

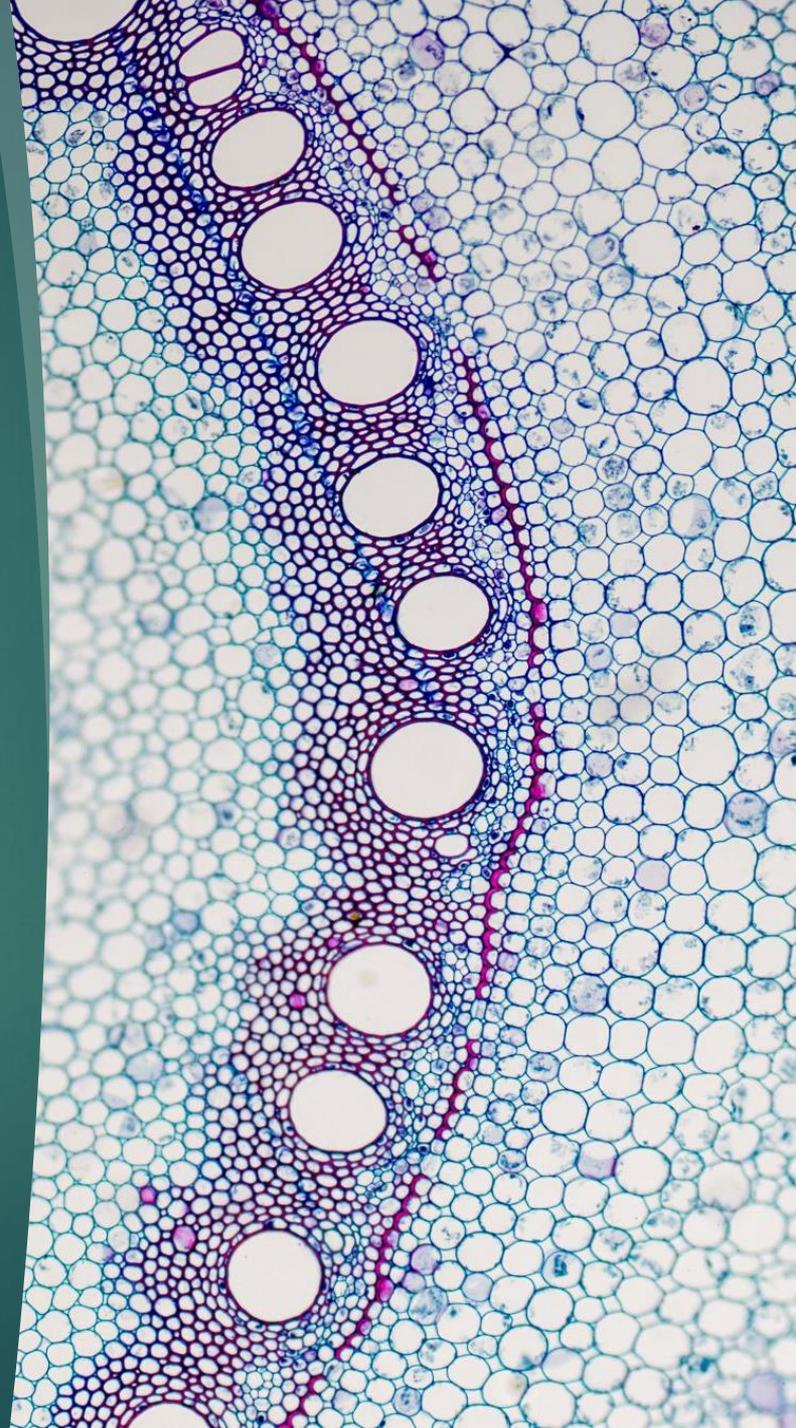
Introductory course **Gastrointestinal Symptoms**

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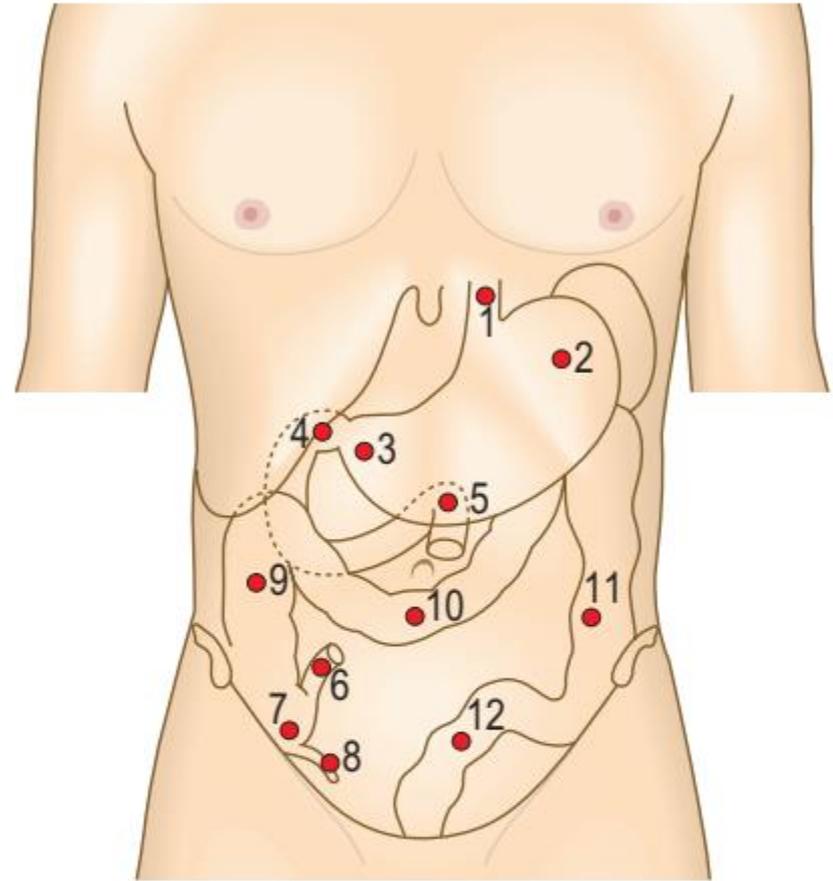


Gastrointestinal System

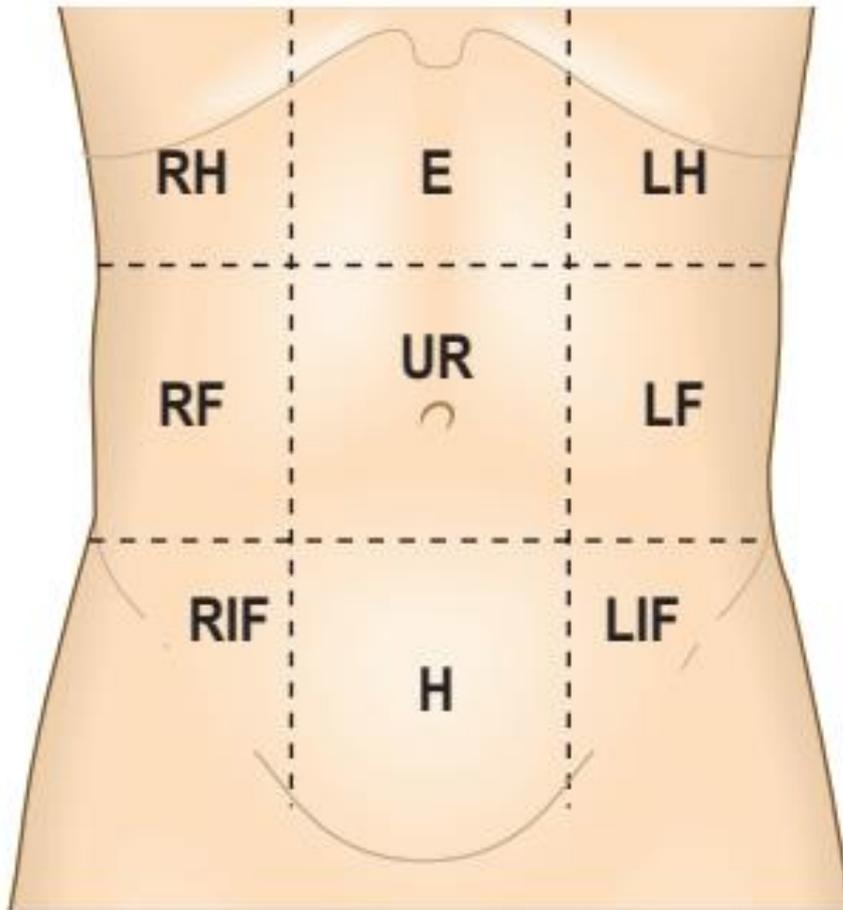
- ▶ Alimentary tract: from the mouth to the anus , including the oesophagus, stomach, small intestine (comprising the duodenum, jejunum and ileum), colon (ascending, descending, sigmoid colon) and rectum
- ▶ liver and biliary system (including the gallbladder)
- ▶ Pancreas
- ▶ Spleen



