

Abdominal Exam

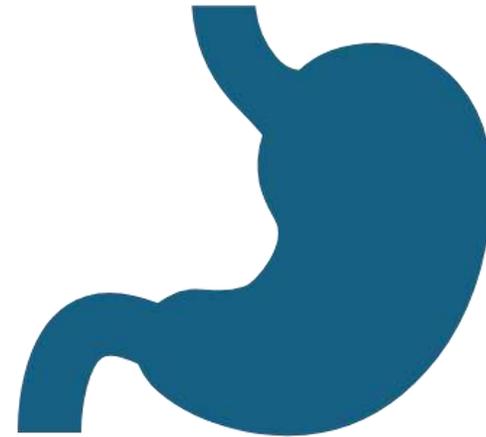
Dr. Mohammed Alsbou

MD, MSc, MRCS

Mu'tah University

Faculty Of Medicine

Department of General Surgery



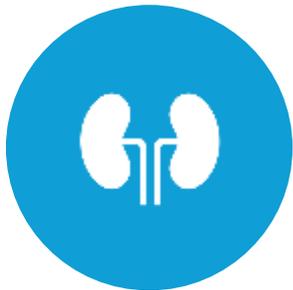
Gastrointestinal System



Alimentary tract
from the mouth to
the anus



liver and biliary
system (including
the gallbladder)



