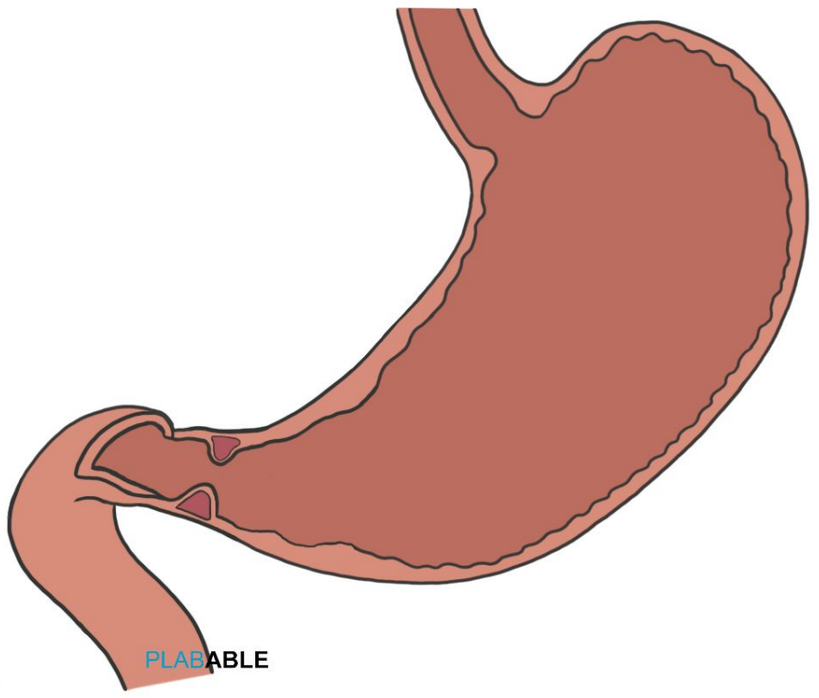
PLABABLE

GEMS

VERSION 4.7

GASTRO ENTEROLOGY



Acute Pancreatitis

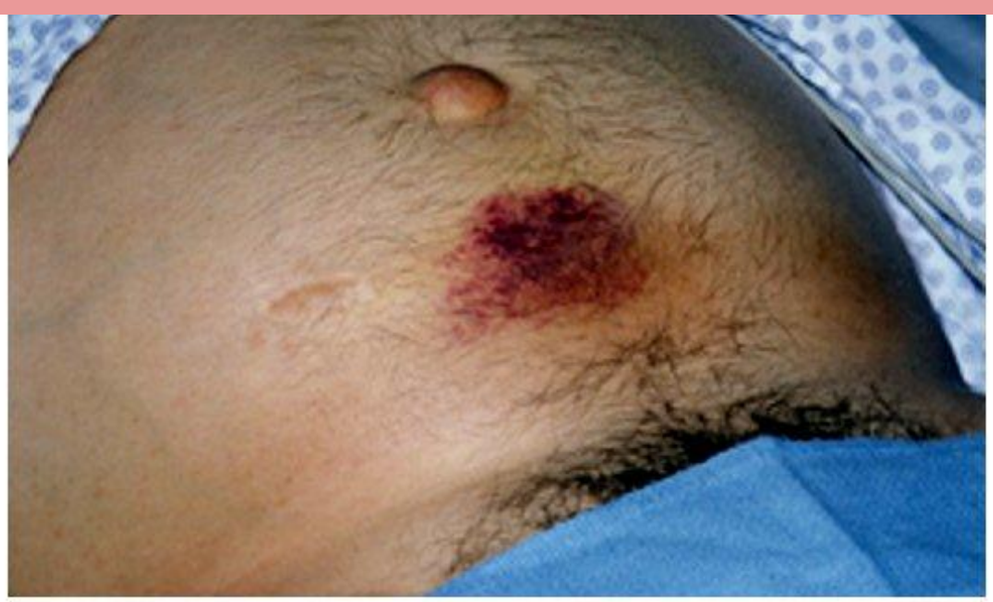
Presentation

- Upper abdominal pain that radiates to the back, relieved on sitting forward
- Tachycardia
- Vomiting
- Shock
- Periumbilical bruising (**Cullen's sign**)

Causes

- **B**iliary - Gallstones or periampullary tumour
- **A**lcohol
- **D**rugs - Thiazides, steroids, valproate, etc.
- **H**ypertriglyceride / Hypercalcemia
- **I**diopathic
- **T**rauma

The most important TWO risk factors that you MUST KNOW is → ***Gallstones and Alcohol***



Cullen's sign

Acute Pancreatitis

Investigations

- ↑ Serum amylase and lipase (>3 times the normal)
- CT scan with contrast

Lipase is more specific than amylase

Treatment

- IV fluids
- Nutritional support
- Pain killers
- IV antibiotics if severe
- Surgery only when pancreas is necrosed

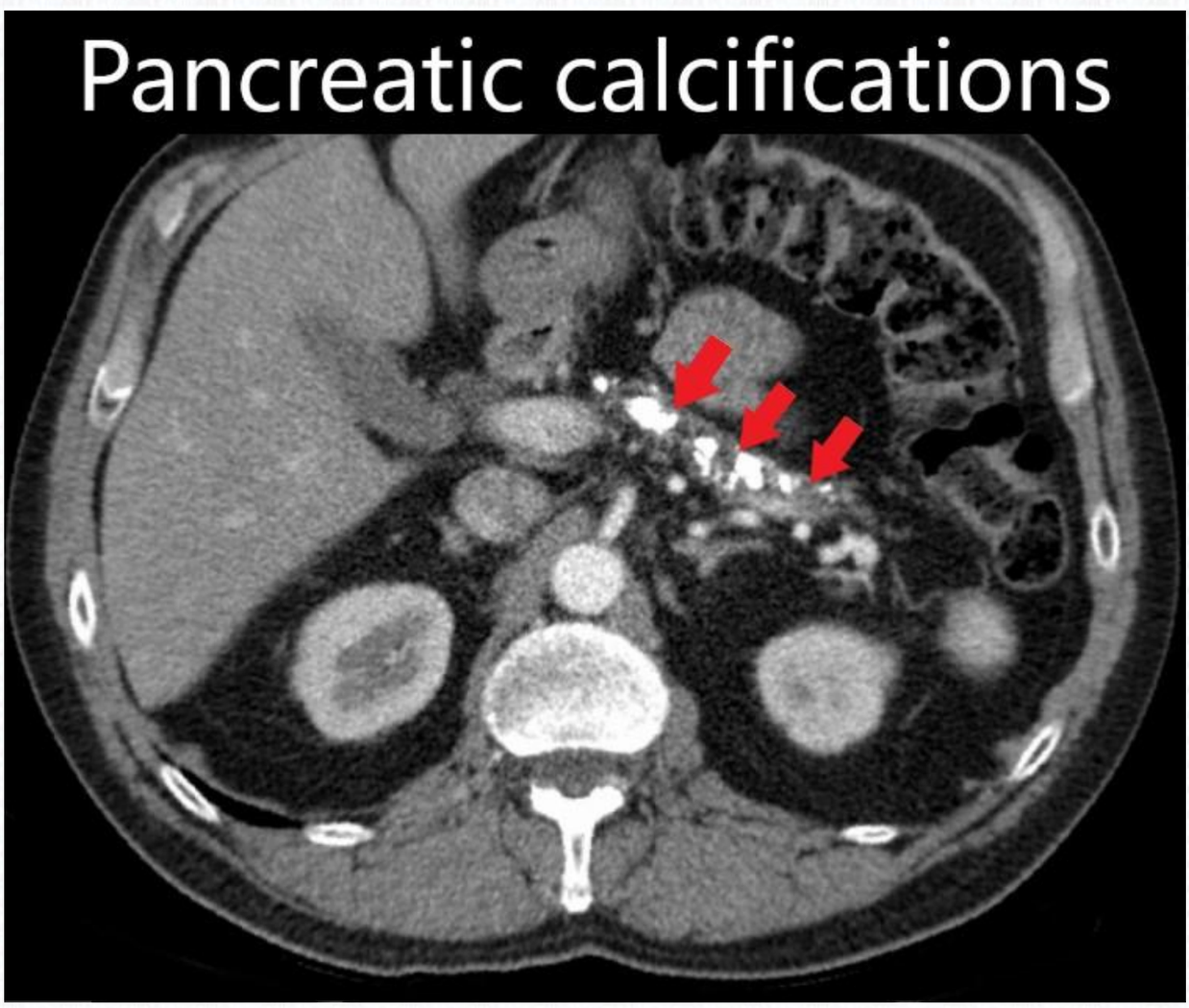
→ Switch to parenteral feeding if unable to tolerate oral feeds

Chronic Pancreatitis

Typically alcoholic or elderly

Presentation

- Longstanding episodic epigastric pain radiating to the back
- Steatorrhea → malabsorption → weight loss
- Diabetes mellitus



Chronic Pancreatitis

Investigation

- Faecal elastase → Low in exocrine pancreatic insufficiency *(A good test to pick in the exam if asked for investigation for a patient with symptoms of chronic pancreatitis)*
- Ultrasound abdomen → Perform when suspecting biliary disease
- CT abdomen with contrast → Pancreatic calcifications or atrophy

Serum amylase and lipase not as high as seen in acute pancreatitis (majority are normal) → *Don't pick this for the exam when thinking of chronic pancreatitis*

Treatment

- Analgesics
- Pancreatic enzyme supplements
- Fat soluble vitamins

Peptic Ulcer

Presentation

- Epigastric pain
- Nausea

Aetiology

- *H. pylori*
- NSAIDs
- Steroids
- Zollinger - Ellison syndrome
- Smoking and alcohol

Investigations

- H. pylori testing → C-13 urea breath test, stool antigen, serology
- Endoscopy

Triple therapy for *H. pylori*

- PPI (omeprazole)
- Amoxicillin
- Clarithromycin

Helicobacter Pylori Testing

Which test to pick for initial testing?

Stool antigen test

Serum antibody testing

Carbon-13 urea breath test

All equally acceptable and depends on local validation of these test. NICE does not give preference to any one of these test.

Stool antigen is the most used in primary care because it has the highest cost-effectiveness.

Serology has comparatively lower sensitivity and specificity.

Urea breath test is not as easy to perform.

Which test to pick for re-testing?

Carbon-13 urea breath test

Helicobacter Pylori Testing

Duodenal Ulcer

Refractory or recurrent symptoms

Urea breath tests should be arranged 6 to 8 weeks after starting initial eradication therapy in patients who have a proven duodenal ulcer who have refractory or recurrent symptoms.

If the urea breath test is not available

Then do a stool antigen test

Site of Absorption

Brain trainer:

Which nutrients are absorbed where in the small intestine and what is the significance of this?

