# Stomach and Duodenum

# Embriology and Anatomy

Part of foregut. •

Blood supply and drainage: •

Anatomy: •

Nerve supply: 1)Extrensic a)parasymp.(vagus) sens,motor,secretor. •
b)sympathtic(coeliac). •
2)Interensic a)myentric (Auerbach plexus). •
b)submucosal (Missener plexus).

Parts:

FUNDUS,BODY,ANTRUM,PYLORUS.

# Histology:

Stomach:
- 1-Pareital cell HCL,Intrensic factor.
- 2-chief cell pepsinogen.
- 3-Progenitor cell.
- 4-Mucous cell.
- 5-Endocrine cell. D(Somatostatine),G(Gastrine) and histamine.

Duodenum:
- 1-Mucous secreting gland.
- 2-Brunner gland.
- 3-Endocrine a)secretine dec.acid secretion.
  b)CCK GB contraction

# Investigations:

1-Flexible endoscope. Gastitis. Duodenitis,ulcer,bleeding OR therapeutic using diathermy or laser..Endo(US).

2-Contast study. Paraesophageal hernia,Linitis plastica,volvolus.

3-US conventional, laparoscopic or endoluminal.

4-CT, MRI Tumour, metastasis.

5-Laparoscpope.

6-Gastric acid secretion study.

7-Gastric motility study.

Congenital pyloric hypertrophy:

- Familial disease,more in male,4wks.
- Progectile vomiting after feeding and failure to thrive.
- DX: us
- Treatment:
  - -Resusctation.
  - -Ramestd operation(pyloric myotomy)

Duodenal atresia:

Cong.diphragm in duodenum curve. •

Same feature but bilious vomiting. •

DX. Double bubble apperance by X-Ray. •

Treatment: •

Duodeno-duodenostomy. •

# HELICOBACTER PYLORI

- Its gram negative ,helical shape bacteria .located in the submucosal layer of antrum.

- It secret urease enzyme which convert urea to amonia leading to stimulate gastrine secretion causing acid hyper secretion.

Its responsible for

- 1)chronic gastritis.
- 2)peptic ulceration.
- 3)gastric cancer.

# Investgations for H.Pylori.

INVASIVE: 1)Urease test.

2)Histology----Giemsa stain for antral biobsy.

3)Culture.

NON-INVASIVE: 1)Breath test—urea labelled.

2)Antibody isolation IgG

# Gastritis:Its an inflammation of gastric mucosa.

TYPES:1)type A,autoimmune against parietal cell—IF def, pernicious an.

2)type B,ass.H.pylori in antrum—intestinal metaplasia.

3)Reflux gastritis after gastric surgery.

4)Errosive gastritis NSAID.,Alcohol.

5)Stress gastritis due to mucosal ischemia, Burn.

6)Menetrier,s disease, premalignant dis. due to mucosal atrophy.

7)Lymphocytic gastritis, Infiltration by T-lymphocytes.

# PEPTIC ULCERATION

- It's a discontinuation of mucosal layer of stomach.
- Common sites:
  1) First part of duodenum.
  2) Lesser curve of stomach.
  3) Esoph, Meckels, Stomal ulceration.

- H.PYLORI----ACID SECRETION----MUCOSAL LAYER DEF.

Predisposing factors:

1-High acid secretion,(Z-E)syndrom. •

2-NSAID. •

3-Steroid. •

4-Helicobacter pylori. •

5-Blood group O. •

6-Cigarettes smoking. •

# Duodenal ulceration:

t’s the commenst type,more in male,in younger age group.

Usually involve the first part of duodenum pent-rate the muscular layer lead to fibrosis.

May be kissing in morphology.

Post. Ulcer usually bleed.But anterior one perfrate.

H.P  granulation tissues and end arteritis oblitrance.

# Gastric ulceration:

- Less common, more in male but in older age group.
- Carry risk of malignancy.
- Usually larger than in duodenum.
- Same histopathology lead to deformity of stomach due to fibrosis causing hour-glass shape.
- More in lesser curve than greater.
- Perforate posteriorly to pancreas or splenic artery or transverse colon causing bleeding or fistula.

# Clinical features:

1)Epig.pain,related to meal, intermittent. •

2)Periodicity. •

3)Vomiting, esp in deformity or stenosis. •

4)Alteration in weight. •

5)Bleeding. chronic or acute(malena,haemate- • masis).

# Investigations:

- ENDOSCOPY is the best for diagnosis and taking biobsy then for H.pylori isolation

# TREATMENT

SMOKING should be stopped in all types of RX •

Medical: •

1)Drugs which increase mucosal defence mechanism: •

Bismuth ,Misoprestol ,Sucralfate. •

2)Drugs which decrease acid secretion:High recurrence rate. •

Cimetidine, Ranitidine ,Famotidine. •

PROTON PUMP INHIBITOR: •

Omeprazole,esmoprazole,lansoprazole,Rabeprazole All carry recurence rate after healing within two weeks,BUT it's the golden drugs in treatment of ulcer caused by H.Pylori in the manner of eradication. •

# Eradication therapy:

Absence of H.Pylori by all investigations except serology at least one month after complete treatment.