Pancreas



Spleen

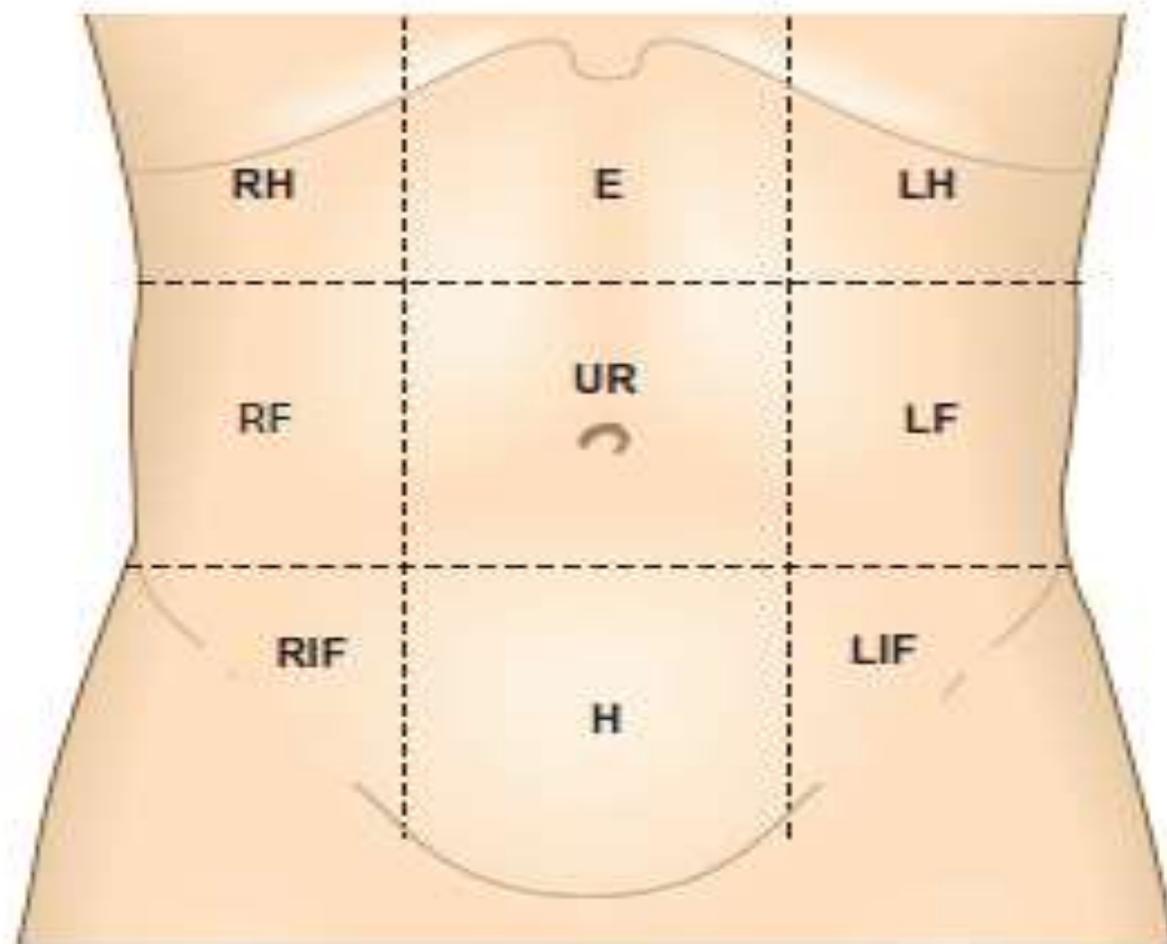