➔ **Duodenum → iron**
➔ **Jejunum → most nutrients**
➔ **Ileum → bile salts + B12**

Diseases (e.g. Crohn's disease, coeliac disease) or surgery which affects these areas can give rise to the following:

➔ **Duodenum → microcytic anemia**
➔ **Ileum → megaloblastic anemia or gallstones**

Achalasia Cardia

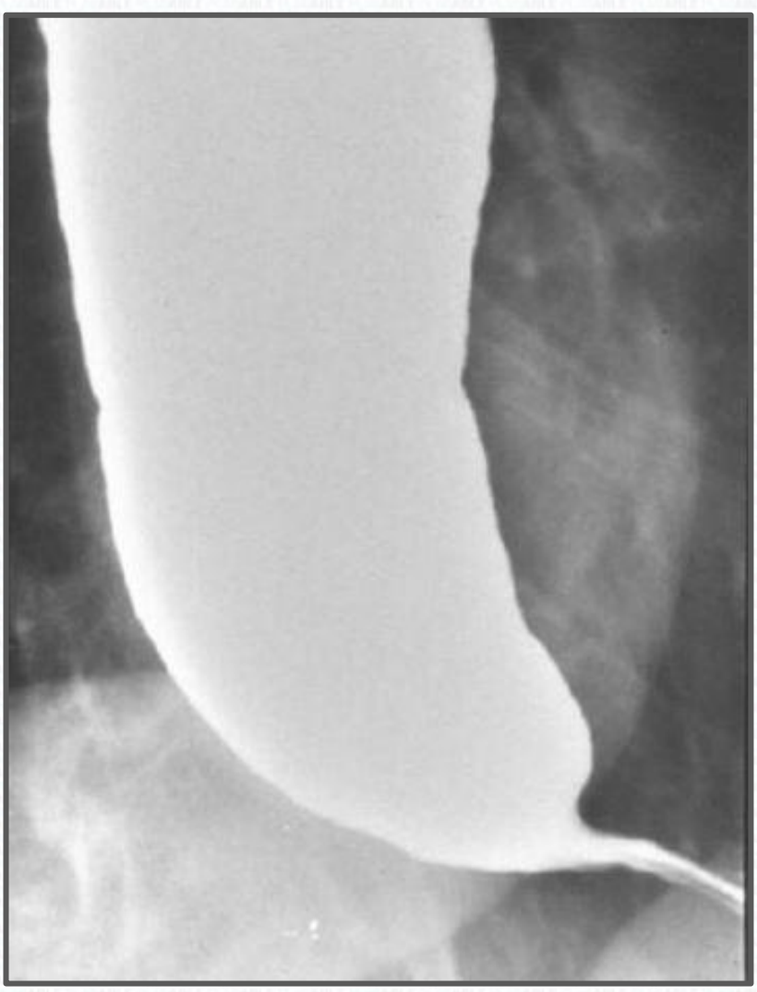
Inability to relax the lower oesophageal sphincter

Presentation

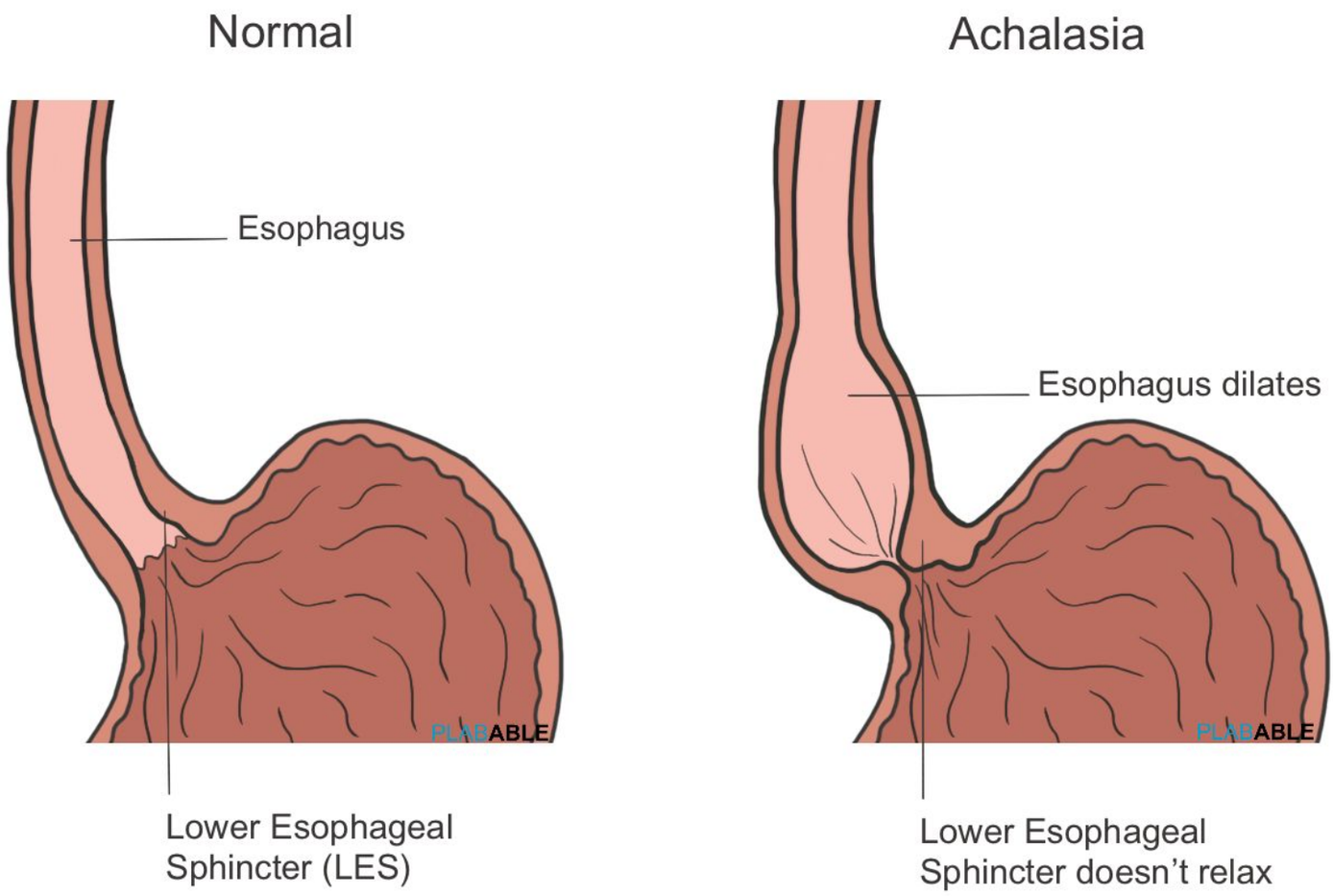
- Dysphagia - solids and liquids
- Regurgitation
- Retrosternal chest pain
- Weight loss

Investigation

- Barium swallow - Bird beak appearance (dilated oesophagus)
- **Manometry -** High resting pressure of LES



Achalasia Cardia



Complications

- Aspiration pneumonia
- Oesophageal cancer

Treatment

- Heller myotomy - treatment of choice
- Pneumatic dilation (if patient is unfit for surgery)
- Endoscopic injection of botulinum

Gastro-oesophageal Reflux Disease

Presentation

- Heartburn
- Acid regurgitation
- Chest pain (atypical)
- Dysphagia (late)
- Odynophagia (rare)

Investigations

- Diagnosis is usually clinical
- Endoscopy if red flags (bleeding, weight loss etc)
- 24hr pH (gold standard but rarely used)

Management

- Proton pump inhibitors
- Dietary changes (alcohol, coffee, spices)
- Weight loss + elevation of head in bed

Upper GIT Irritation

Brain trainer:

Which two medications can worsen oesophagitis and gastro-oesophageal reflux disease?

➔ **Bisphosphonates and NSAIDs**

Proctalgia Fugax

Brain trainer:

Severe recurrent rectal pain in the absence of any organic disease would suggest what diagnosis?

➔ **Proctalgia fugax**

This is a diagnosis of exclusion. Attacks may occur at night, after bowel actions, or following ejaculation. Anxiety is said to be an associated feature.

Barrett's Oesophagus

Squamous to columnar metaplasia of the lower oesophagus and it increases the risk of **adenocarcinoma**