Surface marking of alimentary organs



- | | |
|--------------------------|---------------------------------|
| 1 Oesophagus | 7 Caecum |
| 2 Stomach | 8 Appendix (in pelvic position) |
| 3 Pyloric antrum | 9 Ascending colon |
| 4 Duodenum | 10 Transverse colon |
| 5 Duodenojejunal flexure | 11 Descending colon |
| 6 Terminal ileum | 12 Sigmoid colon |



The abdominal surface can be divided into nine regions by the intersection of two horizontal (subcostal , transtubercular planes) and two vertical planes (midclavicular lines)

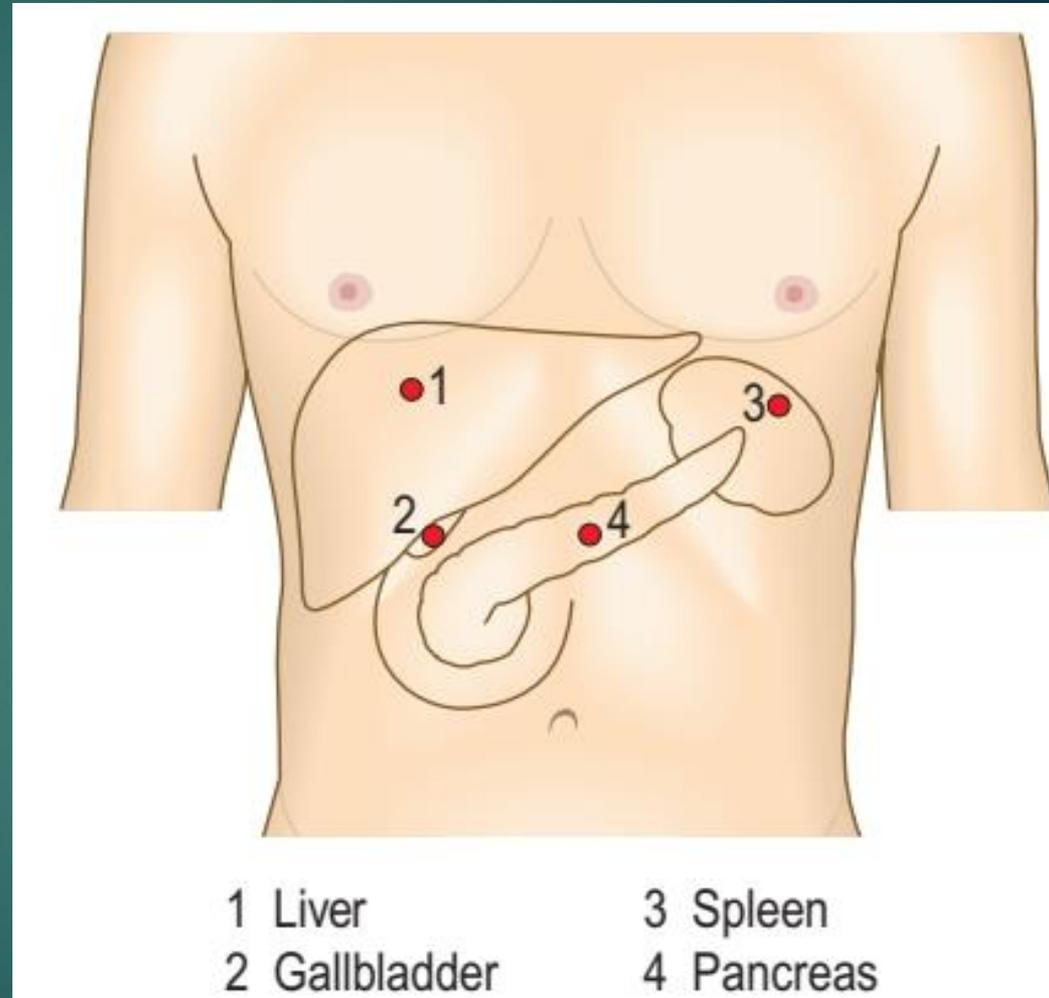
- midclavicular lines run from the midpoint of clavicle to the midpoint of inguinal ligament

- subcostal plane : lower border of 10th costal cartilage

- transtubercular plane : iliac crest tubercles and body of 5th lumbar vertebra

C Regions of the abdomen. *E*, epigastrium; *H*, hypogastrum or suprapubic region; *LF*, left flank or lumbar region; *LH*, left hypochondrium; *LIF*, left iliac fossa; *RF*, right flank or lumbar region; *RH*, right hypochondrium; *RIF*, right iliac fossa; *UR*, umbilical region.

Surface marking of non-alimentary GI organs



6.1 Surface markings of the main non-alimentary tract abdominal organs

Structure	Position
Liver	Upper border: fifth right intercostal space on full expiration Lower border: at the costal margin in the mid-clavicular line on full inspiration
Spleen	Underlies left ribs 9–11, posterior to the mid-axillary line
Gallbladder	At the intersection of the right lateral vertical plane and the costal margin, i.e. tip of the ninth costal cartilage
Pancreas	Neck of the pancreas lies at the level of L1; head lies below and right; tail lies above and left
Kidneys	Upper pole lies deep to the 12th rib posteriorly, 7 cm from the midline; the right is 2–3 cm lower than the left

History taking scheme :

- ▶ Patient profile.
- ▶ History of presenting illness. (including the main symptom with detailed elaboration + any other associated symptoms related to the same system (e.g. All GI Symptoms)
- ▶ Review of systems (all other symptoms related to all other systems)
- ▶ Past medical history (any chronic medical illness/es)
- ▶ Past surgical history (details of any previous surgery/ies)
- ▶ Drug history + previous blood transfusion.
- ▶ Family history.
- ▶ Social history
- ▶ Occupational history.
- ▶ Hx of trauma

GI symptoms

Mouth symptoms

- ▶ Halitosis → Bad breath (poor oral hygiene, smoking, liver disease-called fetor hepaticus-, oral cancer, gingival, dental or pharyngeal infection).
- ▶ Xerostomia → dry mouth (Sjogren's syndrome, medications, dehydration)
- ▶ Dysgeusia/ Parageusia → altered taste sensation
 - sour , bitter or metallic taste of food
 - many causes (chemotherapy, meds, zinc def.,liver disease, lead poisoning .. Etc
- ▶ Ageusia : complete loss of taste
- ▶ Hypogeusia: decreased taste sensation
- ▶ Cacogeusia → unpleasant taste in the mouth.

Anorexia

- Anorexia is loss of appetite and/or a lack of interest in food.
- Patient states “I don’t feel like to eat, I am not hungry at all, I don’t enjoy food”

Weight loss :

- Unintentional weight loss
 - ▶ clinically important weight loss is defined as loss of more than 5% of usual body weight or 4.5 kg over 6 months.
 - ▶ Ask how much weight has been lost, over what time and was it intentional ?
 - ▶ Causes of weight loss are either :
 - Increased energy expenditure as in hyperthyroidism, fever , major trauma and burns (catabolic state)
 - Reduced energy intake due to dieting, loss of appetite, malabsorption and malnutrition.
 - Mixed (as in malignancy)

Weight loss :

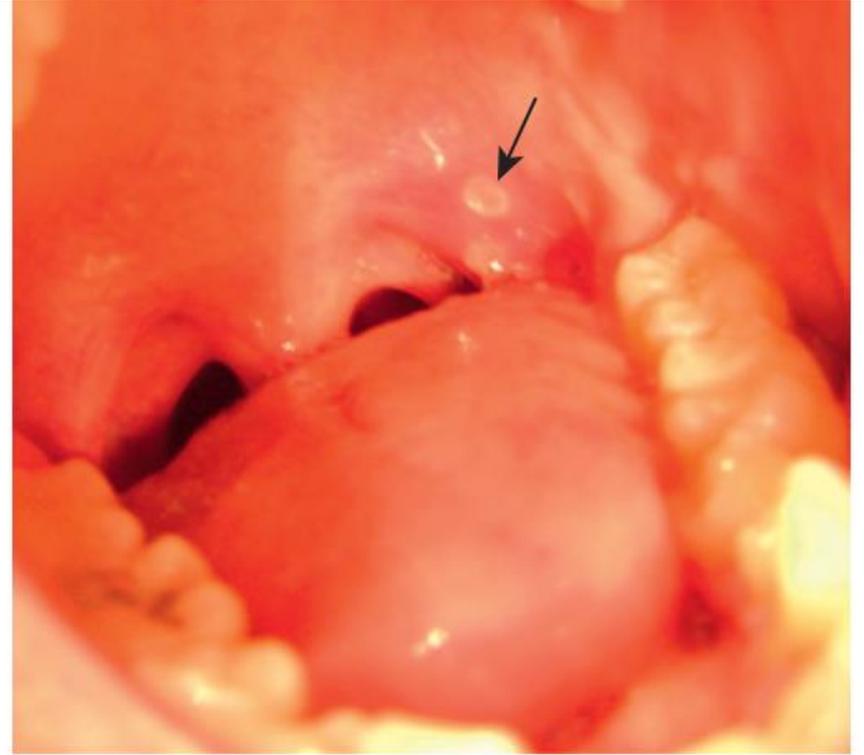
- It does not specifically indicate gastrointestinal disease
- A net calorie deficit of 1000 kcal/day results in weight loss of approximately 1 kg/week (7000 kcal \cong 1 kg of fat).
- Rapid weight loss over days suggests loss of body fluid as a result of vomiting, diarrhoea or diuretics (1 L of water = 1 kg).

