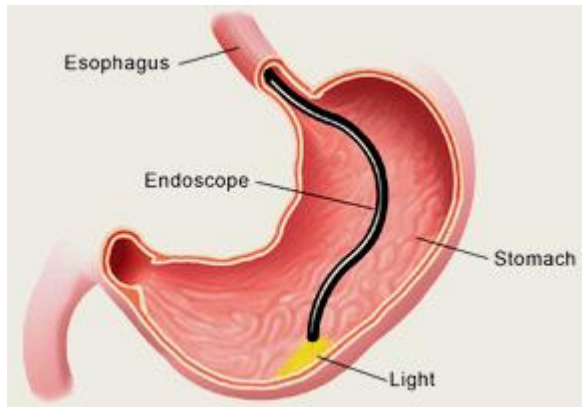
Investigations

- **OGD**
- **Ba Meal**
- **Gastric cytology**
- **CT scanning**
- **Laparoscopy**
- **Endoscopic US**



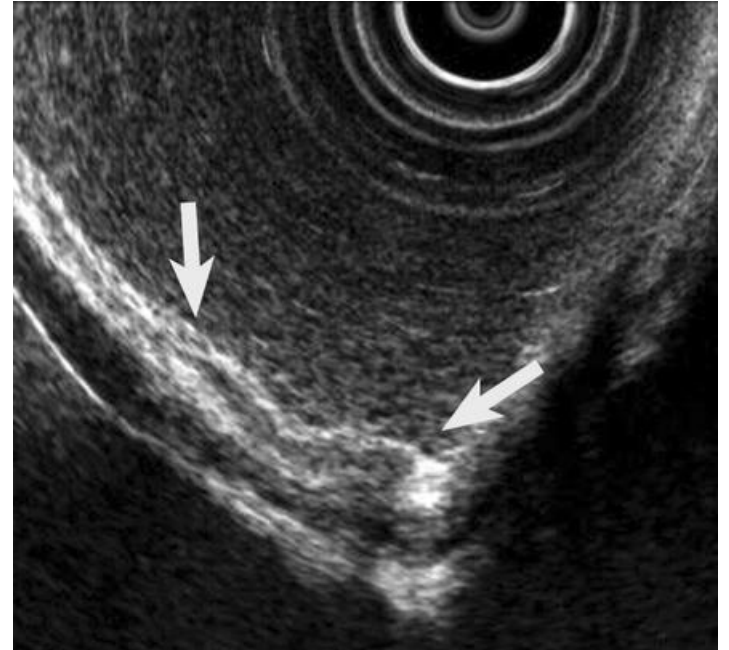
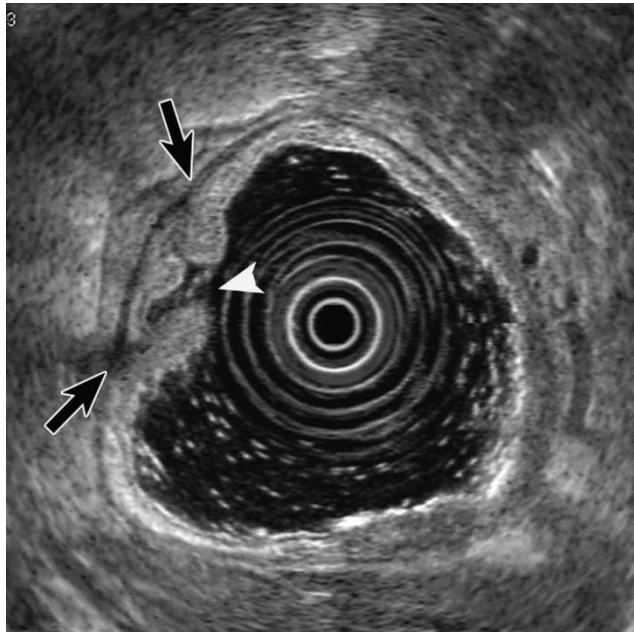
OGD