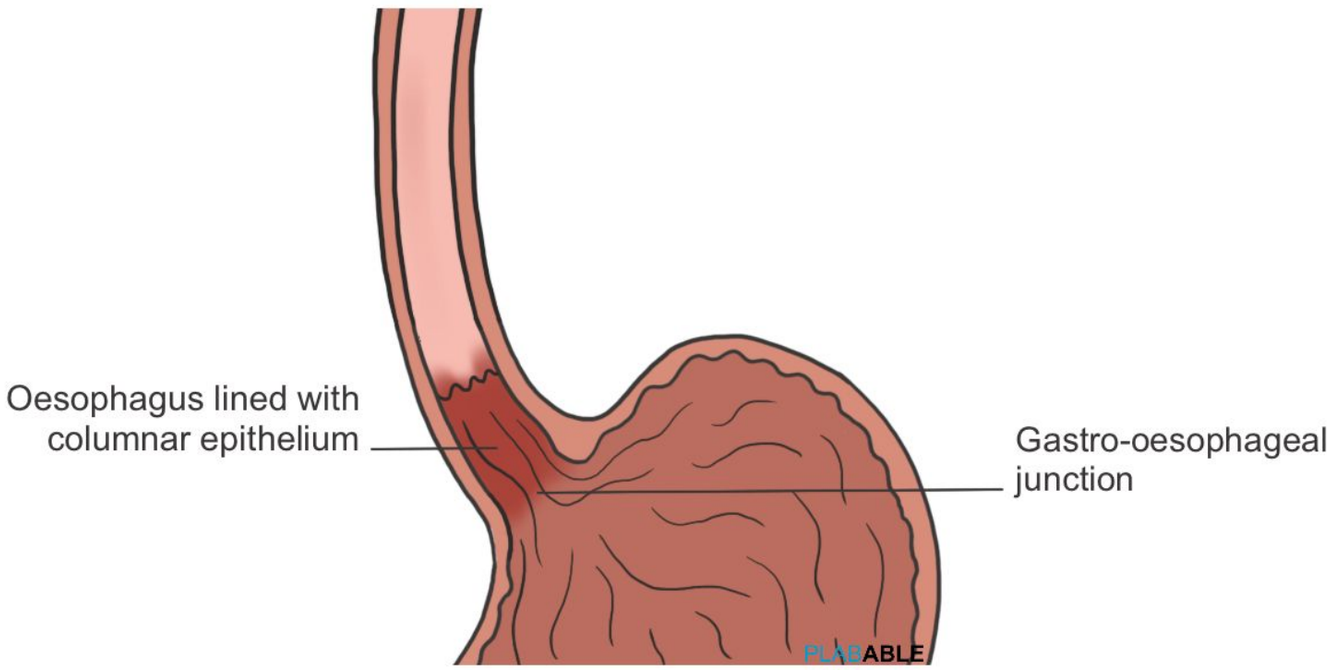
Causes

- Chronic GORD
- Hiatus hernia

Risk factors

- Smoking, obesity and alcohol

Barrett's Oesophagus

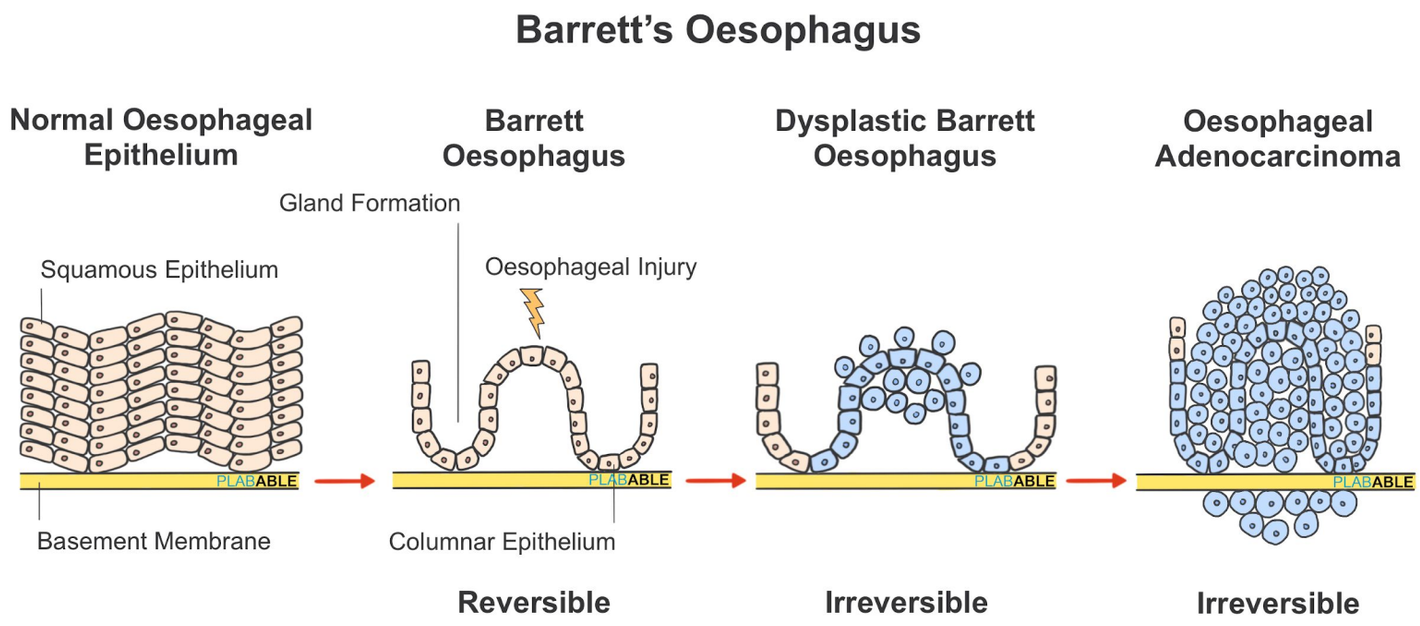


Barrett's Oesophagus

10% lifetime risk of developing into oesophageal adenocarcinoma

Treatment

- Most cases respond to PPIs
- If severe dysplasia then oesophagectomy



Diffuse Oesophageal Spasm

Uncoordinated oesophageal contractions

Presentation

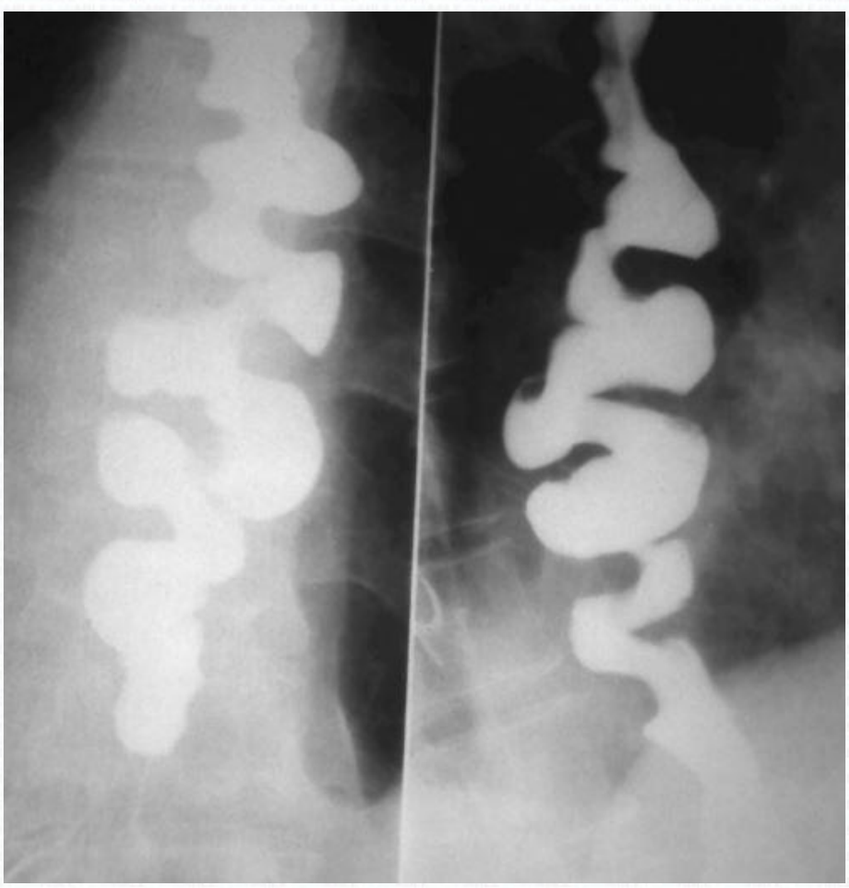
- Intermittent and unpredictable chest pain
- Dysphagia

Investigation

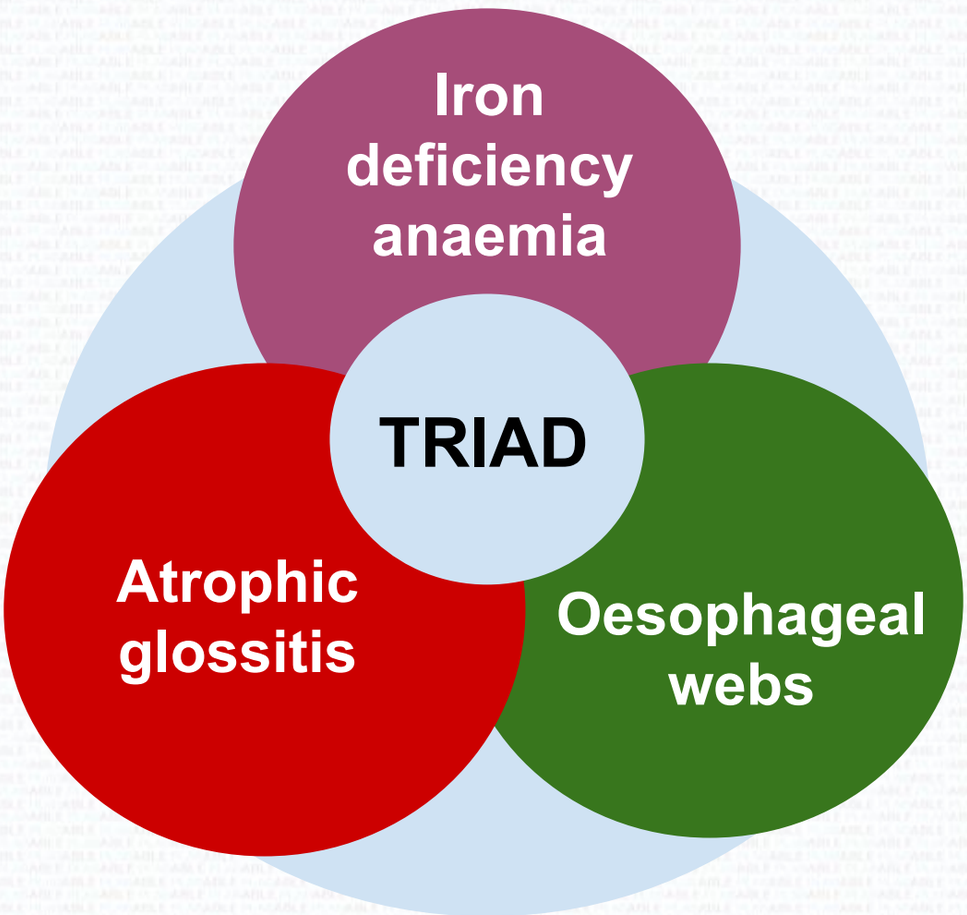
- Oesophageal manometry (preferred)
- Barium swallow - **Corkscrew** pattern

Treatment

- Nitrates
- Calcium channel blockers - nifedipine
- Botulinum toxin injection



Plummer-Vinson Syndrome



Presentation

- Painless intermittent dysphagia
- Solids followed by liquids
- Lethargy, tiredness and pallor

Treatment

- Oral iron replacement
- Endoscopic dilation for persistent dysphagia

Acute Cholecystitis

Presentation

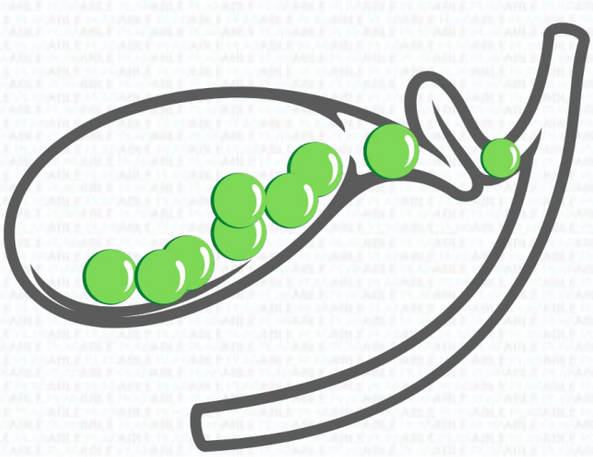
- Acute severe **right upper quadrant pain** or epigastric pain radiating to the right shoulder
- Nausea, vomiting and fever
- **Murphy's sign:** Pain on deep inspiration as the finger touches the inflamed gallbladder
- MC cause: Blockage of cystic duct by gallstone

Investigation

- Ultrasound abdomen

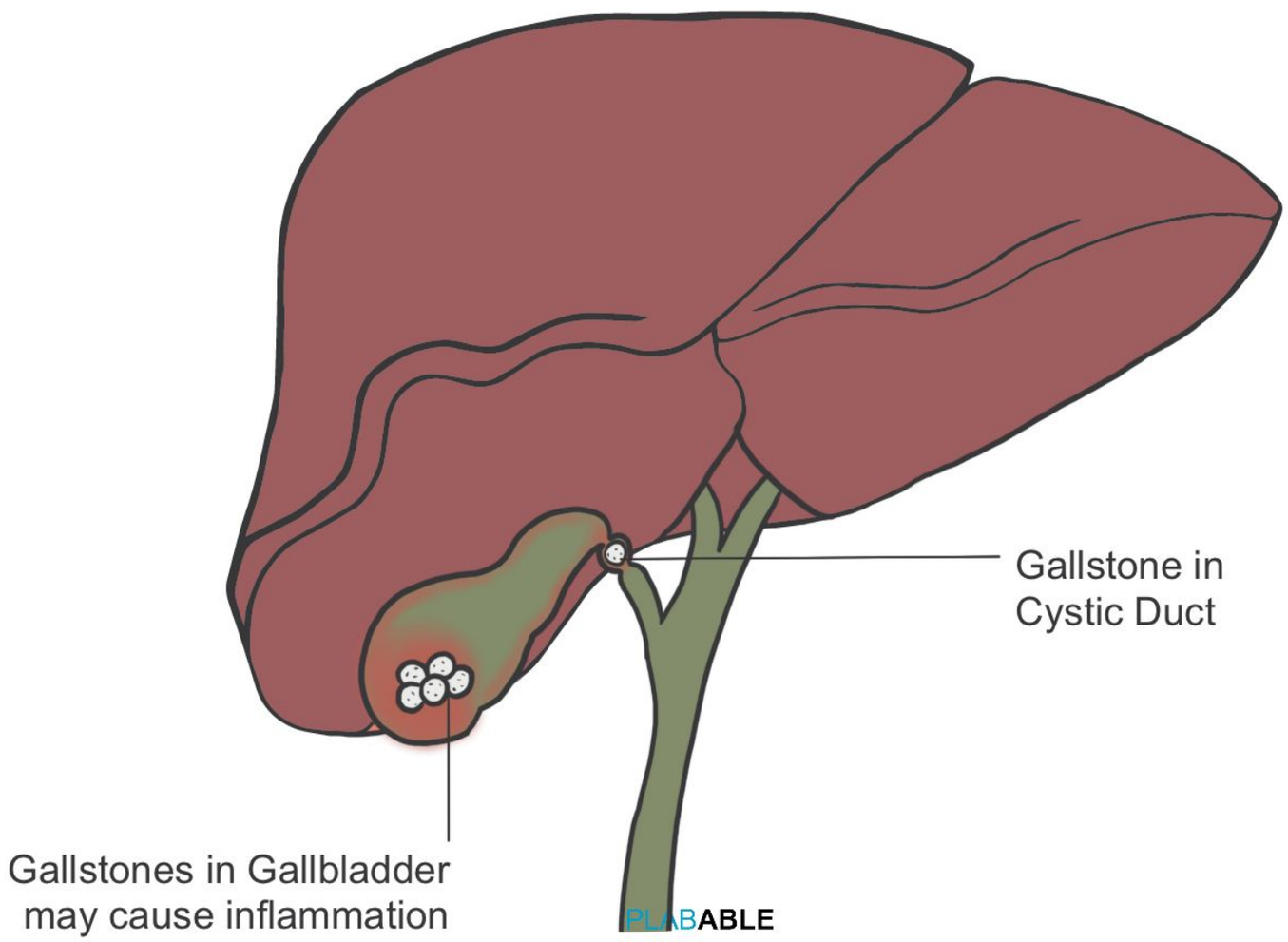
Treatment

- Laproscopic cholecystectomy



Note: Gallstone in asymptomatic patient - offer reassurance

Acute Cholecystitis



Acute Cholecystitis

Zenker's Diverticulum

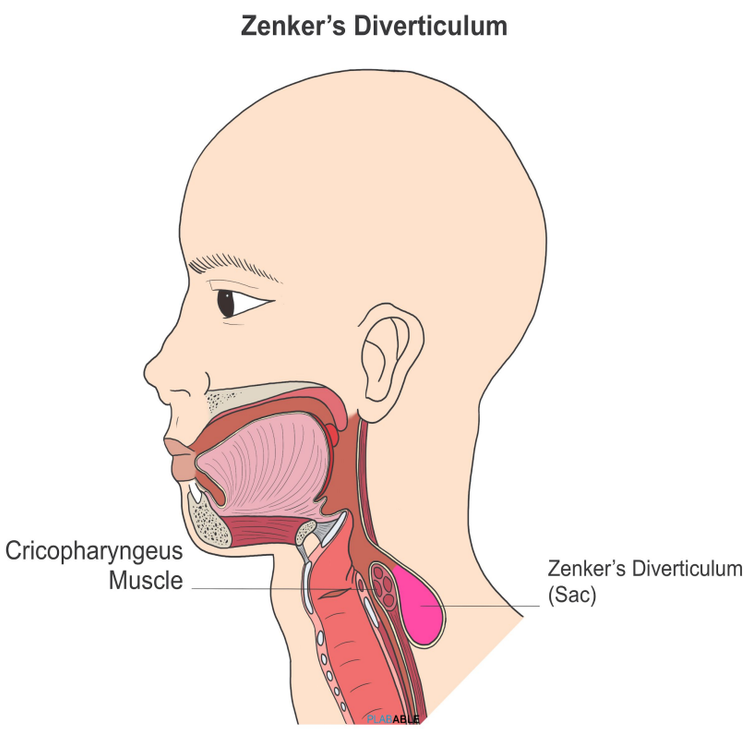
Pharyngeal pouch is a herniation in the inferior constrictor of the pharynx