Painful mouth :

- Causes of sore lips, tongue or buccal mucosa include:
- deficiencies, including iron, folate, vitamin B12 or C
- dermatological disorders, including lichen planus
- chemotherapy
- aphthous ulcers
- infective stomatitis
- inflammatory bowel disease and coeliac disease, associated with mouth ulcers.



A



B

Fig. 6.3 Some causes of a painful mouth. **A** Lichen planus. **B** Small, 'punched-out' aphthous ulcer (*arrow*).

Heartburn and Reflux

- Heartburn is a hot, burning retrosternal discomfort which radiates upwards.
- Always differentiate from cardiac pain :
(burning, radiating upward, increased with lying flat or bending forward , associated with :
 - Reflux: a sour acidic taste in the mouth from regurgitating gastric acid .
 - Waterbrash is the sudden appearance of fluid in the mouth due to reflex salivation as a result of GERD or, rarely, peptic ulcer disease.

Dyspepsia

- pain or discomfort centered in the upper abdomen
- Clusters of symptoms are used to classify dyspepsia:
 - reflux-like dyspepsia (heartburn-predominant dyspepsia)
 - ulcer-like dyspepsia (epigastric pain relieved by food or antacids)
 - dysmotility-like dyspepsia (nausea, belching, bloating and premature satiety)

- 
- ▶ Ask about:
 - ▶ site of pain (pointing with one finger?)
 - ▶ character of pain
 - ▶ exacerbating and relieving factors, such as food and antacid
 - ▶ associated symptoms, such as nausea, belching, bloating and premature satiety.
 - ▶ Dyspepsia that is worse with an empty stomach and relieved by eating is typical of duodenal ulcer, the opposite for gastric ulcer.
 - ▶ nausea and abdominal fullness that is worse after fatty or spicy meals. 'Fat intolerance' is common in gallbladder disease.

Odynophagia

- Pain on swallowing , often precipitated by drinking hot liquids .
- it can be with or without dysphagia.
- indicates oesophageal ulceration or oesophagitis from GERD or oesophageal candidiasis.

Dysphagia

- Difficult swallowing, Patients complain that food or drink sticks when they swallow.
- Ask about :
 - onset: recent or longstanding
 - nature: intermittent or progressive
 - difficulty swallowing solids, liquids or both
 - the level the patient feels food sticks at
 - any regurgitation or reflux of food or fluid
 - any associated pain (odynophagia), heartburn or weight loss

Dysphagia



- ▶ Differentiate from **early satiety**, the inability to complete a full meal because of premature fullness, and **globus**, which is a feeling of a lump in the throat.
- ▶ **Globus** does not interfere with swallowing and is not related to eating

Dysphagia

- Neurological dysphagia resulting from bulbar or pseudobulbar palsy is worse for liquids than solids, and may be accompanied by choking and fluid regurgitating from the nose.

Dysphagia

- ▶ Neuromuscular dysphagia, or oesophageal dysmotility, presents in middle age, is worse for solids and may be helped by liquids and sitting upright.
- ▶ Achalasia, (failure of LES to relax) leads to oesophageal dilatation, Food regurgitation and overflow into the respiratory tract may then occur, especially at night when the patient lies down, causing aspiration pneumonia.
- ▶ Diffuse esophageal spasm causes central chest pain, which may be confused with cardiac pain

Dysphagia

- Mechanical dysphagia is often due to esophageal stricture.
 - With weight loss, a short history and no reflux symptoms, suspect esophageal cancer.
 - Longstanding dysphagia without weight loss but accompanied by heartburn is more likely to be due to benign peptic stricture.
- Dysphagia for liquids is usually due to neuromuscular disorder or
- Dysphagia for solids is usually due to esophageal obstruction (cancer, peptic stricture).



8.7 Causes of dysphagia

Oral

- Tonsillitis, glandular fever, pharyngitis, peritonsillar abscess
- Painful mouth ulcers

Neurological

- Bulbar or pseudobulbar palsy
- Cerebrovascular accident

Neuromuscular

- Achalasia
- Pharyngeal pouch
- Myasthenia gravis
- Oesophageal dysmotility

Mechanical

- Oesophageal cancer
- Peptic oesophagitis
- Other benign strictures, e.g. after prolonged nasogastric intubation
- Extrinsic compression, e.g. lung cancer
- Systemic sclerosis



8.8 Symptom checklist in dysphagia

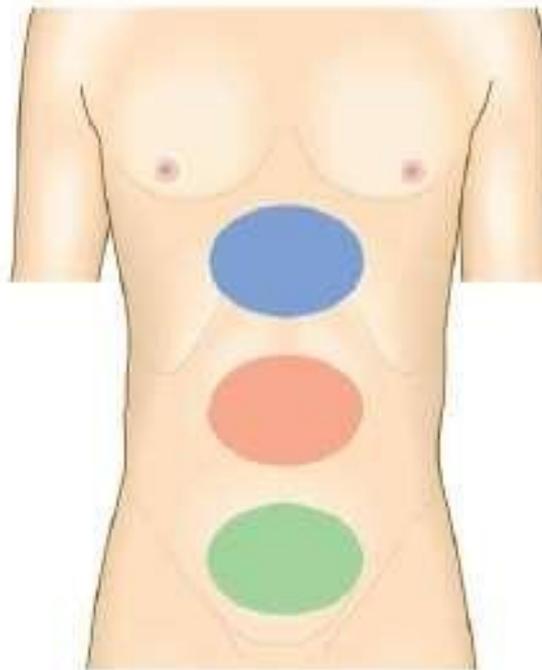
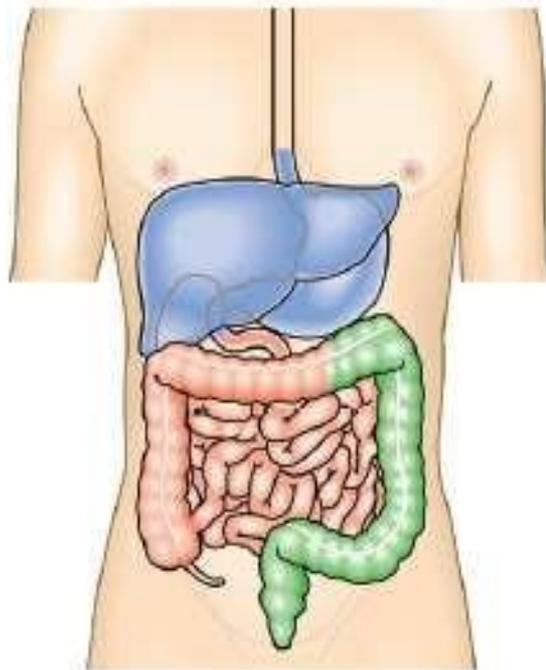
- Is dysphagia painful or painless?
- Is dysphagia intermittent or progressive?
- How long is the history of dysphagia?
- Is there a previous history of dysphagia or heartburn?
- Is the dysphagia for solids or liquids or both?
- At what level does food stick?
- Is there complete obstruction with regurgitation?

Abdominal Pain (SOCRATES)

■ *Site*

- ▶ **Visceral abdominal pain** from distension, contraction or ischemia of hollow organs is deep and poorly localised (vague) in the midline. The pain is conducted via sympathetic splanchnic nerves.
- ▶ **Somatic pain** from the parietal peritoneum and abdominal wall is more localised to the inflamed area. conducted via intercostal nerves. Inflammation may cause localised pain: for example, left iliac fossa pain due to diverticulitis of the sigmoid colon.
- ▶ Pain arising from foregut structures is localised above the umbilicus.
- ▶ Central abdominal pain arises from midgut structures, such as the small bowel and appendix.
- ▶ Lower abdominal pain arises from hindgut structures, such as the colon.