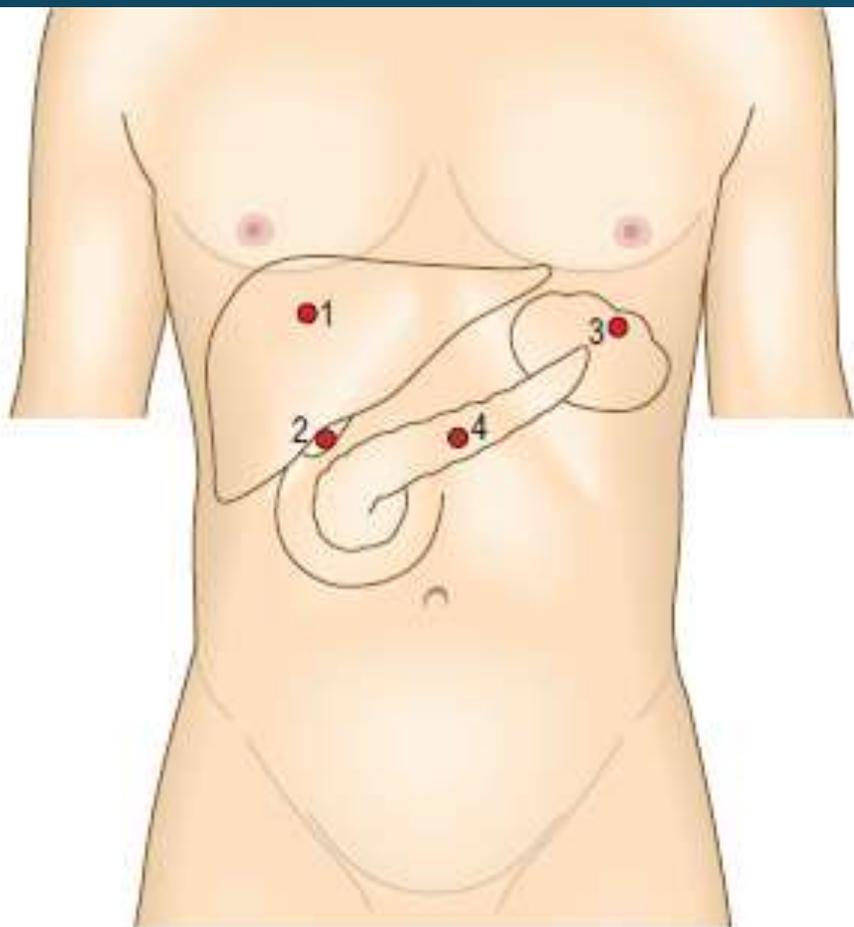
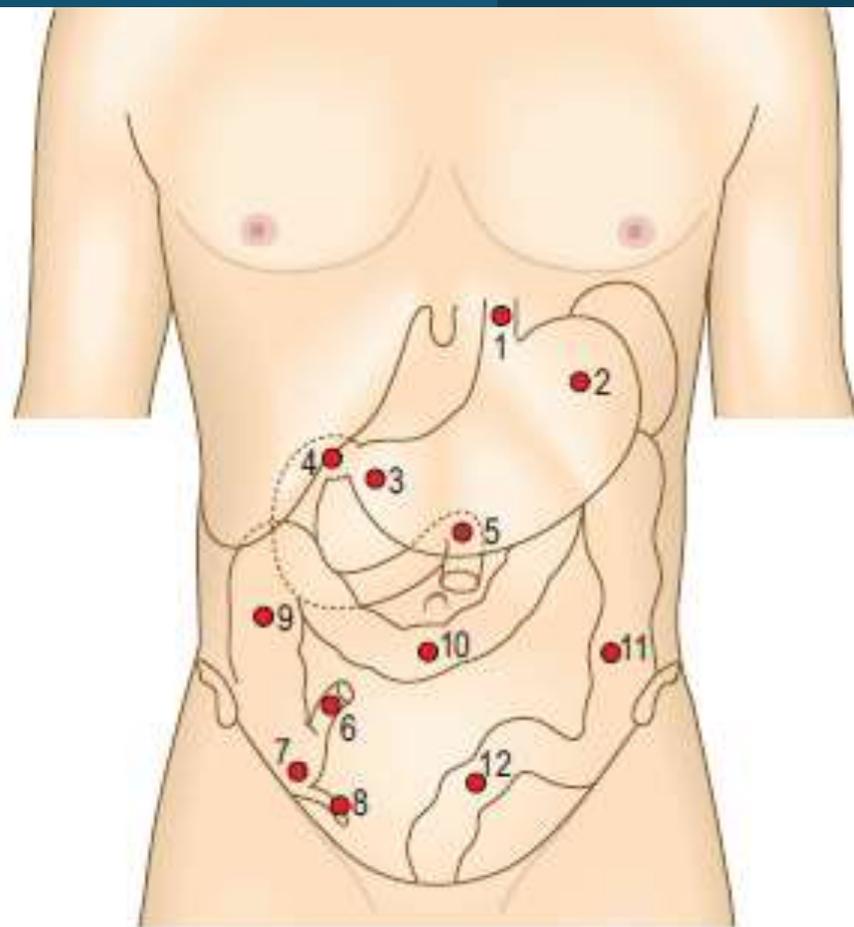