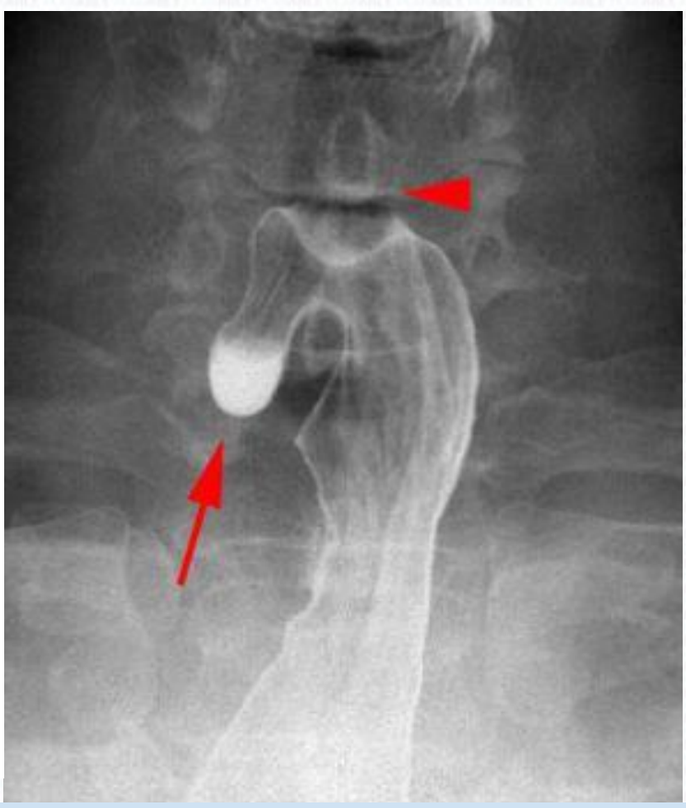
Presentation

- Dysphagia
- Regurgitation
- Halitosis
- Aspiration and chronic cough

Investigation

- Barium swallow - pool of contrast in the pouch





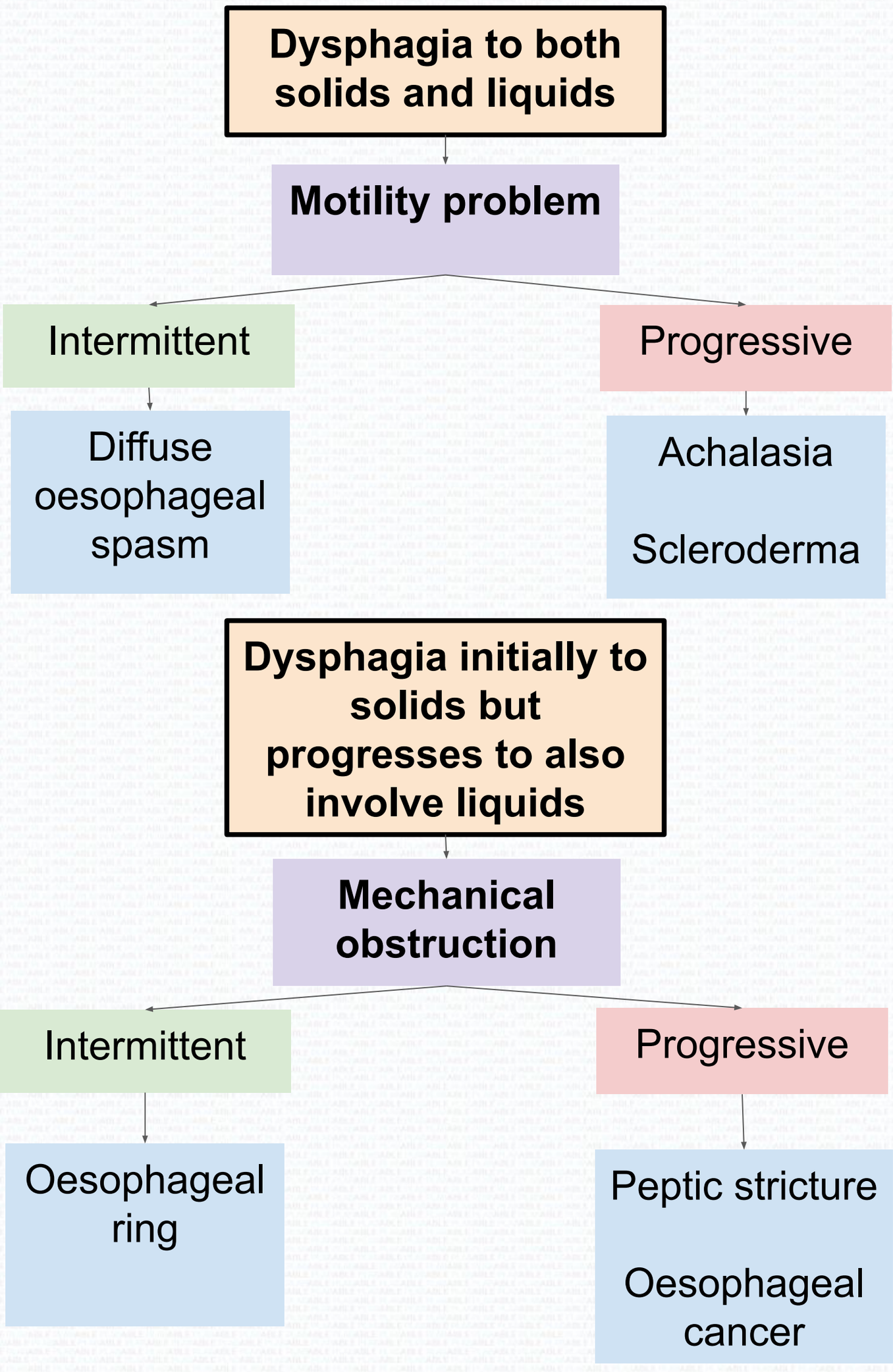
Treatment

- Surgery - **diverticulectomy**

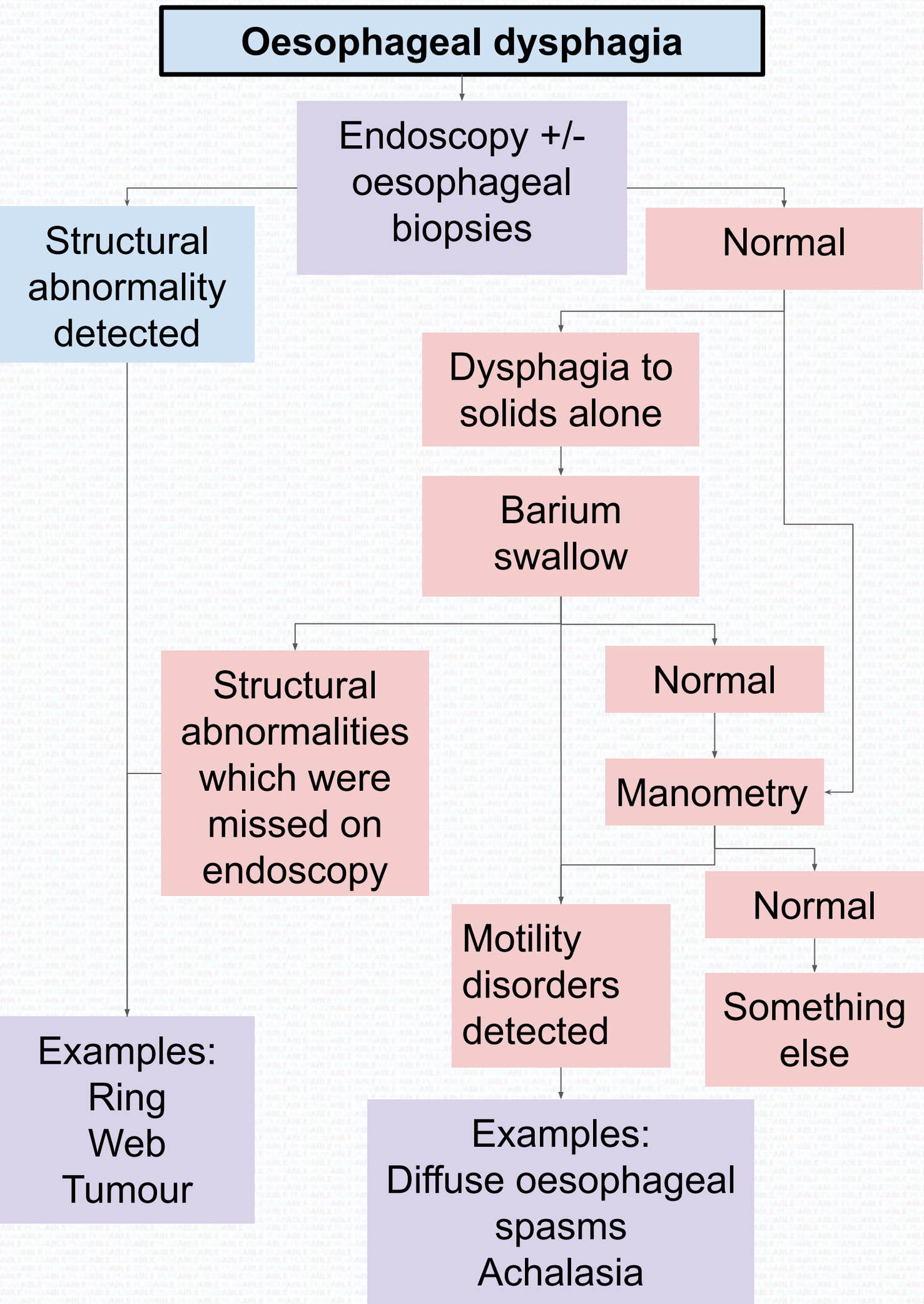
Dysphagia

Oesophageal cancer	• **Dysphagia - Solids first before liquids** • Weight loss • H/o smoking and alcoholism • Smoking → SCC • Barrett's → Adenocarcinoma • Stenting if inoperable to help with dysphagia
Achalasia cardia	• **Dysphagia - Solids and liquids** • Regurgitation of food • **Bird beak** appearance (barium swallow) • High resting pressure of LES (**manometry**)
Diffuse oesophageal spasm	• **Dysphagia - Solids and liquids** • **Corkscrew** pattern (barium swallow) • Intermittent abnormal peristalsis (**manometry**)
Zenker's diverticulum	• **Regurgitation** of food • **Halitosis** • Pouch seen on barium swallow