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- ▶ Pain from an unpaired structure, such as the pancreas, is midline and radiates through to the back.
 - ▶ Pain from paired structures, such as renal colic, is felt on one side and radiates to the affected side.
 - ▶ Testicular torsion may present with lower abdominal pain.
 - ▶ In females, consider gynaecological causes like ruptured ovarian cyst, pelvic inflammatory disease, endometriosis or ectopic pregnancy.



-  Foregut – pain localises to epigastric area
-  Midgut – pain localises to periumbilical area
-  Hindgut – pain localises to suprapubic area

Fig. 8.5 Abdominal pain. Perception of visceral pain is localised to the epigastric, umbilical or suprapubic region, according to the embryological origin of the affected organ.



- ***Onset (sudden vs. gradual)***

- Sudden onset of severe abdominal pain, rapidly progressing to become generalized and constant, suggests a hollow viscus perforation, volvulus, ruptured abdominal aortic aneurysm or mesenteric infarction.
- Gradual onset of pain may be more with inflammatory conditions.

- ***Character (sharp, stabbing, vague, burning ...etc)***
- Inflammation usually produces constant pain exacerbated by movement or coughing
- Colicky pain arises from hollow structures, e.g. small or large bowel obstruction, or the uterus during labour. It lasts for a short period of time (seconds or minutes), eases off and then returns.
- Dull, vague and poorly localised pain is more typical of an inflammatory process or infection, e.g. salpingitis, appendicitis or diverticulitis.
- Biliary and renal 'colic' are misnamed, as the pain is rarely colicky; pain rapidly increases to a peak and persists over several hours before gradually resolving.

■ ***Radiation / Referral***

- Pain radiating from the right hypochondrium to the shoulder or interscapular region may reflect diaphragmatic irritation, as in acute cholecystitis.
- Pain radiating from the loin to the groin and genitalia is typical of renal colic.
- Central upper abdominal pain radiating through to the back, partially relieved by sitting forward, suggests pancreatitis.
- severe back pain with abdominal pain may indicate a ruptured or dissecting abdominal aortic aneurysm.

■ ***Shifting***

- Central abdominal pain that later shifts into the right iliac fossa occurs in acute appendicitis.

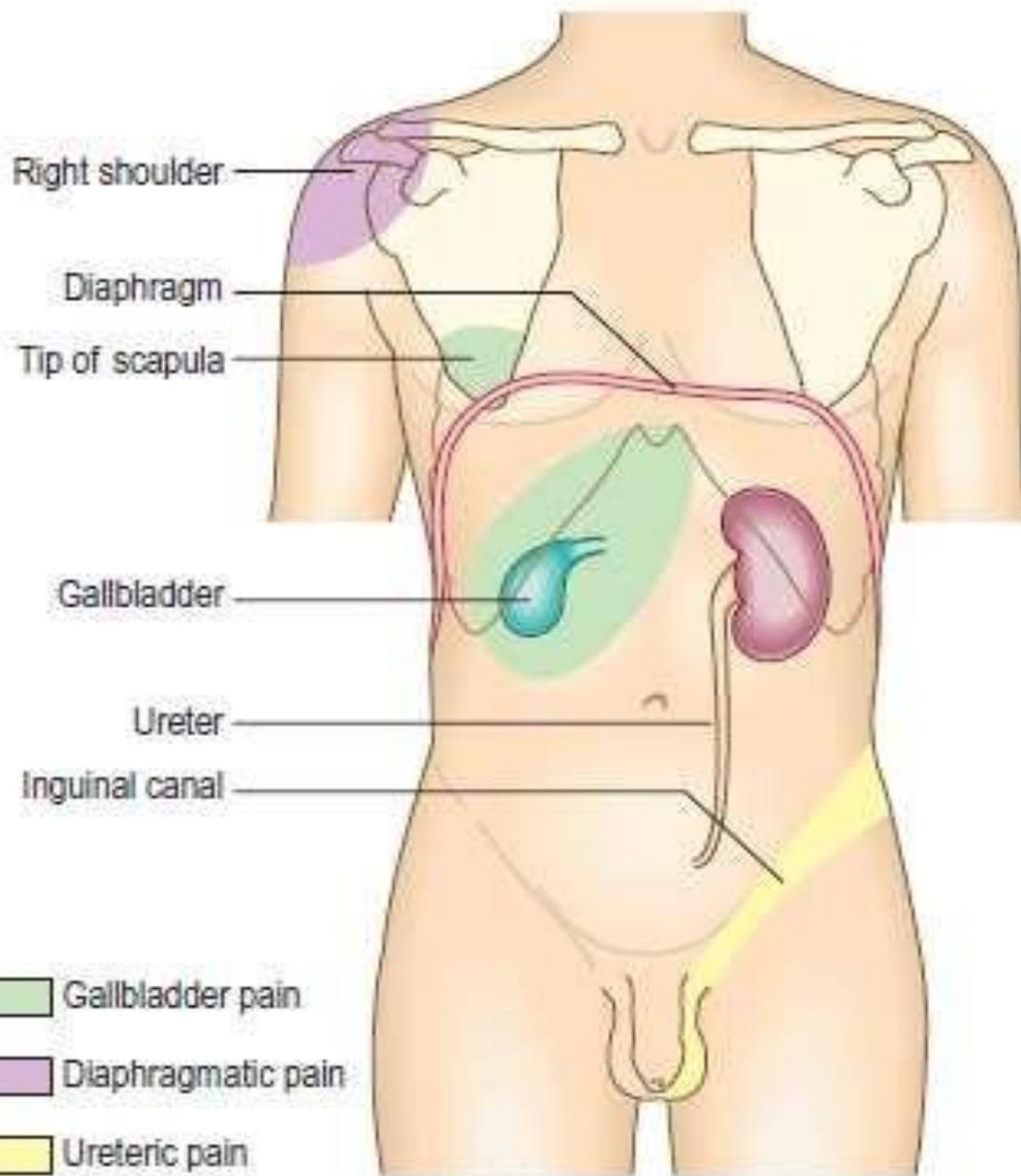


Fig. 8.6 Characteristic radiation of pain from the gallbladder, diaphragm and ureters.

■ *Associated symptoms*

- Ask about all GI and non GI symptoms
- Non-GI symptoms might be classified under review of systems
- Anorexia, nausea and vomiting
- Common but nonspecific
- May be present with any severe pain and other non GI diseases (e.g Myocardial infarction)
- May be absent, even in advanced intraabdominal disease
 - Altered bowel habits
 - Bleeding (hematemesis, melena, hematochezia)
 - Weight loss, chills, rigors, feeling of hotness (fever)
- Non- GI symptoms such as breathlessness or palpitation may suggest non-alimentary causes



- *Timing*

- Abdominal pain persisting for hours or days suggests an inflammatory disorder, such as acute appendicitis, cholecystitis or diverticulitis.



- ***Exacerbating and relieving factors***

- Ask about relation of pain to : movement, coughing, food, medications, position

- Ask the patient : is there anything that relieves the pain ??
Is there any thing that brings the pain more ??

- Pain exacerbated by movement or coughing suggests inflammation. Patients tend to lie still to avoid exacerbating the pain.

- People with colicky pain typically moves around or draw their knees up towards the chest during spasms.



▶ *Severity*

- ▶ Ask the patient subjectively to rate their pain on a scale from 1-10 giving them an examples of the most trivial and the most severe pains.
- ▶ Different patients have different pain perception and threshold but when your patient says it is severe !! Then it is severe !!
- ▶ Severe pain rapidly relieved by potent analgesia is more typical of acute pancreatitis .
- ▶ Very Severe abdominal pain with minimal physical signs , poorly relieved by opioid analgesia might suggest mesenteric infarction “pain out of proportion”

2.2 Characteristics of pain (SOCRATES)

Site

- Somatic pain, often well localised, e.g. sprained ankle
- Visceral pain, more diffuse, e.g. angina pectoris

Onset

- Speed of onset and any associated circumstances

Character

- Described by adjectives, e.g. sharp/dull, burning/tingling, boring/stabbing, crushing/tugging, preferably using the patient's own description rather than offering suggestions

Radiation

- Through local extension
- Referred by a shared neuronal pathway to a distant unaffected site, e.g. diaphragmatic pain at the shoulder tip via the phrenic nerve (C₃, C₄)

Associated symptoms

- Visual aura accompanying migraine with aura
- Numbness in the leg with back pain suggesting nerve root irritation

Timing (duration, course, pattern)

- Since onset
- Episodic or continuous:
 - If episodic, duration and frequency of attacks
 - If continuous, any changes in severity

Evaluation of Abdominal Pain

Exacerbating and relieving factors

- Circumstances in which pain is provoked or exacerbated, e.g. eating
- Specific activities or postures, and any avoidance measures that have been taken to prevent onset
- Effects of specific activities or postures, including effects of medication and alternative medical approaches