- Diagnostic Tool of Choice



EUS

- Depth of tumour-- 80%
- lymph node-- 50%



CT Scan

- Mainly used for detection of metastasis

- CT SHOWING LIVER METASTASIS

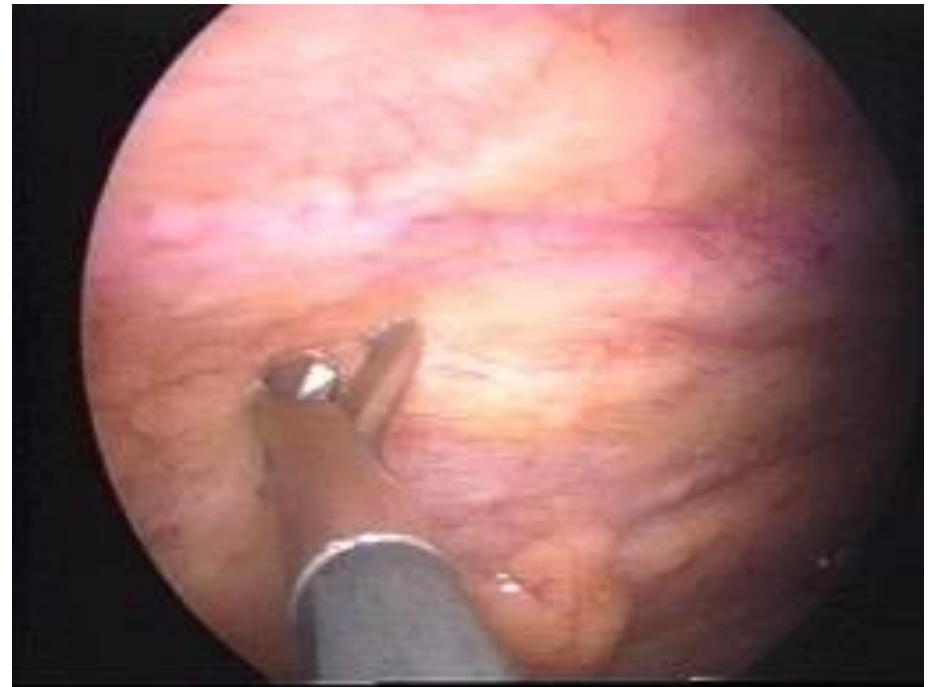


- CT SHOWING ANTRAL CANCER



Laparoscopy

- Un resectable disease
- Peritoneal washing done as well
- A recent investigation showed survival with – ve washing 98.5/12 and 14.8/12 with +ve cytology



Surgery

- Primary Resection
- Total or subtotal gastrectomy
- Lymphadenectomy
- D0= no attempt for excision of lymph nodes excision
- D1= excision of peri gastric nodes
- D2= excision nodes along main trunk of coelic axis

Surgery

- Cornerstone of curative therapy
- Objective - complete resection with – ve margin (R0 resection)
- Total or subtotal gastrectomy
- Randomized control trails shows no difference in survival
- Gross margin of 5 cm is acceptable
- Management of microscopic +ve margin (R1 resection) is continuous issue

Recent Italian study shows early(T1) cancer may not effect prognosis

Re excision for advanced tumour does improve survival

Lympadenectomy

- Extent of lymph nodes dissection is contraversial

But in West no improvement in survival

- JSRGC introduced guidelines in1980

Dutch Cancer Group & MRC did not show any benefit as per Japanese D2 by Japanese included distal pancreatectomy & splenectomy