Dysphagia



Oesophageal Dysphagia Investigations

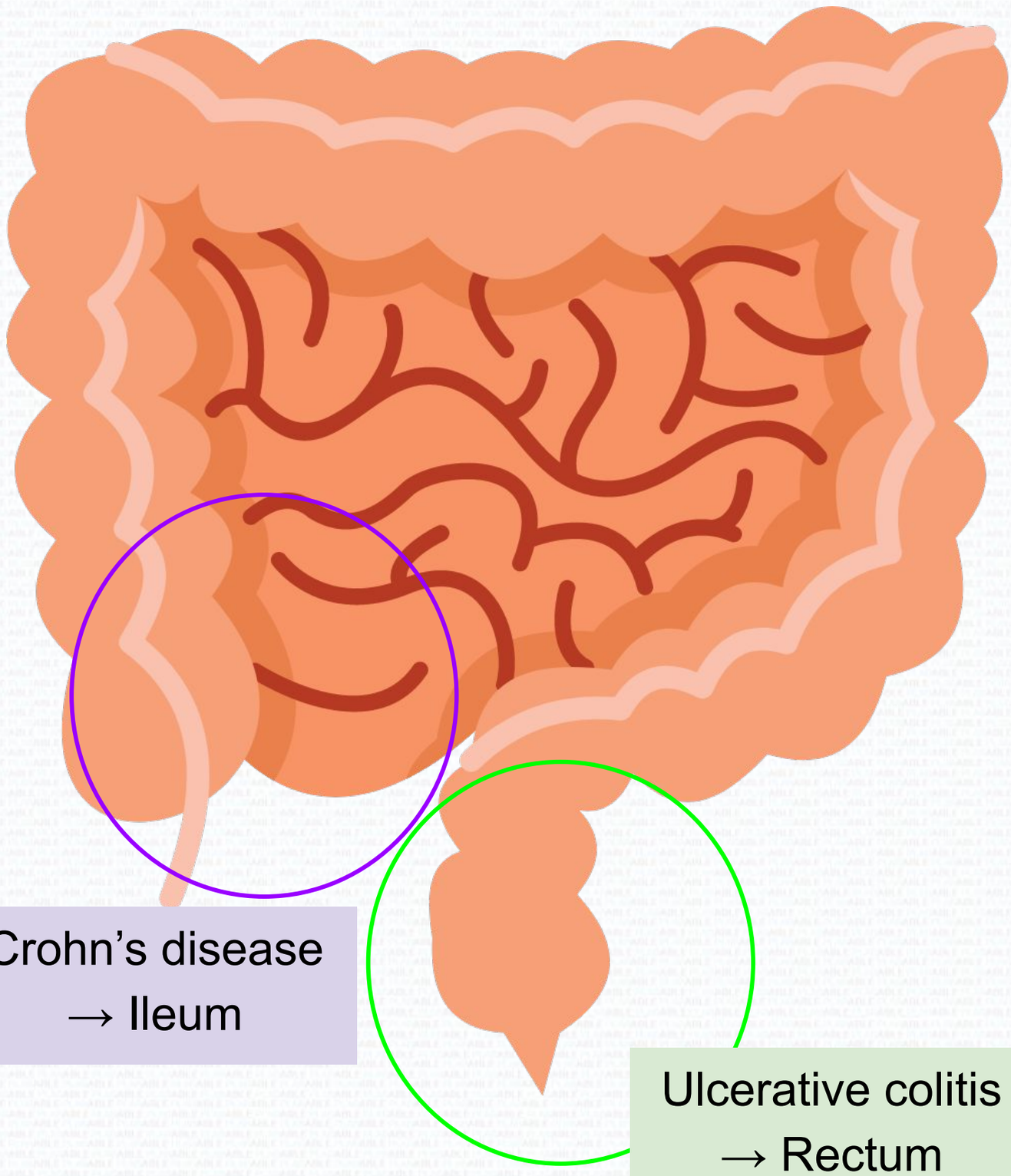


Crohn's vs Ulcerative Colitis

Crohn's disease	Ulcerative colitis
Skip lesions, anywhere in the GIT	Continuous lesions, only affecting the colon
Usually non-bloody diarrhoea	Bloody diarrhoea
Histology: Transmural ulcers and granuloma	**Histology:** Crypt abscess
Complications • Fistulas • Stricture • Colorectal cancer • Osteoporosis	**Complications** • Colorectal cancer • Toxic megacolon • Osteoporosis
Endoscopy: Cobblestone mucosa	**Barium enema:** Loss of haustral markings and drain pipe appearance
Treatment: • Glucocorticoid • Azathioprine or mercaptopurine • Infliximab and adalimumab	**Treatment:** • Mesalazine • Corticosteroids • Ciclosporin