Severity

- Difficult to assess, as so subjective
- Sometimes helpful to compare with other common pains, e.g. toothache
- Variation by day or night, during the week or month, e.g. relating to the menstrual cycle

6.2 Diagnosing abdominal pain

Disorder				
	Peptic ulcer	Biliary colic	Acute pancreatitis	Renal colic
Site	Epigastrium	Epigastrium/right hypochondrium	Epigastrium/left hypochondrium	Loin
Onset	Gradual	Rapidly increasing	Sudden	Rapidly increasing
Character	Gnawing	Constant	Constant	Constant
Radiation	Into back	Below right scapula	Into back	Into genitalia and inner thigh
Associated symptoms	Non-specific	Non-specific	Non-specific	Non-specific
Timing				
Frequency/periodicity	Remission for weeks/months	Attacks can be enumerated	Attacks can be enumerated	Usually a discrete episode
Special times	Nocturnal and especially when hungry	Unpredictable	After heavy drinking	Following periods of dehydration
Duration	½–2 hours	4–24 hours	>24 hours	4–24 hours
Exacerbating factors	Stress, spicy foods, alcohol, non-steroidal anti-inflammatory drugs	Eating – unable to eat during bouts	Alcohol Eating – unable to eat during bouts	–
Relieving factors	Food, antacids, vomiting	–	Sitting upright	–
Severity	Mild to moderate	Severe	Severe	Severe

6.3 Non-alimentary causes of abdominal pain

Disorder	Clinical features
Myocardial infarction	Epigastric pain without tenderness <i>Angor animi</i> (feeling of impending death) Hypotension Cardiac arrhythmias
Dissecting aortic aneurysm	Tearing interscapular pain <i>Angor animi</i> Hypotension Asymmetry of femoral pulses
Acute vertebral collapse	Lateralised pain restricting movement Tenderness overlying involved vertebra
Cord compression	Pain on percussion of thoracic spine Hyperaesthesia at affected dermatome with sensory loss below Spinal cord signs
Pleurisy	Lateralised pain on coughing Chest signs, e.g. pleural rub
Herpes zoster	Hyperaesthesia in dermatomal distribution Vesicular eruption
Diabetic ketoacidosis	Cramp-like pain Vomiting Air hunger Tachycardia Ketotic breath
Salpingitis or tubal pregnancy	Suprapubic and iliac fossa pain, localised tenderness Nausea, vomiting Fever
Torsion of testis/ovary	Lower abdominal pain Nausea, vomiting Localised tenderness

Nausea and vomiting

- Nausea is the sensation of feeling sick.
- Vomiting is the expulsion of gastric contents via the mouth.
- Vomiting is typically preceded by nausea, but in increased intracranial pressure may occur without warning.
- If with abdominal pain → may suggest upper gastrointestinal disorders, R/O MI
- Obstruction distal to the 2nd part of duodenum produces bile-stained vomit while gastric outlet pyloric obstruction causes projectile non bile stained vomit.
- Vomiting is common in gastroenteritis, cholecystitis, pancreatitis and hepatitis.
- Vomiting may be caused by severe pain as renal or biliary colic, myocardial infarction, as well as systemic disease, metabolic disorders and drug therapy.

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- ▶ Peptic ulcers usually causes abd. Pain + vomiting
 - ▶ Peptic ulcers complicated by pyloric stenosis causes projectile vomiting gastric content that is not bile-stained.
 - ▶ Severe vomiting without significant pain suggests gastric outlet or proximal small bowel obstruction.
 - ▶ Feculent vomiting of brown small bowel contents occurs in distal small bowel or colonic obstruction.
 - ▶ The more distal the level of intestinal obstruction, the more marked the accompanying abdominal distension and colic.
 - ▶ Anorexia nervosa and bulimia are eating disorders characterized by, self-induced vomiting. In bulimia, weight is maintained or increased, unlike in anorexia nervosa, whweight loss is common.

- 
- ▶ **Non GI causes** of nausea and vomiting include:
 - ▶ drugs, such as alcohol, opioids, digoxin.
 - ▶ cytotoxic agents or antidepressants
 - ▶ pregnancy
 - ▶ diabetic ketoacidosis (DKA)
 - ▶ renal or liver failure
 - ▶ hypercalcaemia
 - ▶ Addison's disease
 - ▶ raised intracranial pressure (meningitis, brain tumour)
 - ▶ vestibular disorders (labyrinthitis and Ménière's disease).

 - ▶ Ask about:
 - ▶ relation to meals and timing, such as early morning or late evening
 - ▶ associated symptoms, such as dyspepsia and abdominal pain, and whether they are relieved by vomiting
 - ▶ Colour : whether the vomit is bile-stained (green), blood-stained or faeculent (brown)
 - ▶ Amount
 - ▶ associated weight loss
 - ▶ medications



8.9 Non-alimentary causes of vomiting

Neurological

- Raised intracranial pressure, e.g. meningitis, brain tumour
- Labyrinthitis and Ménière's disease
- Migraine
- Vasovagal syncope, shock, fear and severe pain, e.g. renal colic, myocardial infarction

Drugs

- Alcohol, opioids, theophyllines, digoxin, cytotoxic agents, antidepressants
- Consider any drug

Metabolic/endocrine

- Pregnancy
- Diabetic ketoacidosis
- Renal failure
- Liver failure
- Hypercalcaemia
- Addison's disease

Psychological

- Anorexia nervosa
- Bulimia



8.10 Symptom checklist in vomiting

- What medications has the patient been taking?
- Is vomiting:
 - heralded by nausea or occurring without warning?
 - associated with dyspepsia or abdominal pain?
 - relieving dyspepsia or abdominal pain?
 - related to mealtimes, early morning or late evening?
 - bile-stained, blood-stained or faeculent?

Wind and flatulence

- Belching (burping) , Bloating (excessive or offensive flatus), and Borborygmi (audible bowel sounds) All referred to as 'wind' or flatulence.
- Belching is due to air swallowing (aerophagy) and has no medical significance It may indicate anxiety or GERD
- Flatus is derived from swallowed air and from colonic bacterial fermentation.
- Excessive flatus occurs particularly in lactase deficiency and intestinal malabsorption.
- Complete Absence of flatus with intestinal obstruction.
- Borborygmi result from movement of fluid and gas along the bowel. borborygmi, with colicky discomfort, suggest small bowel obstruction or dysmotility

Abdominal distension

Causes : 6 F's

- **fat** in obesity
- **flatus** in pseudo-obstruction or bowel obstruction
- **faeces** in subacute obstruction or constipation
- **fluid** in ascites (accumulation of fluid in the peritoneal cavity, tumours (especially ovarian) or distended bladder
- **fetus** (check last menstrual period)
- **functional** bloating (fluctuating abdominal distension that develops during the day and resolves overnight, with irritable bowel syndrome).

Abdominal distension



8.12 Causes of ascites

Diagnosis	Comment
Common	
Hepatic cirrhosis with portal hypertension	Transudate
Intra-abdominal malignancy with peritoneal spread	Exudate, cytology may be positive
Uncommon	
Hepatic vein occlusion (Budd–Chiari syndrome)	Transudate in acute phase
Constrictive pericarditis and other right heart failure	Check jugular venous pressure and listen for pericarditic rub
Hypoproteinaemia (nephrotic syndrome, protein-losing enteropathy)	Transudate
Tuberculosis peritonitis	Low glucose content
Pancreatitis	Very high amylase content

Diarrhoea

- **Diarrhea** means the more frequent passage of stool or loose consistency of stool or both (more often) .
- Normal bowel movement frequency ranges from three times daily to once every 3 days.
- **Bloody diarrhoea** may be due to inflammatory bowel disease, colonic ischaemia or infective gastroenteritis.
- **Steatorrhoea** is diarrhoea associated with fat malabsorption. The stool is foul smelling, greasy, pale and bulky, floating, and difficult to flush away.(coeliac disease, chronic pancreatitis and pancreatic insufficiency due to cystic fibrosis.

- 
- ▶ Ask about:
 - ▶ onset of diarrhea: acute, chronic or intermittent
 - ▶ stool: frequency, volume, colour
 - consistency: watery, unformed or semisolid
 - contents: red blood, mucus or pus
 - ▶ associated features: urgency, faecal incontinence or tenesmus (the sensation of needing to defecate, although the rectum is empty), abdominal pain, vomiting,
 - ▶ recent travel
 - ▶ recent medication, in particular any antibiotics, laxatives...etc

 - ▶ High-volume diarrhoea (>1 L per day) occurs when stool water content is increased and may be:
 - secretory, due to intestinal inflammation, as in infection or inflammatory bowel disease
 - osmotic, due to malabsorption, drugs (as in laxative abuse) or motility disorders (autonomic neuropathy, particularly in diabetes).
 - ▶ Fasting relieves osmotic diarrhoea but secretory diarrhoea persists.

