

Gastroenterology & Hepatology – Dr. Taha

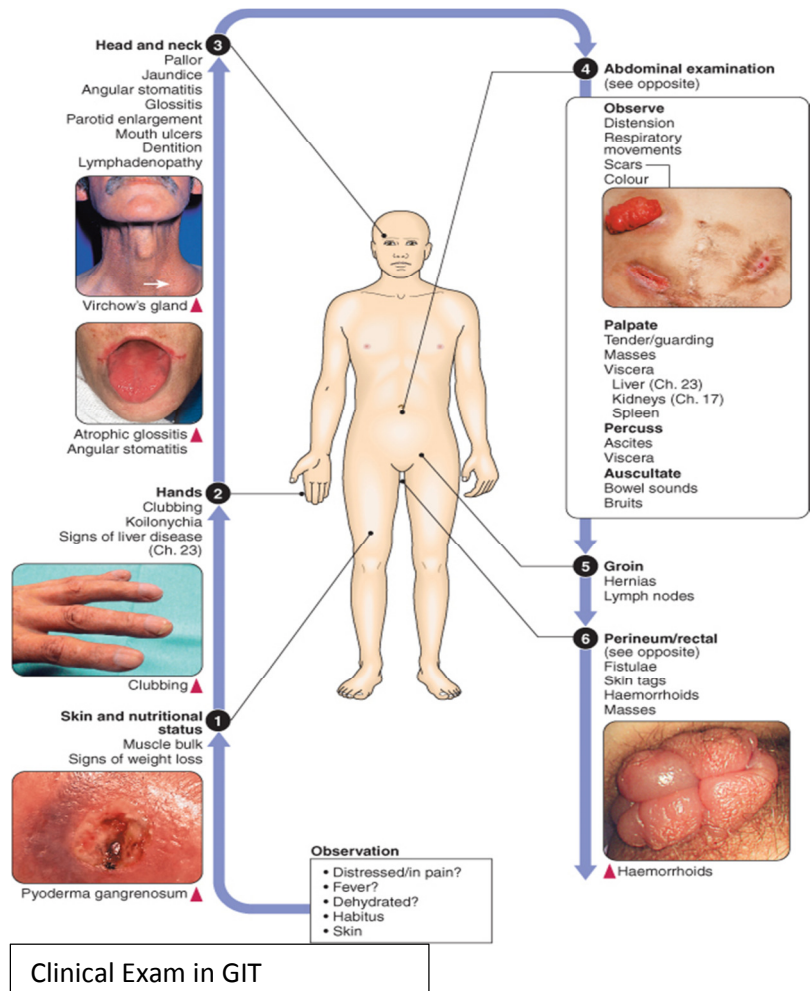
Introduction

GI Diseases:

- Major cause of morbidity & mortality.
- 10% of GP consultations are for indigestion.
- ¼ of GP consultations for diarrhea.
- Infective diarrhea is a major cause of ill health & death in developing countries.
- GIT is one of the most common sites for cancer.
- Major advances had occurred in the field of GE;
- PUD proved to be an infective condition due to HP & Nobel Prize had been given recently to its discoverer, Marshal.
- Molecular events in the CRC development had been discovered & from this effort became successful in its prevention by NSAIDs.
- GIT endoscopy made diagnosis of GIT diseases very easy.
- Therapeutic endoscopy made it possible to replace surgery for many GIT conditions as GI bleeding, bilairy stone removal & stenting, palliative cancer stenting, polyp removal, PEG & endoscopic mucosal resection.

GI symptoms:

- Dysphagia: difficult swallowing
- Odynophagia: painful swallowing.
- Aphagia: cannot swallow.
- Heart burn.
- Non cardiac chest pain.
- Regurgitation.
- Aerophagia: eructation.
- Hematemesis.
- Melena.
- Hematochesia: fresh bleeding per rectum.
- Dyspepsia: abnormal digestion.
- Anorexia.
- Flatulence.
- Alteration in bowel habits.
- Bleeding per rectum.
- Abd pain.



GI Diseases: Investigations

- Tests of structure.
- Tests of infection.
- Tests of function.

1. Tests of structure: Imaging

❖ Plain radiograph:

- Show gas within bowel for diagnosis of Int obst if there are dilated loops or fluid levels in the erect position.
- Soft tissue of the liver, spleen & kidneys & calcifications in these organs, pancreas, blood vessels, LNs, calculi.
- Chest XR in erect position show air under diaphragm in perforated viscus.

❖ Contrast studies:

- Barium & double-contrast barium using air with barium, will show filling defects, strictures, erosions & ulcers & even motility disorders if under fluoroscopy.

❖ Imaging

Contrast studies: uses & limitations.