Crohn’s vs Ulcerative Colitis

Most commonly affected place

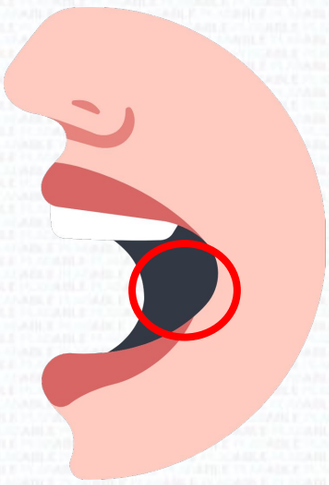


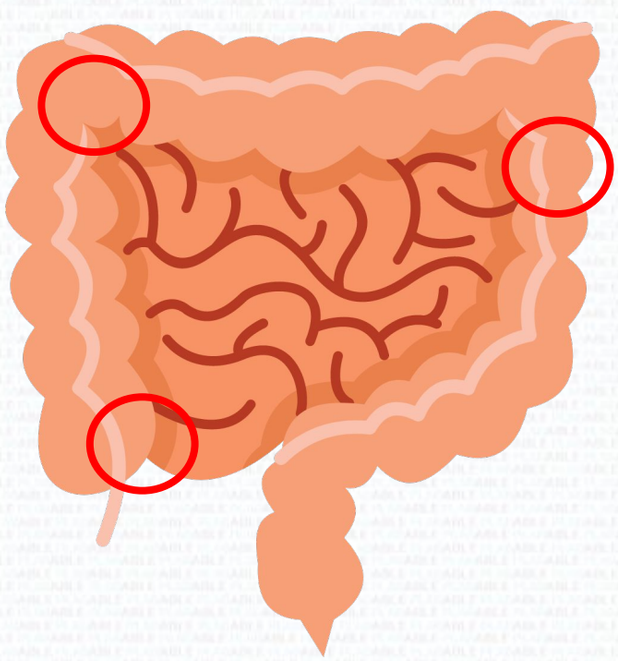
Crohn’s disease
→ Ileum

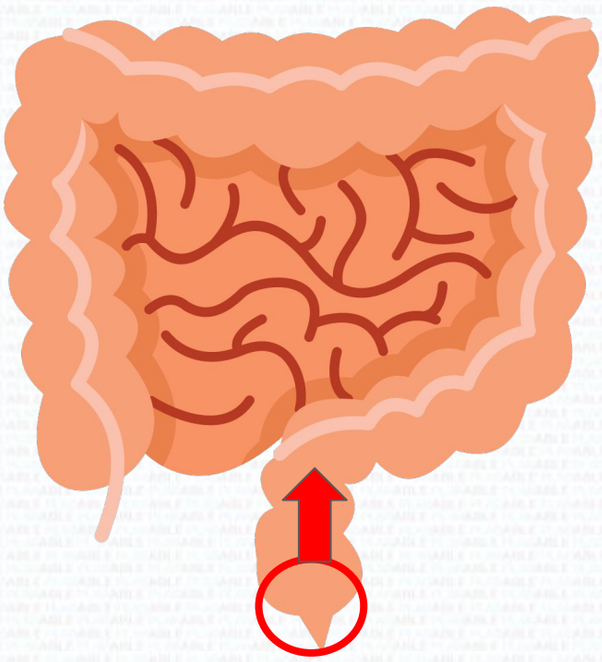
Ulcerative colitis
→ Rectum

Crohn’s vs Ulcerative Colitis

Location of disease



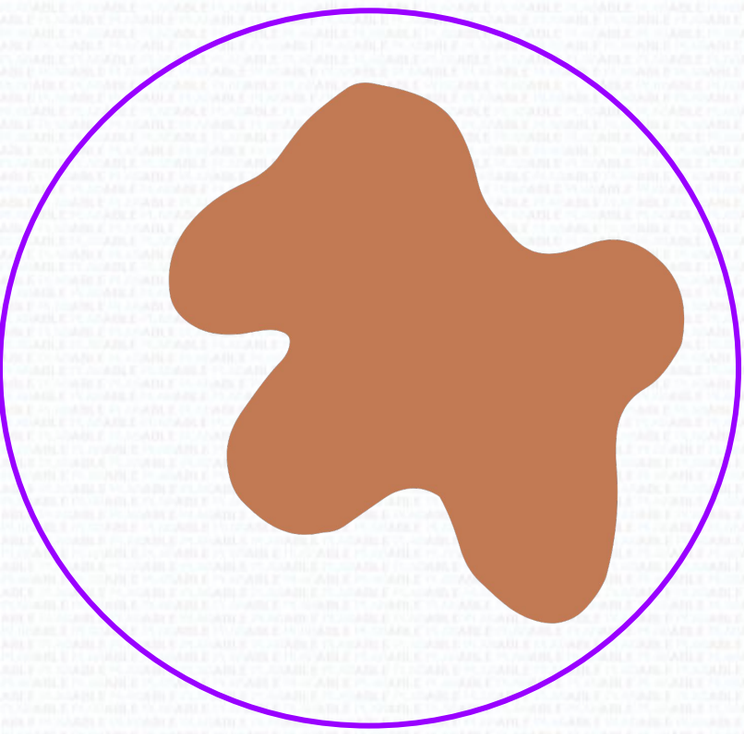


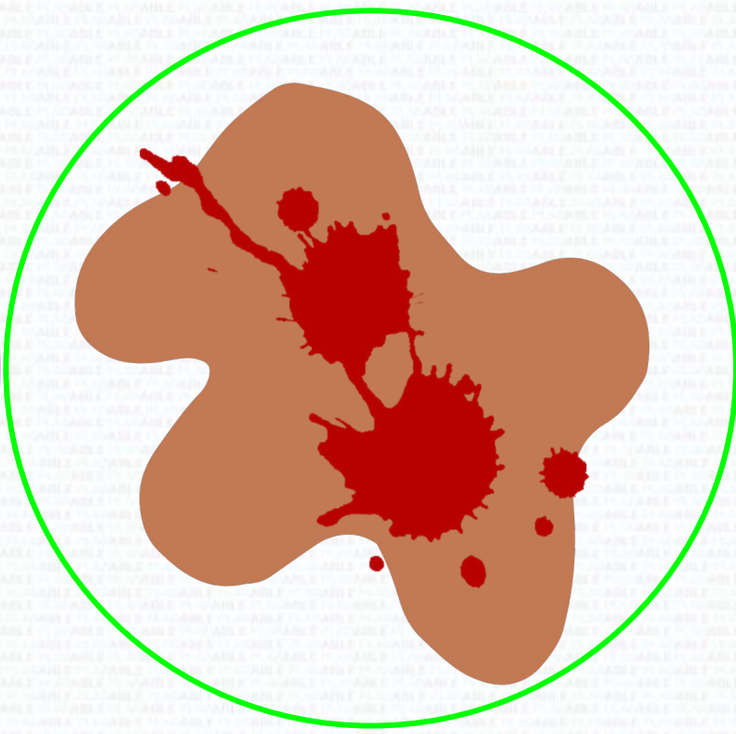


Crohn’s disease
→ Mouth to Anus

Ulcerative colitis
→ Colon starting from rectum

Crohn's vs Ulcerative Colitis





Crohn's disease

Typically non-bloody diarrhoea *(of course bloody diarrhoea can also occur)*

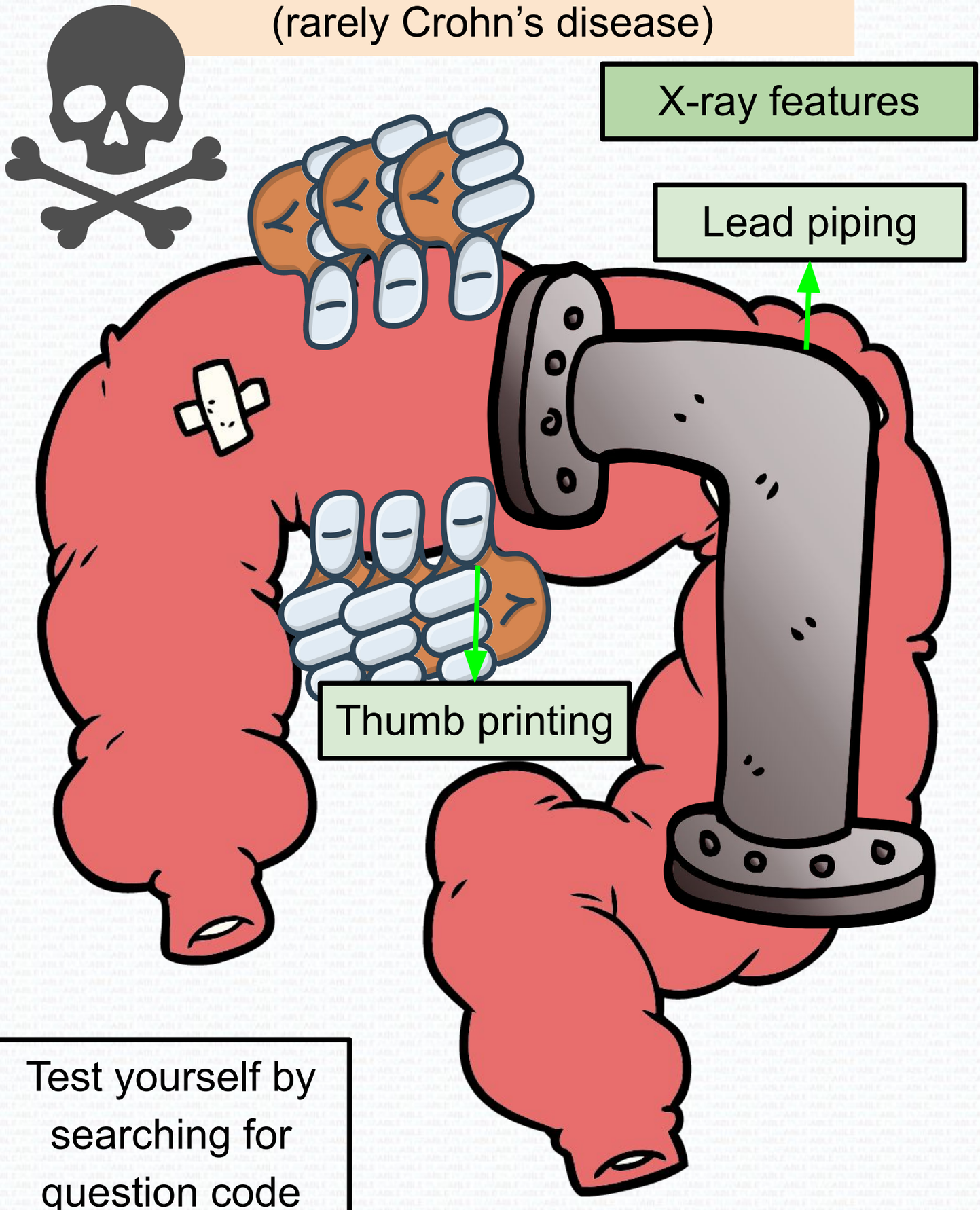
Ulcerative colitis

Typically bloody diarrhoea

Crohn's vs Ulcerative Colitis

TOXIC MEGACOLON

A complication of **ulcerative colitis**
(rarely Crohn's disease)



Test yourself by searching for question code EM 2050

Crohn's Disease

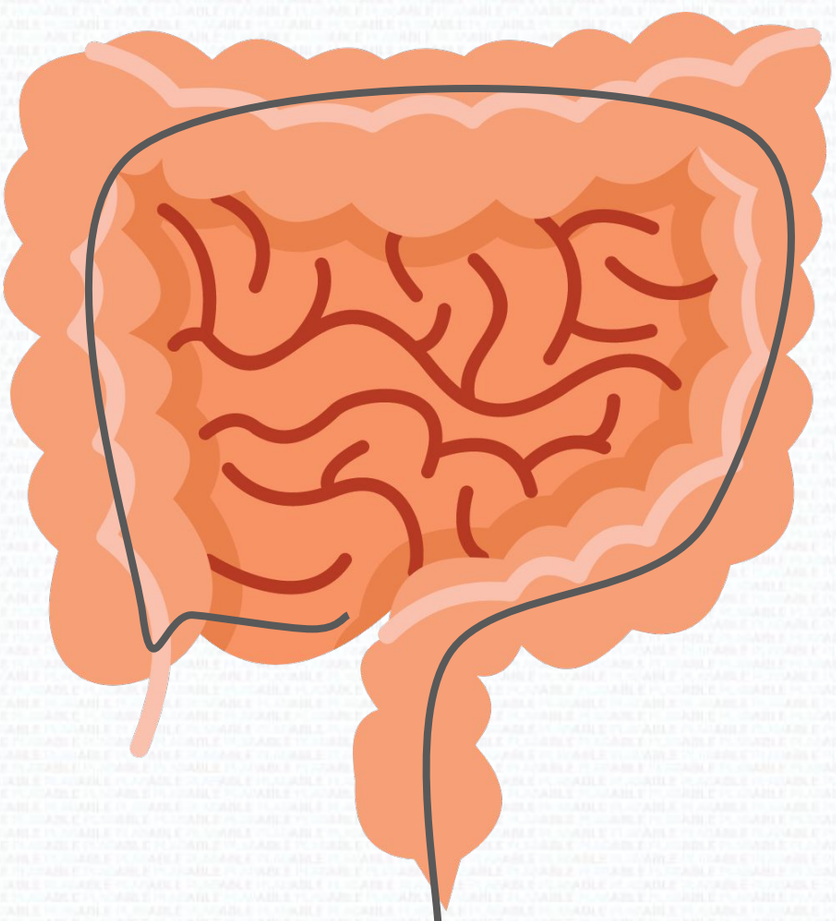
Important points

- Diarrhoea
- Fever
- Tenderness at right lower abdomen *(ileitis)*
- Mass at right lower abdomen *(abscess)*

Faecal calprotectin → Differentiates inflammatory bowel disease from irritable bowel syndrome

Colonoscopy → Best diagnostic test

CT scan → If patient develops an abscess



Irritable Bowel Syndrome (IBS)

Consider if any of these 3 symptoms lasting more than 6 months:

- Abdominal pain or discomfort
- Abdominal bloating
- Change in bowel habits

Other key features:

- Pain worse after eating
- Pain better after defecation
- Passage of mucus rectally

Overlapping Symptoms of IBS and IBD

Symptoms that overlap between irritable bowel syndrome and inflammatory bowel disease

Diarrhoea
Increased stool frequency
Abdominal bloating
Abdominal pain

The exam would have to give you certain clues to differentiate between IBS and IBD. Some examples that would lean you towards picking **IBD** as your answer.

Bloody diarrhoea → Especially ulcerative colitis

Severe diarrhoea

Weight loss → Especially Crohn's disease

Right iliac fossa pain → Especially Crohn's disease

Positive faecal calprotectin

Zollinger-Ellison Syndrome

Gastrinoma → excess gastrin → multiple and refractory peptic ulcers in the distal duodenum and proximal jejunum

Presentation

- Epigastric pain
- Gastrointestinal bleeding due to erosion
- Chronic diarrhea
- Associated with **MEN1**

Investigation

- Fasting serum gastrin
- Endoscopy to look for ulcers
- CT scan to locate tumour

Treatment

- Surgical resection of the tumour
- PPIs

Hereditary Haemochromatosis

Autosomal recessive disorder causing increased absorption of iron resulting in iron overload

Presentation

- Arthropathy
- **Bronze skin**
- **Hepatomegaly → cirrhosis → HCC**
- **Cardiac** - Arrhythmias or cardiomyopathy
- **Neurological**:
  - Impaired memory
  - Depression
- **Endocrine**:
  - Diabetes mellitus
  - Impotence
  - Amenorrhea

Investigations

- ↑ Transferrin saturation
- ↑ Serum ferritin
- Genetic testing (HFE gene)

Treatment

- Phlebotomy
- Liver transplantation (cirrhosis)

Autoimmune Hepatitis

Presentation

- Fatigue
- Pruritus
- Jaundice
- Amenorrhoea
- Associated with other autoimmune disorders especially of thyroid

Investigations

- Anti-smooth muscle antibody
- LFT
- Liver biopsy

Treatment

- Prednisolone + azathioprine

Drug Induced Hepatitis

Brain trainer:

A 65 year old alcoholic woman with severe pneumonia is treated IV co-amoxiclav. She now has elevated bilirubin, and massive elevations of ALP and AST. What is the diagnosis?

➔ **Drug-induced hepatitis**

Villous Adenoma

Brain trainer:

A patient with a 2 week history of watery mucinous diarrhea after endoscopy is diagnosed with villous adenoma. What metabolic disturbances would you expect?

➔ Hypokalemia, hypoproteinemia

The mucous which a villous adenoma secretes is rich in protein and potassium.

Villous Adenoma

Villous **A**denoma

↓

Causes loss of **P**rotein
and **P**otassium

Memory tool

Have you seen our new **APP**?
It is called **V**

Primary Biliary Cirrhosis

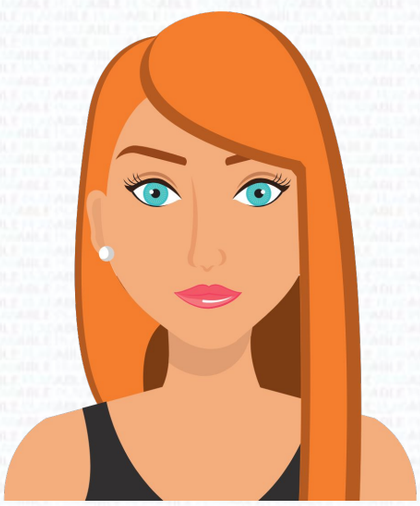
3M

- Anti-**M**itochondrial antibodies
- **M**iddle-aged Female
- Ig**M**

Presentation:

- Pruritus - Skin excoriations
- Jaundice
- ↑ Alkaline phosphatase
- Associated with **Sjogren's syndrome, coeliac disease, thyroid disease, scleroderma (autoimmune disease)**

FEMALE PREDOMINANCE
Ratio of women to men = 9:1



Memory tool:
Women's
***B**reast*

*P**B**C*

Treatment

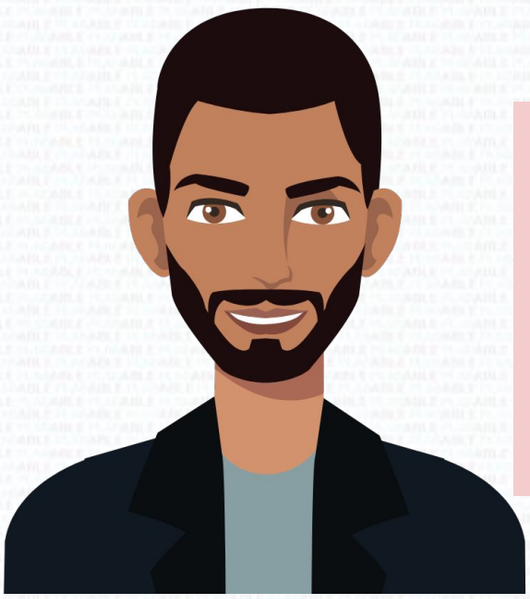
- Ursodeoxycholic acid
- Cholestyramine

Primary Sclerosing Cholangitis

Presentation:

- Pruritus - Skin excoriations
- Jaundice
- ↑ Alkaline phosphatase
- Associated with **Ulcerative colitis**

MALE PREDOMINANCE
Ratio of men to women = 7:3



Memory tool:
Men's
***S**tick*

*P**S**C*

Treatment

- Supportive (e.g. cholestyramine reduces the itch)
- Liver transplant for end-stage disease

Gilbert's Syndrome

Autosomal recessive disorder due to ↓ UGT enzyme causing unconjugated hyperbilirubinemia

Features

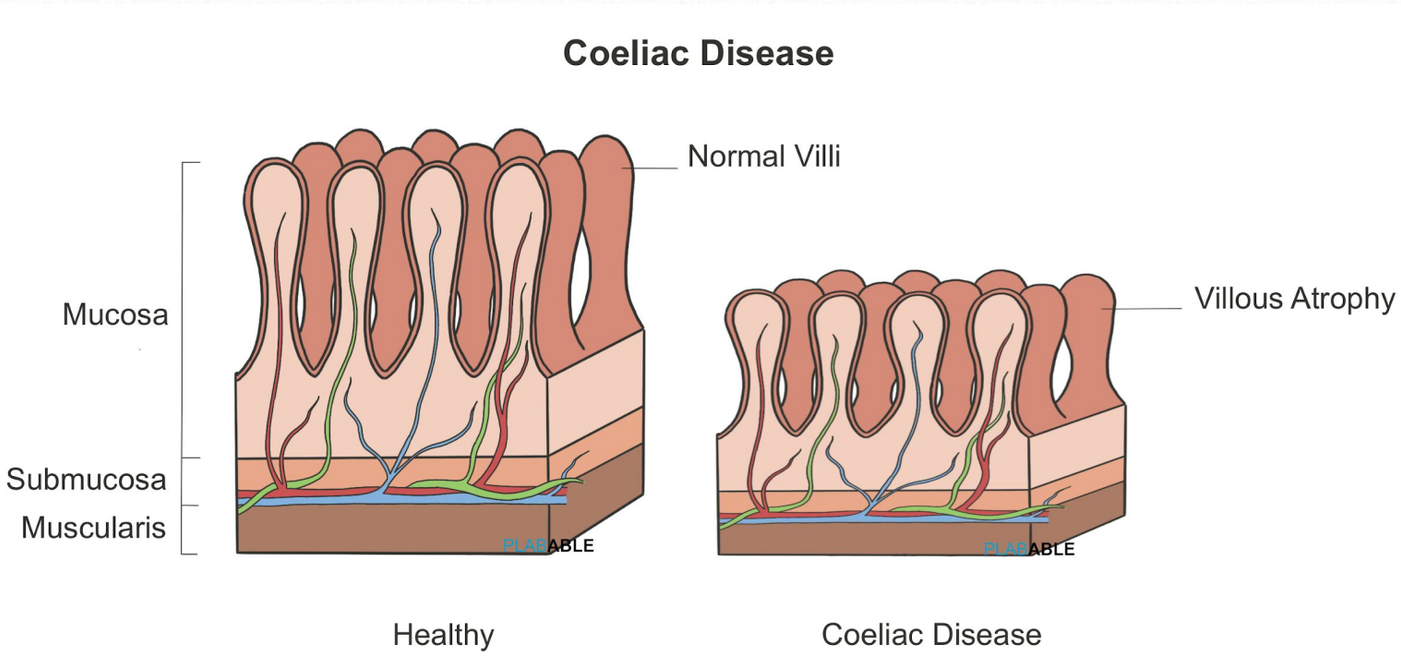
- Jaundice with stressors:
  - Infection
  - Surgery
  - Dehydration
  - Fasting
- Mild ↑ unconjugated bilirubin
- Normal reticulocyte and LFT
- Symptomatic management