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- ▶ The most common cause of acute diarrhoea is infective enteritis due to norovirus, Salmonella species or Clostridium difficile.
 - ▶ Infective diarrhoea can become chronic (>4 weeks) in cases of parasitic infestations (such as giardiasis (Giardia lamblia), amoebiasis or cryptosporidiosis).
 - ▶ Thyrotoxicosis is often accompanied by secretory diarrhoea or steatorrhoea and weight loss.
 - ▶ Low-volume diarrhoea alternating with constipation is associated with irritable bowel syndrome. Abdominal pain, distention, bloating, dyspepsia commonly accompany irritable bowel symptoms
 - ▶ Rome IV criteria for irritable bowel syndrome.
 - ▶ Colon cancer can sometimes present with diarrhea if on the right side or overflow diarrhea on top of obstruction on the left side



8.14 Symptom checklist in patients with diarrhoeal disorders

- Is diarrhoea acute, chronic or intermittent?
- Is there tenesmus, urgency or incontinence?
- Is the stool:
 - watery, unformed or semisolid?
 - large-volume and not excessively frequent, suggesting small-bowel disease?
 - small-volume and excessively frequent, suggesting large-bowel disease?
 - associated with blood, mucus or pus?
- Is sleep disturbed by diarrhoea, suggesting organic disease?
- Is there a history of:
 - contact with diarrhoea or of travel abroad?
 - relevant sexual contact ('gay bowel syndrome', human immunodeficiency virus (HIV))?
 - alcohol abuse or relevant drug therapy?
 - gastrointestinal surgery, gastrointestinal disease or inflammatory bowel disease?
 - family history of gastrointestinal disorder, e.g. gluten enteropathy, Crohn's?
 - any other gastrointestinal symptom, e.g. abdominal pain and vomiting?
 - systemic disease suggested by other symptoms, e.g. rigors or arthralgia?



8.13 Causes of diarrhoea

Acute

- Infective gastroenteritis, e.g. *Clostridium difficile*
- Drugs (especially antibiotics)

Chronic (>4 weeks)

- Irritable bowel syndrome
- Inflammatory bowel disease
- Parasitic infestations, e.g. *Giardia lamblia*, amoebiasis, *Cryptosporidium* spp.
- Colorectal cancer
- Autonomic neuropathy (especially diabetic)
- Laxative abuse and other drug therapies
- Hyperthyroidism
- Constipation and faecal impaction (overflow)
- Small-bowel or right colonic resection
- Malabsorption, e.g. lactose deficiency, coeliac disease

Constipation

- Infrequent passage of hard stools (change from the normal bowel habit)
- *Causes :*
- Lack of dietary fibers
- impaired colonic motility, (functional obstruction)
- impaired rectal sensation or anorectal dysfunction causing **anismus** (impaired process of evacuation)
- Colorectal cancer (mechanical obstruction) , hypothyroidism, IBS
- Hypercalcaemia
- drugs (opiates, iron)
- immobility (Parkinson's disease, stroke).

- 
- **Obstipation** / Absolute constipation (no gas or feces) suggests intestinal obstruction and is likely to be associated with pain, vomiting and distension. (distal small bowel /large bowel obstruction)
 - **Tenesmus** - the sensation of needing to defecate although the rectum is empty, suggests rectal inflammation or tumour.
-
- ▶ Ask about:
 - ▶ onset: longstanding or recent onset
 - ▶ stool frequency: how often the patient passes stool each week and how much time is spent straining at stool
 - ▶ shape of the stool: for example, pellet-like (Use the Bristol stool form scale)
 - ▶ associated symptoms, such as abdominal pain, distention, anal pain on defecation or rectal bleeding
 - ▶ drugs.



8.16 Symptom checklist in patients with constipation

- Has constipation been lifelong or is it of recent onset?
- How often do the bowels empty each week?
- How much time is spent straining at stool?
- Is there associated abdominal pain, anal pain on defecation or rectal bleeding?
- Has the shape of the stool changed, e.g. become pellet-like?
- Has there been any change in drug therapy?



8.17 Causes of constipation

- Lack of fibre in diet
- Irritable bowel syndrome
- Intestinal obstruction (cancer)
- Drugs (opioids, iron)
- Metabolic/endocrine (hypothyroidism, hypercalcaemia)
- Immobility (stroke, Parkinson's disease)

THE BRISTOL STOOL FORM SCALE

<i>Type 1</i>		Separate hard lumps, like nuts (hard to pass)
<i>Type 2</i>		Sausage-shaped but lumpy
<i>Type 3</i>		Like a sausage but with cracks on its surface
<i>Type 4</i>		Like a sausage or snake, smooth and soft
<i>Type 5</i>		Soft blobs with clear-cut edges (passed easily)
<i>Type 6</i>		Fluffy pieces with ragged edges, a mushy stool
<i>Type 7</i>		Watery, no solid pieces ENTIRELY LIQUID

Haematemesis

- Haematemesis is vomiting blood
 - Fresh and red
 - Coffee grounds dark brown

Ask about:

- Colour:: fresh red blood or dark brown/ coffee grounds.
- Onset: if preceded by intense retching or was blood staining apparent in the first vomit?
- History of dyspepsia, peptic ulceration, gastrointestinal bleeding or liver disease.
- All associated symptoms
- drugs : Alcohol, (NSAIDs) and glucocorticoid ingestion.

- 
- ▶ with oesophageal varices, fresh blood may well up in the mouth, as well as being actively vomited.
 - ▶ With a lower oesophageal mucosal tear due to the trauma of forceful retching (Mallory–Weiss syndrome), fresh blood appears only after the patient has vomited forcefully several times.
 - ▶ Gastric ulcer / cancer may present with coffee ground dark blood.

Melena

- ▶ Melaena is the passage of tarry, shiny black stools with a characteristic odour.
- ▶ results from upper gastrointestinal bleeding.
- ▶ Distinguish this from the matt black stools associated with oral iron or bismuth therapy
- ▶ Peptic ulceration (gastric or duodenal) is the most common cause of upper gastrointestinal bleeding and can manifest with melaena, haematemesis or both.
- ▶ Other causes of upper GI bleeding (esophageal varices, gastric cancer and gastric angioectasias (Dieulafoy lesion) are less common causes of upper gastrointestinal bleeding and melena.

Haematemesis &

Melaena



8.18 Symptom checklist in haematemesis and melaena

- Is there a previous history of dyspepsia, peptic ulceration, gastrointestinal bleeding or liver disease?
- Is there a history of alcohol, NSAIDs or corticosteroid ingestion?
- Did the vomitus comprise fresh blood or coffee ground-stained fluid?
- Was the haematemesis preceded by intense retching?
- Was blood staining of the vomitus apparent in the first vomit?

Haematemesis & Melaena



8.19 Causes of upper gastrointestinal bleeding

- Gastric or duodenal ulcer
- Mallory–Weiss oesophageal tear
- Oesophagitis, gastritis, duodenitis
- Oesophagogastric varices
- Oesophageal or gastric cancer
- Vascular malformation

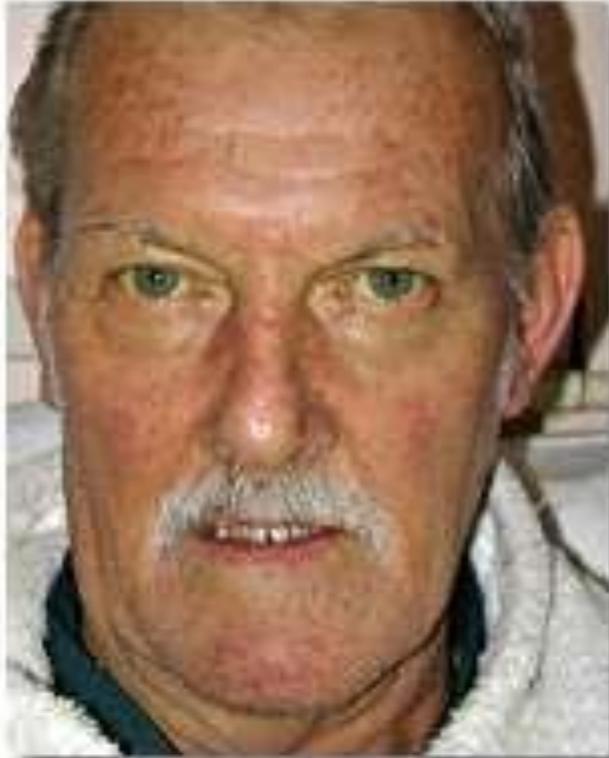
Rectal Bleeding

- ▶ Fresh rectal bleeding (hematochezia) indicates a disorder in the anal canal, rectum or colon
- ▶ Causes :
 - Hemorrhoids
 - Anal fissure
 - Colorectal polyps
 - Colorectal cancer
 - Inflammatory bowel disease
 - Ischaemic colitis
 - Diverticular disease
 - Vascular malformation
- Blood may be mixed with stool, coat the surface of normal stool, or be seen on the toilet paper.
- Massive upper GI can cause fresh rectal bleeding.