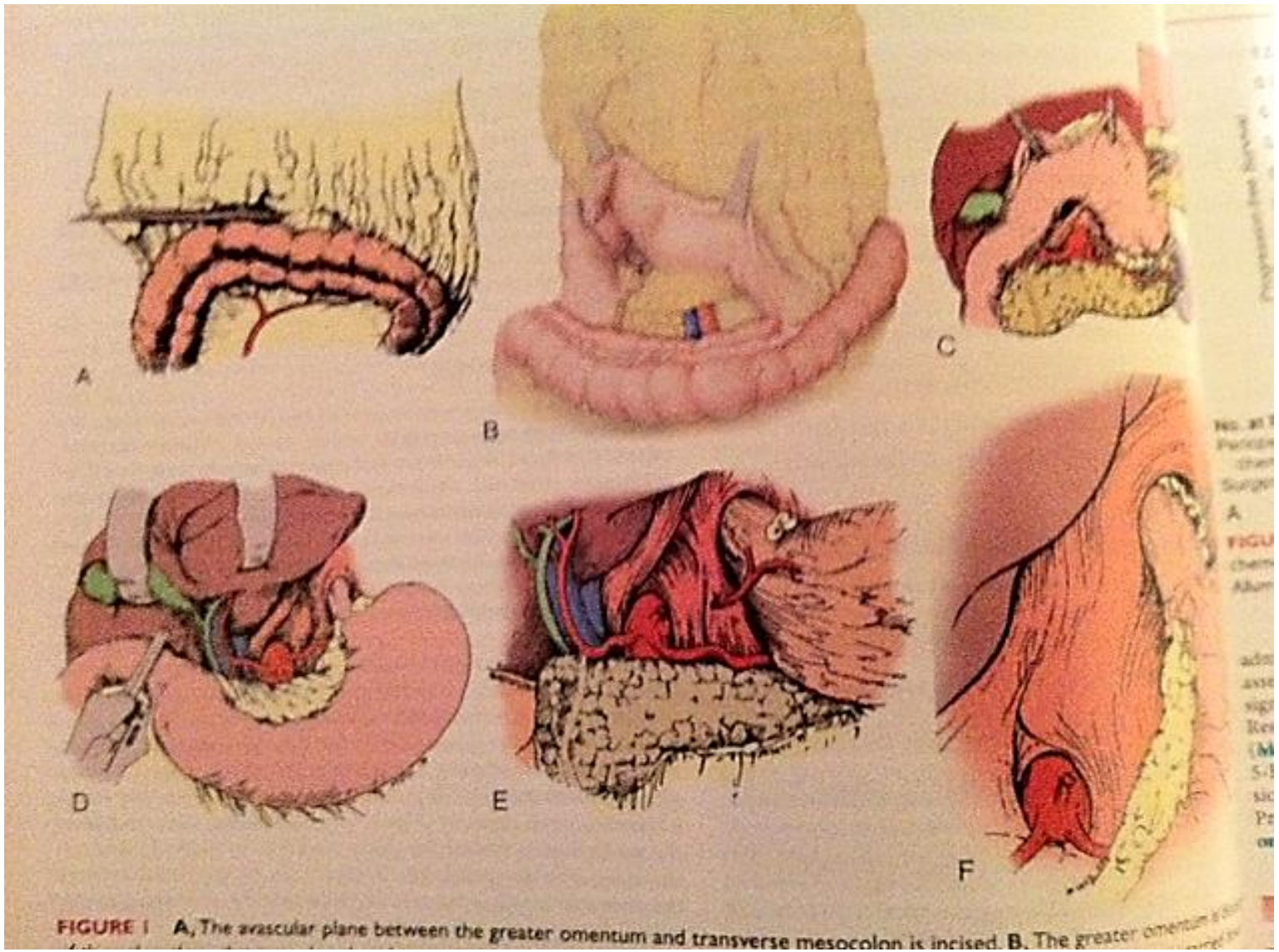


FIGURE 1 A, The avascular plane between the greater omentum and transverse mesocolon is incised. B, The greater omentum is reflected downwards to expose the transverse colon and its vessels. C, The greater omentum is reflected further to expose the transverse colon and its vessels. D, The transverse colon and its vessels are mobilized and prepared for resection. E, The transverse colon and its vessels are resected, with the remaining ends being ligated. F, The greater omentum is reflected back into its normal position.

Adjuvant Therpay

- Recurrence in 2 yrs. even after R0 resection
- Numerous trials for post op chemo with or without radiotherapy
- Recently Intergroup 0116 prospective trail showed improvement in both overall & relapse survival free (5FU & leucovorin +radiation)
- Criticism
- Recommendation was D2 resection
- BUT 10% had D2

Neo-Adjuvant Therapy

- In Inter group only 64% were able to post op chemo- radiation
- Neo- adjuvant therapy recommended for pt T2 or above
- So pre-op therapy develop lot of interest
- Down staging
- MAGIC

Summary

- Aggressive disease
- R0 resection optimize outcome
- Lymphadenectomy enhances staging and marginal benefit
- Optimum time for adjuvant therapy unknown
- Needs more research



Gastritis/ Duodenitis

- NSAIDs
- Alcohol
- Helicobacter pylori
- Can be severe
- Mostly self limiting
- Appropriate acid suppression therapy