Indications	Major Uses	Limitations
Ba swallow: Dysphagia, reflux, chest pain, motility disorder	Stricture, HH, GERD, Achalasia	Aspiration risk Poor mucosal detail No biopsy
Ba meal: Dyspepsia, epigastric pain, vomiting, anemia, perforation.	DU, GU, Gastric Ca, GOO, Gastric emptying disorder.	Low sensitivity for early cancer. No biopsy No HP assessment.
Ba follow through: Diarrhea, abd pain, Obst by stricture	Malabsorption. Chrons.	Time consuming. Radiation exposure.
Ba enema Abn bowel habit, Rectal bleeding, anemia, abd pain	Ca, diverticuli, stricture, megacolon.	Difficult in elderly. incontinance., No biopsy.

U/S, CT, MRI: Increasingly used for abd diseases, noninvasive & offer detailed images of abd contents.

Indications	Major Uses	Limitations
US:	Masses, abscess, organs, ascites, biliary dilation, gall stones, guided needle aspiration & biopsy.	Low sensitive for small ls. Little functional info. Operator dependent. Gass & obesity interfere with it.
CT:	Pancreatic dis, liver tumor deposits, tumor staging, vascular lesions.	Expensive, high radiation, may underestimate stage of cancers as esophagus.
MRI:	Tumor stage, MRCP, pelvic/perineal, chrons fistula.	Time consuming. Clusterphobia, role not fully established, limited availability.

❖ Endoscopy

- Endoscopy: UGI, LGI, Enteroscopy, ERCP, EUS, Double balloon endoscopy, capsule video endoscopy.
- Increasingly used for abd diseases, noninvasive & offer detailed images of abd contents.

Endoscopy: UGI: Indications:

- Dyspepsia sp > 45.
- Abd pain.
- Atypical chest pain.
- Dysphagia
- Vomiting.
- Wt loss.
- Acute or chronic GIB.
- Suspicious Ba meal.

Endoscopy UGI: Contraindications:

- Severe shock.
- Recent AMI, Unstable angina or arrhythmia.
- Severe resp dis.
- Atlanto axial subluxation.
- Suspected perforated viscus.
- These may be relative in experienced hands.

Endoscopy UGI: Complications:

- Cardiorespiratory depression due to sedation.
- Aspiration pneumonia.
- Perforation.
- Bleeding.
- SBE (needs prophylaxis in those at risk).

Colonoscopy: indications:

- Suspected IBD.
- Altered bowel habits.
- Rectal bleeding or anemia.
- Suspected abn Ba enema.
- CRC screening.
- Therapeutic procedure.

C/Is:

- Severe shock, Recent AMI, unstable angina & arrhythmias, Severe resp disease, Suspected perforation, severe active UC.

Complications:

- As for upper GI endoscopy.

❖ Biopsy

- Obtained through endoscopy or percutaneously & sent for histopath exam.
- Reasons for biopsy or cytological exams:
- Brush cytology of suspected malignant lesions.
- Histological assessment of mucosal abns.
- Diagnosis of infections (candida, HP, Giardia).
- Measure enzymes as disaccharidases.
- Analysis of genetic mutations as oncogenes, tumor suppressor genes.

2. Tests of infection: Bacterial cultures

- For identifying causes of diarrhea sp if acute or bloody.
- Causes of infective diarrhea:
- Viruses: Rota, adeno, entero, requires EM or viral cultures.
- Bacteria: Campylo jej, EC, Salmonella, clostridium difficile (ned toxine isolation).
- Protozoa: Giardia, ameba, cryptosporidium & moicrospora.

❖ Serology

- Sp for HP, Salmonella, hydatid liver & ameba.

❖ Radioactive breath tests

- For diagnosis for HP & small intestinal bacterial overgrowth.

3. Tests of function: blood tests for malabsorption

- S.B12, folic acid, iron, Ca, alumin, phosphate, stool fat, endoscopic DU biopsy.
- Tests for diagnosing fat, lactose, bile acids malabsorption.
- Tests of pancreatic exocrine function

❖ GIT motility

- Esophageal motility:
 - Eso manometry with 24hr pH monitoring: for diagnosing refractory GERD, achalasia & noncardiac chest pain.
- Gastric motility:
 - Assessment of gastric emptying in patients with gastroparesis, is best evaluated by radioisotope studies by a test meal of solid & liquid labeled with different radioisotopes.
- Small intestine transit:
 - Difficult & rarely needed.
 - Ba follow through can measure SI transit to reach TI(90 min).
 - Orocecal transit is measured by lactulose-hydrogen breathtest.
- Colonic & anorectal motility:
 - Assessed by anorectal manometry, EP tests, defecating proctography.
 - Plain Abd XR taken on day 5 after ingestion of different-shaped inert plastic pellets on day 1-3 gives estimate of whole gut transit time.
 - Help to diagnose chronic idiopathic constipation from mechanical or obstructed defecation.

❖ Radioisotope tests

- Gastric emptying study: by Tc.
- Urea breath test: by radioactive Carbon: for HP diagnosis as HP has urease which split radioactive urea into amonia & CO2 measured in the breath.
- Meckels sacn: TC.
- Labeled RBC scans FOR DETECTING BLEEDING.
- Labled WBC scan: for detecting infection or inflammation.
- Triolin test: C14 labeled trioliin: for fat malabsorption.
- Labelled albumin: to detect protein-losing enteropathy.