Jaundice

- Yellowish discoloration of the skin, sclera, and mucus membranes due to increased serum bilirubin concentration (hyperbilirubinemia)
- NORMAL RANGE (0.3 – 1.0 mg/dl)
- LEVEL ABOVE (3mg/dl →CLINICAL JAUNDICE)
- Total bile flow-600ml/day(500-1000ml/day)

Jaundic



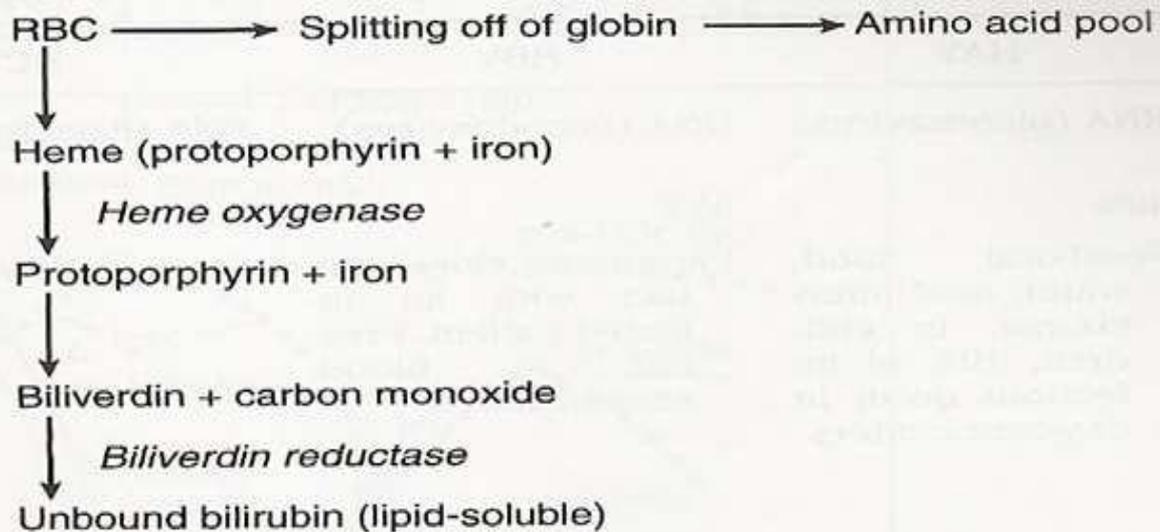
Jaundice is most easily seen
in the sclera



Bilirubin metabolism

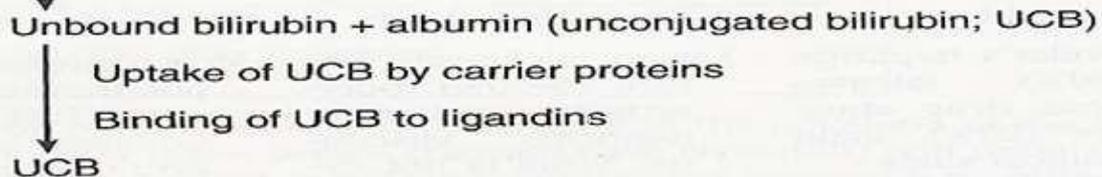
- ▶ Unconjugated bilirubin is water insoluble and binds to plasma albumin; it is therefore not filtered by the renal glomeruli.
- ▶ In jaundice from unconjugated hyperbilirubinaemia, the urine colour is a normal .
- ▶ Bilirubin is conjugated to form bilirubin diglucuronide in the liver and excreted in bile, producing its characteristic green colour.
- ▶ In conjugated hyperbilirubinaemia, the urine is dark brown due to the presence of conjugated bilirubin.
- ▶ In the colon, conjugated bilirubin is metabolised by bacteria to stercobilinogen and stercobilin, which contribute to the brown colour of stool. Stercobilinogen is absorbed from the bowel and excreted in the urine as urobilinogen, a colourless, water-soluble compound.

Macrophage destruction



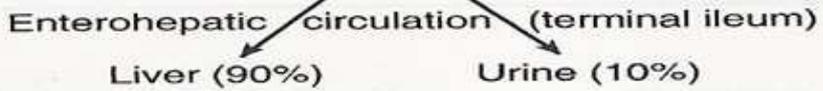
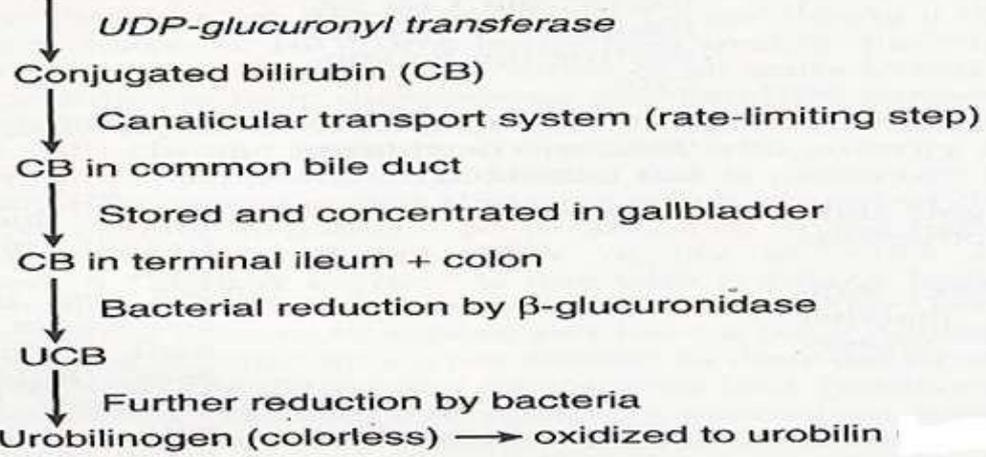
Peripheral blood