- Early discharge

Oesophagitis

- GORD in 10% of cases
- Rarely severe
- Oral PPI

Treatment

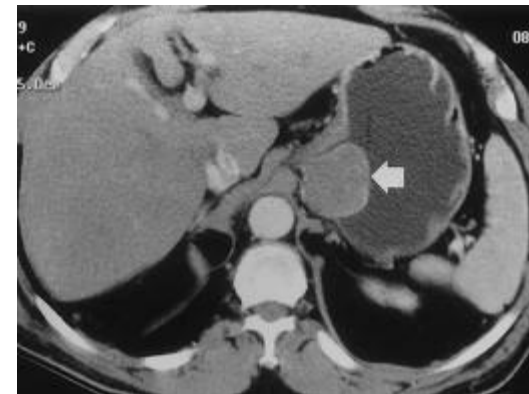
- Anti-secretory drugs also needed in addition to H. Pylori
- H₂ receptors antagonist
- Misprostol – inhibit acid & proteolytic enzymes
- PPI is more effective in gastric ulcer healing than H₂ receptors antagonist

***GASTROINTESTINAL
STROMAL TUMOURS***

Prof. N. J. Bandesha

History

- GIST most common mesenchymal-derived tumour of intestinal tract
- Rare overall
- 1% of all GI neoplasms
- 5000 cases /yr. in USA



Clinical Features

- Mean age of presentation is 60 yrs.
- Slightly more common in males
- Mostly sporadic few familial as well
- Vague abdominal pain and discomfort
- < 2cm found incidentally
- Mass
- G I Bleed in 25%
- Intestinal obstruction uncommon
- Lead point for intussusception
- Dysphagia & jaundice

Site & Metastasis

- Stomach = 60%
- Small bowel = 25-30%
- Oesophagus & rectum = 10%
- Colon & mesentery = rare
- Liver & mesentery most frequent sites of metastasis
- Lymph nodes metastasis very rarely

Diagnosis & Prognostic Factors

- Diagnostic challenge
- CT & MRI may show hyper vascular mass related to GI tract
- GISTs of stomach if large may be mistaken as liver tumour as haemangioma

Diagnosis & Prognostic Factors

- OGD & colonoscopy may show sub mucosal mass & less commonly ulcerated lesion mucosa disrupted
- FNA for stomach sensitivity of 70- 80% for diagnosis

Diagnosis & Prognostic Factors

- If endoscopic biopsy not feasible then percutaneous biopsy not advisable if diagnosis suspected by radiology
- PET may role in assessing metastasis
- But biopsy mostly performed if treating metastasis

Diagnosis & Prognostic factors

- Mitotic rate
- Tumour size
- Location of tumour

Treatment Primary GIST

- Careful staging
- At exploration careful examination of abdomen for peritoneal deposits & liver metastasis
- Avoid excessive manipulation
- Typically displace & not infiltrate - -- so limited resection of organ of origin needed
- But at inopportune location – OGJ, duodenum or distal rectum - -- enbloc resection may be needed

Treatment Primary GIST

- Lymph node or proximal mesenteric transection is not needed
- 1-2 cm margin needed
- Neo adjuvant therapy by Imatinib
 - especially for large GIST with extensive organ involvement, D, OGJ & Low rectal GISTs
- Follow up CT
- 3- 6/ 12 for first 5 yrs.
- Annually thereafter

Treatment

Recurrent & Metastatic GIST

- Peritoneum & liver most common places
- Rarely bone & lungs
- Median time of recurrence is 18-24/ 12
- Initial approach --- start Imatinib and assess response
- Same for pts. with initial metastasis
- Except minimal metastasis or symptomatic - - surgery may be considered
- 80% of pts. demonstrate partial response (50- 60%) or stable disease with Imatinib

Treatment

Recurrent & Metastatic GIST

- Peritoneum & liver most common places
- Rarely bone & lungs
- Median time of recurrence is 18-24/ 12
- Initial approach --- start Imatinib and assess response
- Same for pts. with initial metastasis
- Except minimal metastasis or symptomatic - - surgery may be considered
- 80% of pts. demonstrate partial response (50- 60%) or stable disease with Imatinib

Treatment

(Recurrent & Metastatic GIST)

- 2yrs survival is 70- 80% with Imatinib but was 40% in pre-Imatinib era
- Progression or resistance to disease– consider other interventions including surgery
- Multifocal disease – surgery not recommended
- Liver metastasis – radiofrequency ablation or hepatic artery embolization