INDICATIONS:

1-Non-NSAID ulceration.

2-Recurrence ulcer.

3-History of bleeding or perforation.

4-Considered for elective surgery.

# Contraindication of eradication therapy:

1-Ulcer from NSAID.

2-Stomal ulceration.

3-Z-E Syndrom.

4-Non ulcerative dysphagia.

Regimen:

| | | |
|---|---|---|
| Clarithromycin | Clarithromycin | Amoxicillin |
| Amoxicillin | Metronidazole | Metronidazole |
| Omeprazole | Omeprazole | Omeprazole |

ALL GIVEN FOR TWO WEEKS

Indications for surgery in peptic ulceration:

1-All complications.

2-Failure of medical treatment.

3-Compination of GU and DU.

4-Serious deformity.

5-Suspecion of malignancy;
- 1)Ulcer in greater curveture.
- 2)Positive cytology.
- 3)Longer history.
- 4)Age more than 60 y old.
- 5)Pernicious anaemia.

Types of surgery:

Duodenal ulceration;
- Billroth II
- Gastrojejuonostomy
- T.V and pyloroplasty

Gastric ulceration;
- Billroth I
- Billroth II
- Vagotomy and pyloroplasty and excision of ulcer.

# Complications of peptic ulcer:

A-Perforation: Male:Female 2:1 ,mostly NSAID. •

Clinical features: •

Hx of dyspepsia,sudden sever epigastric pain. •

Chemical peritonitis-(lucid period)-bacterial peritoniti •

Pyrexia,PR,Rigid abdomen,not move with respiration. •

Peforation sites depend on type of ulcer. •

RIF pain. •

# Investigations:

1-chest X-ray.  50% air under diphragm. •

2-Serm amylse enz.to exclude peritonitis. •

3-Water soluble contrast study. •

4-DPL. •

5-CAT. •

# Treatment:

- Surgery to sealed the perforation,then peritoneal toilet by NS and AB, then leaving a drain in the cavity.
- Taking abiobsy in GU.
- Antisecretory agent post op.

# B-Bleeding:

Its amajor medical emergency. •

Causes 1)ULCER 60% DU, GU, OES. •

2)Mucosal erosion. Oes, gas, due. •

3)Mallory-wiess syndrom. •

4)Oes varicies. •

5)Tumour, and other causes. •

# Managemant:

A-Resuscitation. Fluid,blood,ffp.

B-Diagnosis. OGD.

C-Definitive treatment acc to cause.

Indication of surgery in emergency case:

1-Spurting artery.

2-Visible vessel at the base of ulcer.

3-Clott at the base of ulcer.

# Indication of surgery after resuscitation:

1-Continous bleeding during resuscitation. •

2-Re-bleeding after first attack. •

3-Fitness of patient, more in young. •

4-Source of bleeding,post DU and chronicGU. •

# C-Gastric outlet obstrction:

- Its usually secondary to chronic ulcer or malignancy.
- Clinical features:
- Long HX of P.U, then loss of weight,repeated vomiting OE sucssession splash.
- Hyper chloraemic alkalosis leading to acid uria.
- TREATMENT:
- Isotonic saline,K supplement to restore acid ions then surgical repair.

# Gastric polyps:

IT CARRY RISK OF MALIGNANT CHANGES. •

TYPES: •

1-Metaplastic mostly ass. With H.Pylori. •

2-Inflamatory usually in fundus,ass.with PPI and FAP. •

3-Adenoma, malignant potential. •

4-Carcinoid, ass with pernicious anaemia. •

# GASTRIC CANCER

More in male,increase with age. •

Proximal, more in high SE class, no HX of H.Pylori infection. •

Distal, more in low SE class,ass with H.Pylori. •

PRMALIGNANT conditions in CA stomach: •

1)Chronic gastritis. •

2)Gastric atrophy. •

3)Intestinal metaplasia. •

4)Pernicious anaemia. •

5)Gastric polyp. •

6)Previous gastric surgery. •

# Clinical features:

ANAEMIA ASTHENIA ANOREXIA. •

Long HX of dyspepsia,unusual bloating,vomiting, loss •

Of wt. •

Metastatic symptom(Trousseau,s sign)and thrombo •

Embolic featuers. •

Investigations: •

OGD and biobsy. •

# Spreading:

1-Direct: muscular,serosa to pancreas,colon. •

2-Lymph.Permiation or embolization(Trosiers Sign). •

3-Blood born. Liver, lung, bone. •

4-Transperitoneal Ascitis. •

Rectal shelf tumour. •

Transcoilomic-Krukenberg. •

Umbilicus-Sister joseph nod •

# Treatment:

1-Surgery. •

2-Chemotherapy. CMF •

3-Radiotherapy. Esp. for bone metastasis •

- Gastric lymphoma.
- Trichobizoars.
- Volvulus of stomach.