Liver



Bile

Bowel



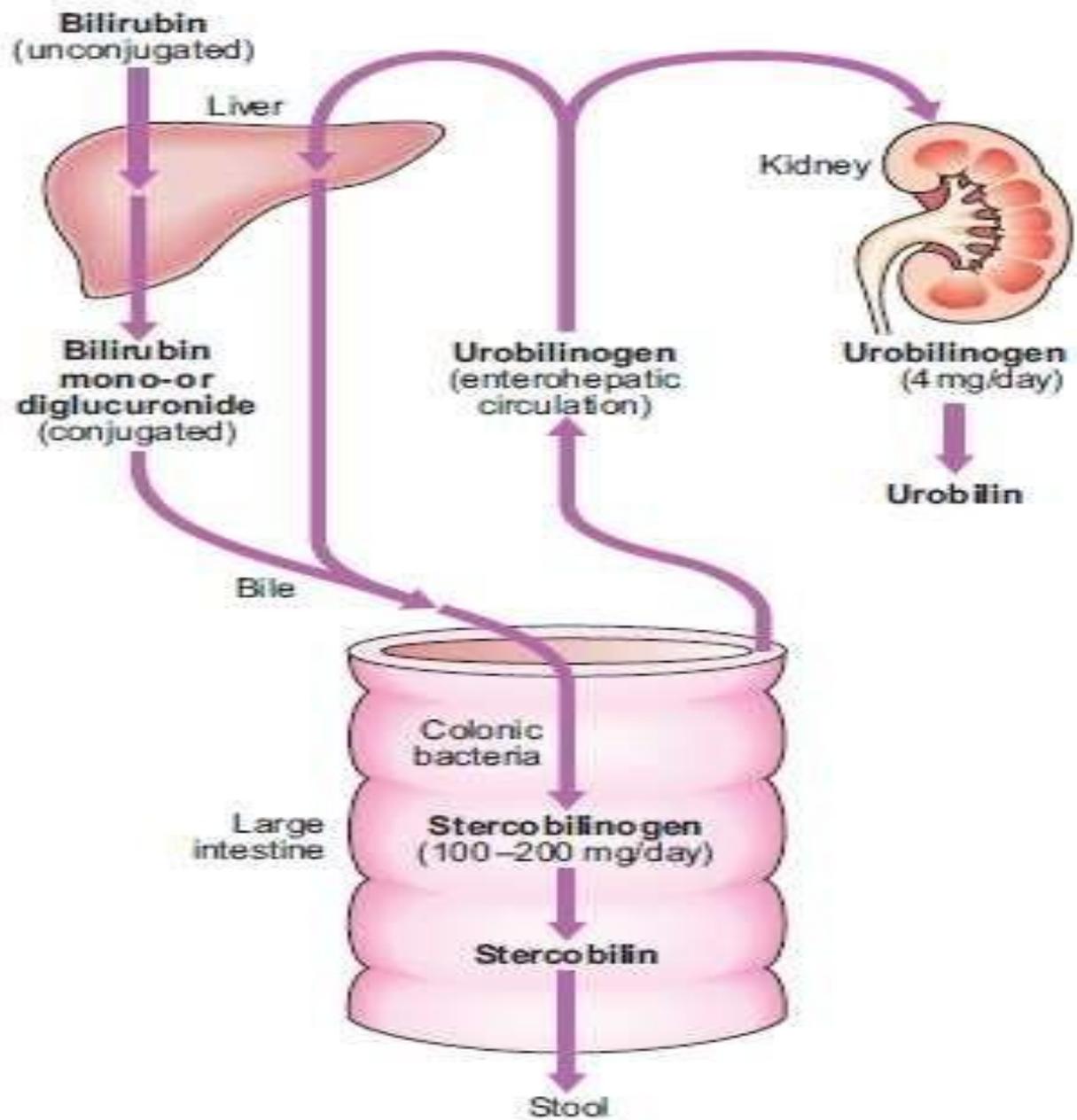


Fig. 8.9 Pathway of bilirubin excretion.

Jaundice causes

Prehepatic /
Hemolytic
jaundice

Hepatic jaundice

Posthepatic /
Obstructive/
Surgical jaundice

PRE HEPATIC	HEPATIC	POST HEPATIC
<p>Excessive amount of unconjugated bilirubin is presented to the liver due to excessive hemolysis, Gilbert syndrome</p> <p>+anemic pallor (lemon jaundice)</p>	<p>Impaired cellular uptake, defective conjugation or abnormal secretion of bilirubin by the liver cell</p> <p>Caused by liver diseases</p>	<p>Impaired excretion due to mechanical obstruction of bile flow to intestine</p> <p>-Also called obstructive / surgical jaundice</p> <p>++itching</p>
<p>Elevated unconjugated bilirubin in serum</p> <ul style="list-style-type: none"> - Stool : normal - Urine : normal 	<p>Mixed conjugated and unconjugated bilirubin is elevated.</p> <ul style="list-style-type: none"> -stool : normal (there is stercobilin) -Urine : dark (elevated conjugated bilirubin CB) 	<p>Elevated conjugated bilirubin in serum</p> <ul style="list-style-type: none"> -stool : pale (no stercobilin) -Urine : dark (elevated CB)

6.6 Common causes of jaundice

Increased bilirubin production

- Haemolysis (unconjugated hyperbilirubinaemia)

Impaired bilirubin excretion

- Congenital:
 - Gilbert's syndrome (unconjugated)
- Hepatocellular:
 - Viral hepatitis
 - Cirrhosis
 - Drugs
 - Autoimmune hepatitis
- Intrahepatic cholestasis:
 - Drugs
 - Primary biliary cirrhosis
- Extrahepatic cholestasis:
 - Gallstones
 - Cancer: pancreas, cholangiocarcinoma

Jaundice

6.7 Urine and stool analysis in jaundice

	Urine			Stools
	Colour	Bilirubin	Urobilinogen	Colour
Unconjugated	Normal	–	++++	Normal
Hepatocellular	Dark	++	++	Normal
Obstructive	Dark	++++	–	Pale



8.24 Checklist for the history of jaundice

- Appetite and weight change
- Abdominal pain, altered bowel habit
- Gastrointestinal bleeding
- Pruritus, dark urine, rigors
- Drug and alcohol history
- Past medical history (pancreatitis, biliary surgery)
- Previous jaundice or hepatitis
- Blood transfusions (hepatitis B or C)
- Family history, e.g. congenital spherocytosis, haemochromatosis
- Sexual and contact history (hepatitis B or C)
- Travel history and immunisations (hepatitis A)
- Skin tattooing (hepatitis B or C)

• **colour of stools (normal or pale) and urine (normal or dark)**

• painful obstructive jaundice is usually due to gallstone/choledocholithiasis, if fever present → cholangitis

• Painless longstanding deep jaundice with weight loss usually due to malignancy (head of pancreas, GB, bile duct)

Alarming symptoms

- ▶ Persistent vomiting
- ▶ Dysphagia
- ▶ Fever
- ▶ Weight loss
- ▶ GI bleeding
- ▶ Anemia
- ▶ Painless, watery, high-volume diarrhoea
- ▶ Nocturnal symptoms disturbing sleep

6.4 Typical clinical features in patients with an 'acute abdomen'

Condition	History	Examination
Acute appendicitis	Nausea, vomiting, central abdominal pain that later shifts to right iliac fossa	Fever, tenderness, guarding or palpable mass in right iliac fossa, pelvic peritonitis on rectal examination
Perforated peptic ulcer with acute peritonitis	Vomiting at onset associated with severe acute-onset abdominal pain, previous history of dyspepsia, ulcer disease, non-steroidal anti-inflammatory drugs or glucocorticoid therapy	Shallow breathing with minimal abdominal wall movement, abdominal tenderness and guarding, board-like rigidity, abdominal distension and absent bowel sounds
Acute pancreatitis	Anorexia, nausea, vomiting, constant severe epigastric pain, previous alcohol abuse/cholelithiasis	Fever, periumbilical or loin bruising, epigastric tenderness, variable guarding, reduced or absent bowel sounds
Ruptured aortic aneurysm	Sudden onset of severe, tearing back/loin/abdominal pain, hypotension and past history of vascular disease and/or high blood pressure	Shock and hypotension, pulsatile, tender, abdominal mass, asymmetrical femoral pulses
Acute mesenteric ischaemia	Anorexia, nausea, vomiting, bloody diarrhoea, constant abdominal pain, previous history of vascular disease and/or high blood pressure	Atrial fibrillation, heart failure, asymmetrical peripheral pulses, absent bowel sounds, variable tenderness and guarding
Intestinal obstruction	Colicky central abdominal pain, nausea, vomiting and constipation	Surgical scars, hernias, mass, distension, visible peristalsis, increased bowel sounds
Ruptured ectopic pregnancy	Premenopausal female, delayed or missed menstrual period, hypotension, unilateral iliac fossa pain, pleuritic shoulder-tip pain, 'prune juice'-like vaginal discharge	Suprapubic tenderness, periumbilical bruising, pain and tenderness on vaginal examination (cervical excitation), swelling/fullness in fornix on vaginal examination
Pelvic inflammatory disease	Sexually active young female, previous history of sexually transmitted infection, recent gynaecological procedure, pregnancy or use of intrauterine contraceptive device, irregular menstruation, dyspareunia, lower or central abdominal pain, backache, pleuritic right upper quadrant pain (Fitz-Hugh–Curtis syndrome)	Fever, vaginal discharge, pelvic peritonitis causing tenderness on rectal examination, right upper quadrant tenderness (perihepatitis), pain/tenderness on vaginal examination (cervical excitation), swelling/fullness in fornix on vaginal examination

Past medical / surgical History

- ▶ History of a similar problem may suggest the diagnosis.
- ▶ Document previous visits / admissions and is it related to the same complaints ?
- ▶ Document any chronic medical illnesses and how it is managed ? / is it controlled ?
- ▶ Previous abdominal surgeries with details of timing /type of procedure/ lap vs open / any post op complication/ post op course/performing surgeon.

6.8 Examples of drug-induced gastrointestinal conditions

Symptom	Drug
Weight gain	Oral glucocorticoids
Dyspepsia and gastrointestinal bleeding	Aspirin Non-steroidal anti-inflammatory drugs
Nausea	Many drugs, including selective serotonin reuptake inhibitor antidepressants
Diarrhoea (pseudomembranous colitis)	Antibiotics Proton pump inhibitors
Constipation	Opioids
Jaundice: hepatitis	Paracetamol (overdose) Pyrazinamide Rifampicin Isoniazid
Jaundice: cholestatic	Flucloxacillin Chlorpromazine Co-amoxiclav
Liver fibrosis	Methotrexate

Drug History

- OTC drugs
- prescribed meds
- herbal remedies
- other illicit drugs



■ Family History

- Inflammatory bowel disease (Crohn's, UC) , any GI malignancies, Syndromes like FAP, HNPCC, CDH1 ... etc), hemochromatosis, Wilson, autoimmune hepatitis, primary biliary cirrhosis,

■ Social history

- Diet hx (amount, type, calories)
- Alcohol
- Occupation, place of living, any animals around (dogs, sheeps)



Thank you