Coeliac Disease

Malabsorption syndrome due to inflammatory response to gluten present in wheat, rye and barley

Presentation

- Chronic or intermittent diarrhoea
- Fatty stools - Steatorrhoea
- Abdominal distension and nausea
- Chronic fatigue and weight loss
- Malabsorption of vitamins and minerals - Most commonly iron, folate and Vit B12
- Skin manifestation - **Dermatitis herpetiformis** (commonly seen on extensor aspects)



Coeliac Disease

Investigation

- Tissue transglutaminase antibody - tTG (IgA)
- Anti-endomysial antibody (IgA)
- Duodenal or jejunal biopsy (confirmatory)
  - Villous atrophy
  - Crypt hyperplasia
  - Increased intraepithelial lymphocytes

Management

- Gluten free diet

Note

- For the tests to be accurate the patient should still be having gluten in diet
- If patient already on gluten free diet, gluten should be reintroduced for at least 6 weeks before testing

Serological Testing For Coeliac Disease

Suspected coeliac disease

↓

Total IgA and IgA tTG tested as first choice

↓ ↓

Weakly positive/ equivocal

↓

Request IgA endomysial antibodies

IgA deficient

↓

Request IgG tTG

Ascending Cholangitis

Charcot's triad

- Fever
- Right upper quadrant pain
- Jaundice

Along with hypotension and mental confusion called as **Reynolds' pentad**

Causes

- Gallstones causing obstruction
- Post ERCP
- Bile duct stricture
- Tumours such as pancreatic cancer

Investigation

- Contrast-enhanced CT (most accurate method)
- Ultrasound abdomen
- Blood culture

Treatment

- Fluid resuscitation
- Broad spectrum IV antibiotics
- Endoscopic biliary drainage

Gastroenteritis

Watery diarrhoea:

- **Traveller's diarrhoea** - watery diarrhoea caused by *E.coli*
- **Rotavirus** - watery diarrhoea in children
- **Giardiasis** - watery diarrhoea, malabsorption, abdominal pain, bloating, weight loss
  Rx: Metronidazole
- **Staphylococcus:** diarrhoea immediately after a meal - preformed toxin
- **Cryptosporidiosis** - watery diarrhoea in HIV and other immunocompromised patients
  Rx: Nitazoxanide and HAART

Bloody diarrhoea:

- **Campylobacter** - Guillain-Barre syndrome
- **E.coli** - Haemolytic uraemic syndrome
- **Salmonella** - Poultry
- **Amoebiasis**

Pseudomembranous colitis (*Clostridium difficile*)
Diarrhoea after antibiotic (clindamycin or amoxicillin)
Rx: Oral Metronidazole or Vancomycin

Abdominal Migraine

Brain trainer:

A child presenting with recurrent abdominal pain with episodic headaches but no abnormal finding on examination and investigation. What is the most likely diagnosis and how is this condition managed?

➔ **Abdominal migraine**
➔ **Reassurance**

Liver Cirrhosis With Ascites

Brain trainer:

What is the management for a patient with liver cirrhosis with ascites ± fever?

➔ **Cirrhosis → spironolactone**

<u>If fever present:</u>

➔ **Investigation → ascitic fluid aspirate analysis**

➔ **If high neutrophils in aspirate → IV antibiotics**

Pernicious Anaemia

Autoimmune atrophic gastritis causing B12 deficiency

Features

- Megaloblastic anaemia
- Paraesthesia
- Numbness
- Subacute combined degeneration (severe B12 deficiency)
- Associated with other autoimmune diseases such as Hashimoto’s disease, type 1 DM, vitiligo and hypoadrenalism

Investigation

- **Intrinsic factor antibody** (high specificity)
- **Schilling test** (to measure B12 absorption)

Treatment

- Hydroxocobalamin (IM)

B12 Deficiency

Brain trainer:

What is the most common cause of vitamin B12 deficiency in the United Kingdom ?

➔ **Pernicious anaemia**

Lack of intrinsic factor secretion in the stomach results in poor absorption of B12 in the ileum.

Other causes of B12 deficiency:

- Veganism
- Total gastrectomy (lack of intrinsic factor)
- Ileal resection
- Crohn’s disease
- Chronic pancreatitis
- Coeliac disease

Chronic GI bleeding

Brain trainer:

A 55 year old man presents with abdominal discomfort. He has long standing rheumatoid arthritis and takes methotrexate regularly and naproxen twice daily for his pain. His Hb is seen to be low and his MCV is low. What is the likely cause of his laboratory findings?

➔ **Chronic GI bleed**

The clincher here is abdominal discomfort which implies bleeding. If there was no option of a chronic GI bleed (or iron deficiency), then pick anaemia of chronic disease which for rheumatic disease usually produces microcytic anaemia.

Acute GI bleeding

Melena (black, tarry stools)

If haemodynamically compromised

If Hb low acutely

Start with intravenous fluids

Start giving packed red blood cells

After resuscitation do an **urgent GI endoscopy**

Decompensated Liver Disease

Causes

- Chronic alcoholism
- NAFLD and NASH
- Chronic hepatitis B and C
- Haemochromatosis
- Wilson's disease
- Alpha-1-antitrypsin deficiency

Presentation

- Jaundice
- Confusion
- Haematemesis
- Distended abdomen - Ascites
- Flapping tremor
- Palmar erythema
- Caput Medusae

Wilson’s Disease

Brain trainer:

A child with elevated liver enzymes and slow deterioration in school performance. On examination there is hepatosplenomegaly, intention tremor, dysarthria, and dystonia. What is the diagnosis?

➔ **Wilson’s disease**

Decompensated Liver Disease

Investigations

- ↑↑ AST and ALT
- GGT ↑↑ in alcoholics
- ↓ Albumin
- ↑ PT/INR
- **Transient elastography (fibroscan)**

Complications

- Variceal bleeding
- Spontaneous bacterial peritonitis
- Hepatic encephalopathy

Management of hematemesis

- ABC with replacement of blood / fluids
- Terlipressin
- Endoscopic band ligation or sclerotherapy

Oesophageal and Gastric Cancer

It is important to remember when to refer for an urgent oesophago-gastro duodenoscopy (OGD)

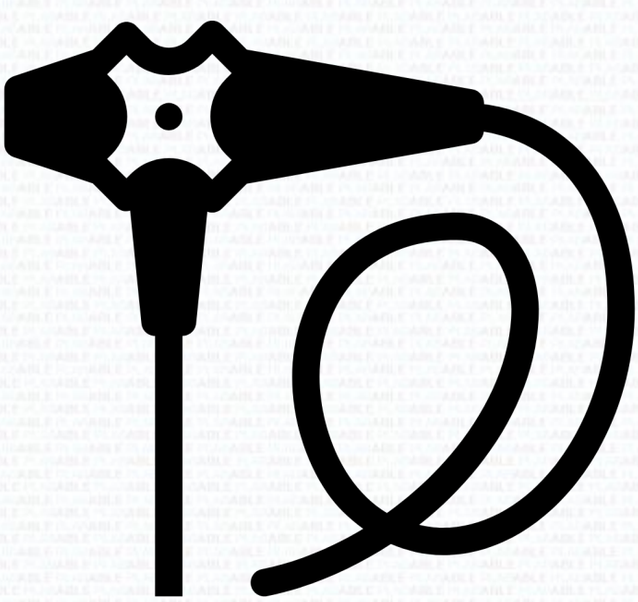
URGENT UPPER GI ENDOSCOPY IF

Dysphagia

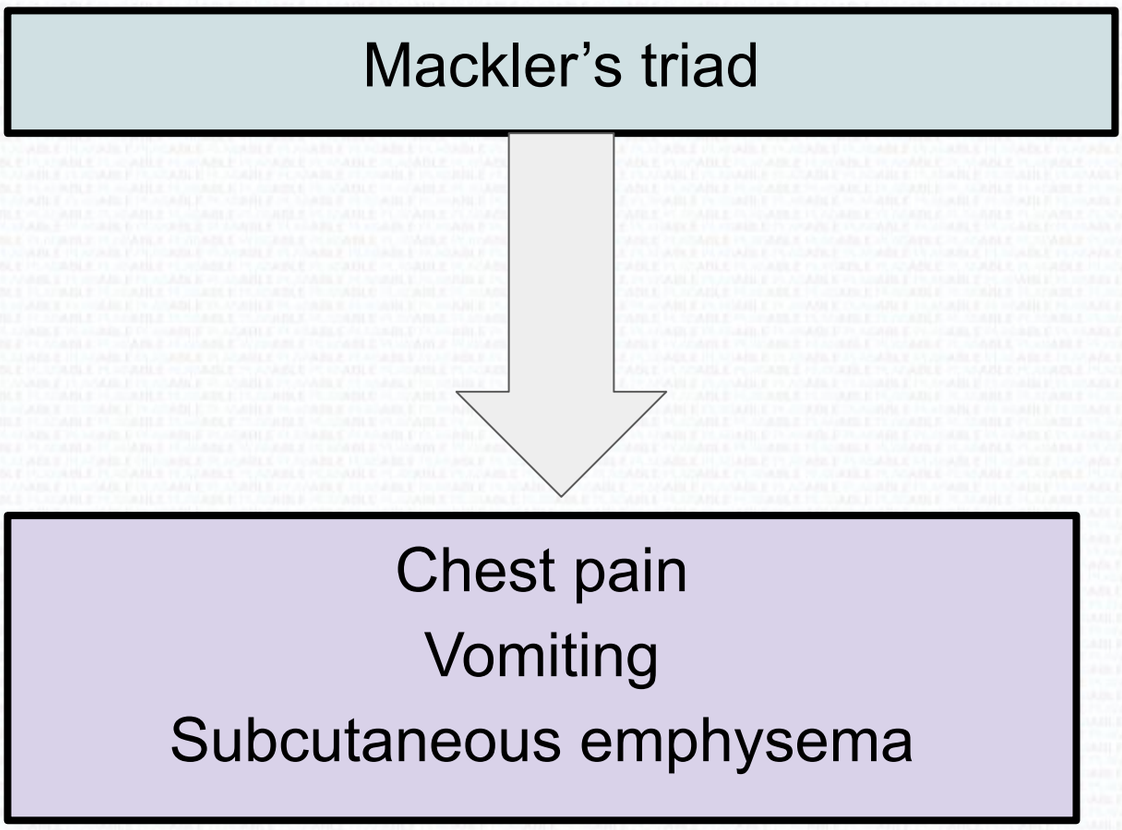
or

55 years and over with weight loss and any of the following:

- Upper abdominal pain
- Reflux
- Dyspepsia



Oesophageal Rupture



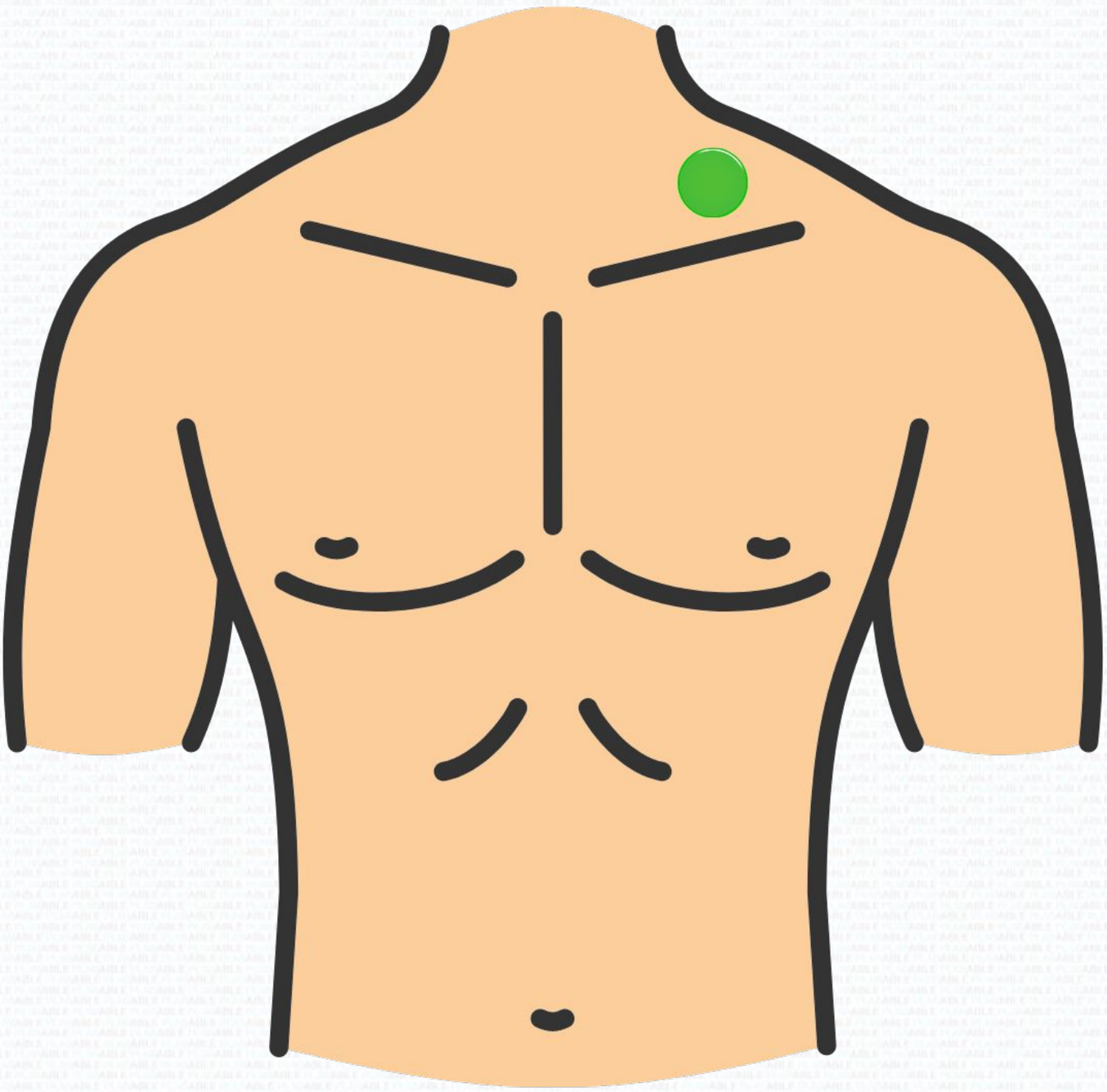
Subcutaneous emphysema is a late sign of oesophageal rupture

One of the complications of oesophageal rupture is → Mediastinitis

Characterised by

- Fever
- Chills
- Retrosternal pain

Virchow's Node



Lump in the left supraclavicular region is known as a Virchow's node. This finding is called the Troisier's sign

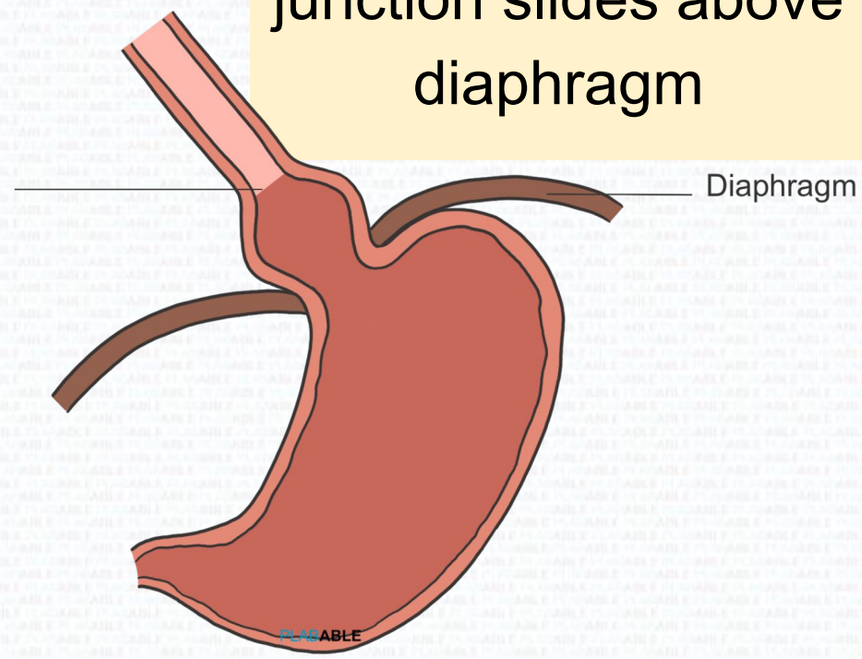
It is indicative of stomach cancer

Hiatus Hernia Types

Types

Sliding

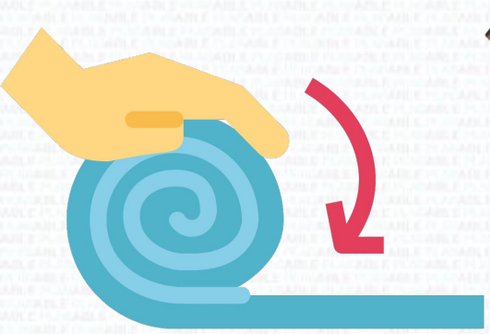
Gastro-oesophageal junction slides above diaphragm

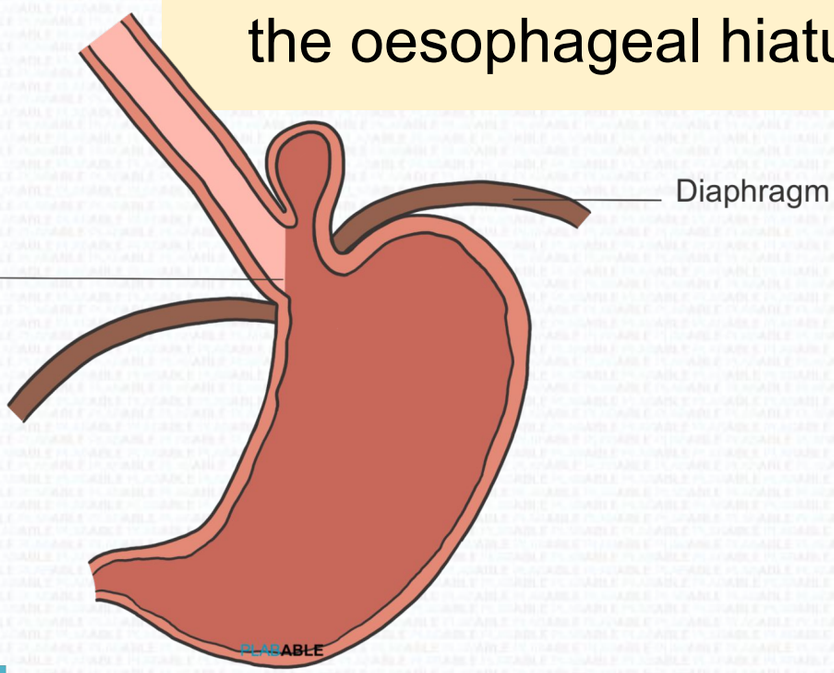


Sliding Hiatus Hernia

Rolling

Gastro-oesophageal junctions remains below the diaphragm but a part of the stomach herniates through the oesophageal hiatus





Rolling Hiatus Hernia

PLABABLE

Hiatus Hernia

Presentation

Gastro-oesophageal reflux symptoms

Some may be asymptomatic

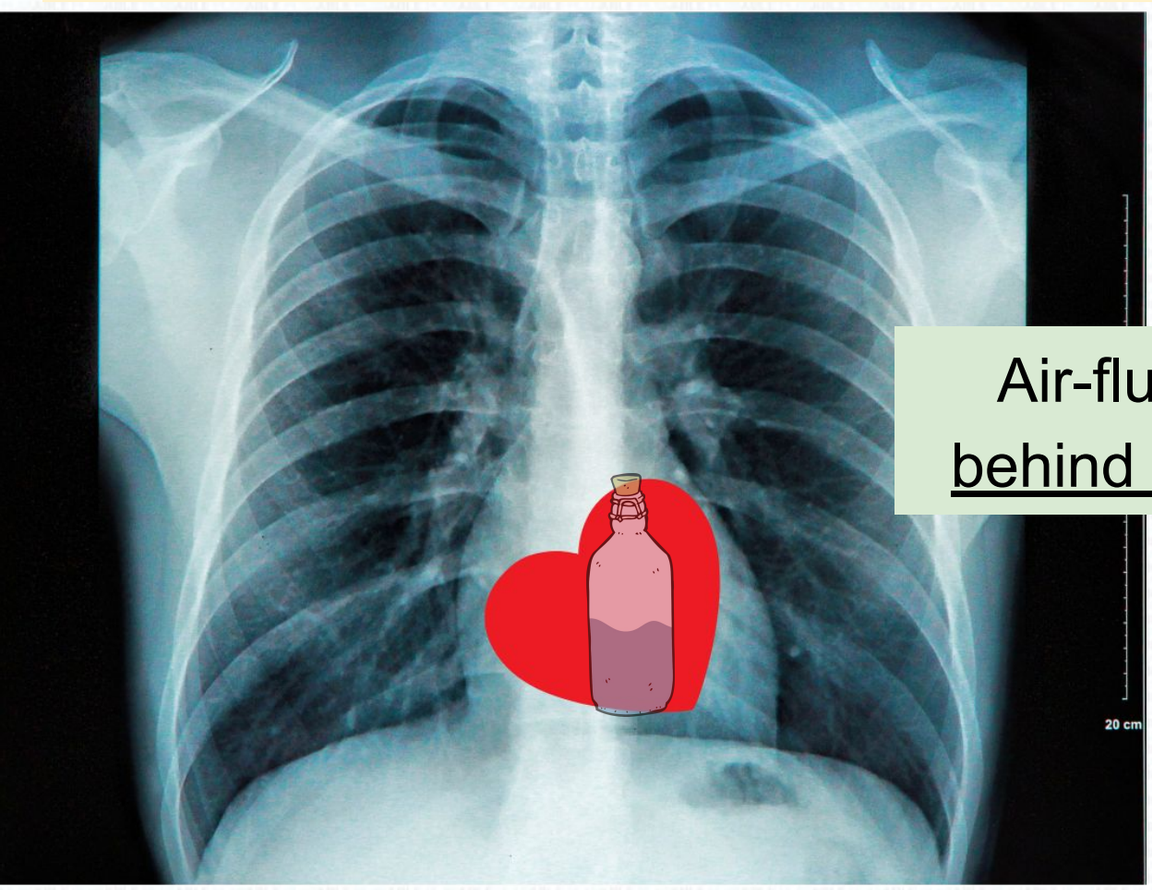
Diagnosis

Endoscopy

Barium swallow

Role of Chest X-ray

Chest X-rays done for other reasons (e.g. patient in A&E with chest pain) can show soft tissue opacity with air-fluid level <u>behind</u> the heart



Air-fluid level <u>behind</u> the heart

Faecal Impaction

Is the the stool hard or soft?

Hard

→ First soften stool

Achieved using:

- **Macrogol** (osmotic laxative)

→ Consider adding oral stimulants

If there is no disimpaction after a few days add **oral stimulant laxatives** eg senna or bisacodyl

If response is poor:
→ Switch to glycerol suppositories

Soft

→ Stimulate GI tract

As the stool is already soft all that is required is the use of **oral stimulant laxatives** eg senna or bisacodyl

If response is poor:
→ Switch to bisacodyl suppositories

One can also try docusate at this point as it is a stool softener and stimulant

If there need for rapid disimpaction (e.g. elderly + obvious abdominal pain + confusion) then prescribe phosphate enema

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