Fig. 8.3 Regions of the abdomen. RH, right hypochondrium; RF, right flank or lumbar region; RIF, right iliac fossa; E, epigastrium; UR, umbilical region; H, hypogastrium or suprapubic region; LH, left hypochondrium; LF, left flank or lumbar region; LIF, left iliac fossa.



A

- | | |
|---------------|------------|
| 1 Liver | 3 Spleen |
| 2 Gallbladder | 4 Pancreas |



B

- | | |
|--------------------------|---------------------------------|
| 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 |

Abdominal Pain

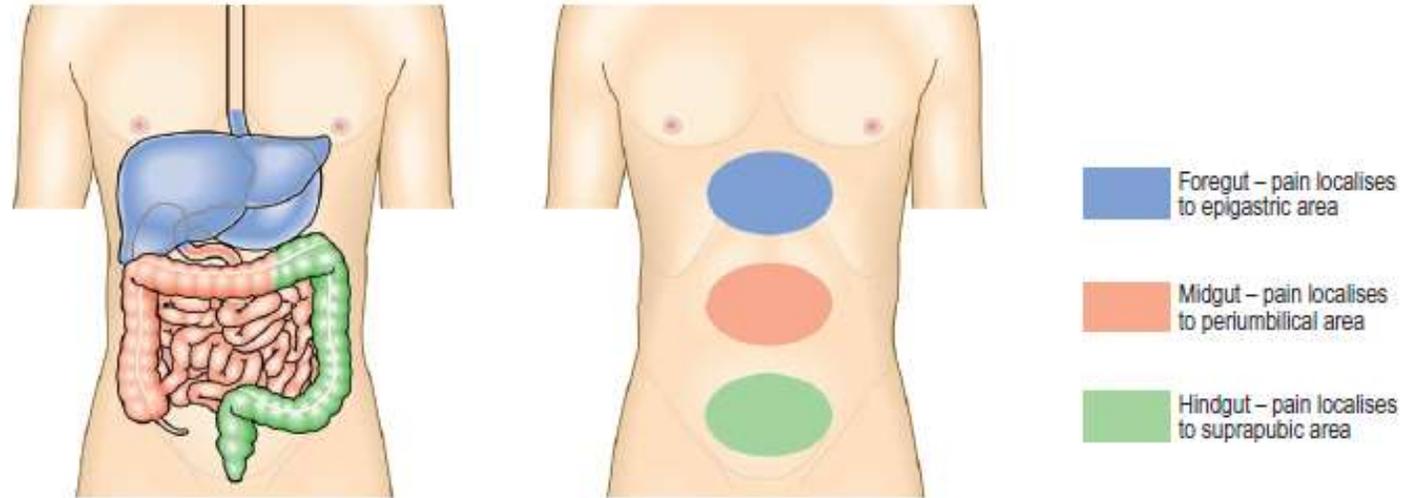
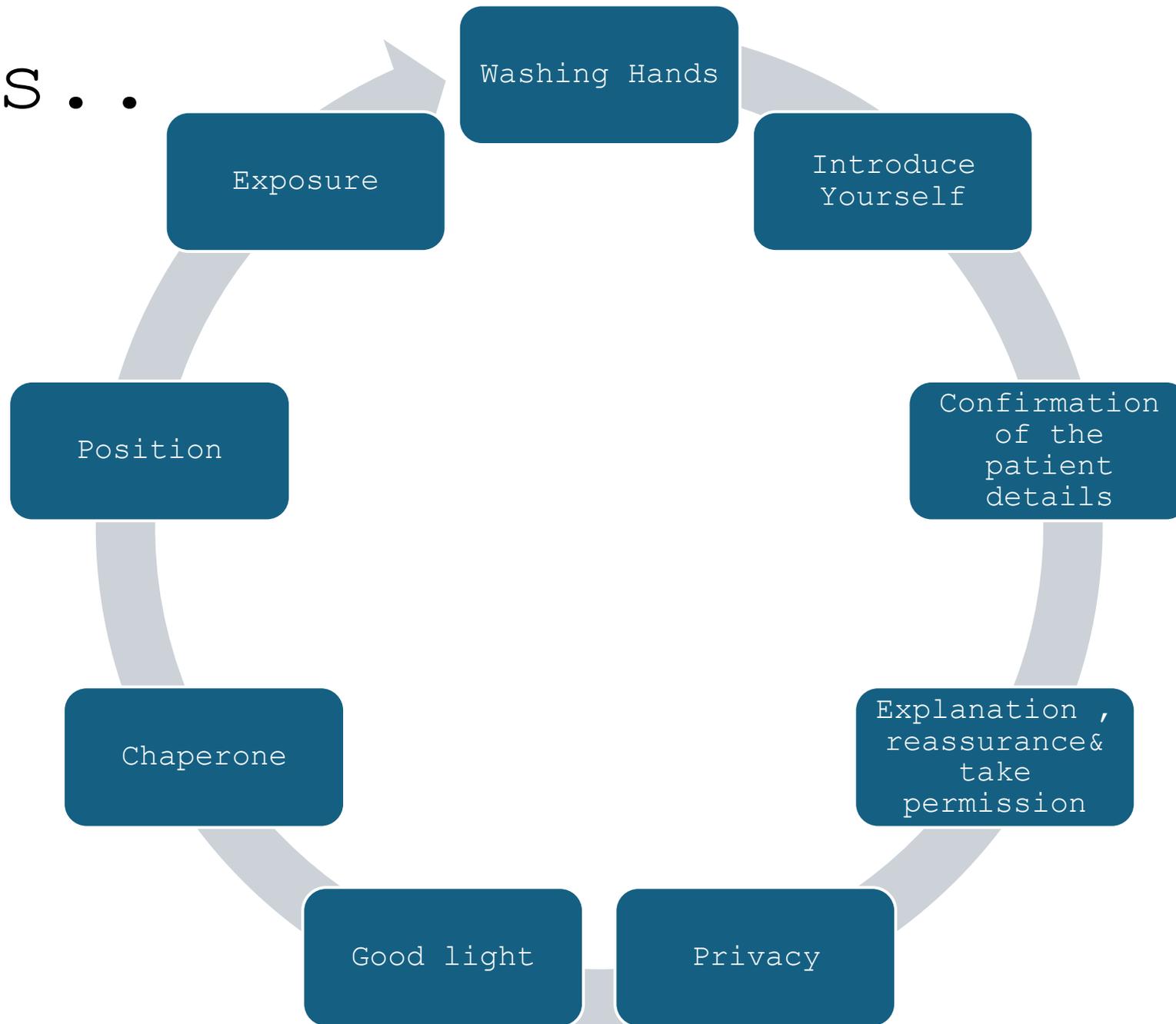


Fig. 8.5 Abdominal pain. Perception of visceral pain is localised to the epigastric, umbilical or suprapubic region, according to the embryological origin of the affected organ.

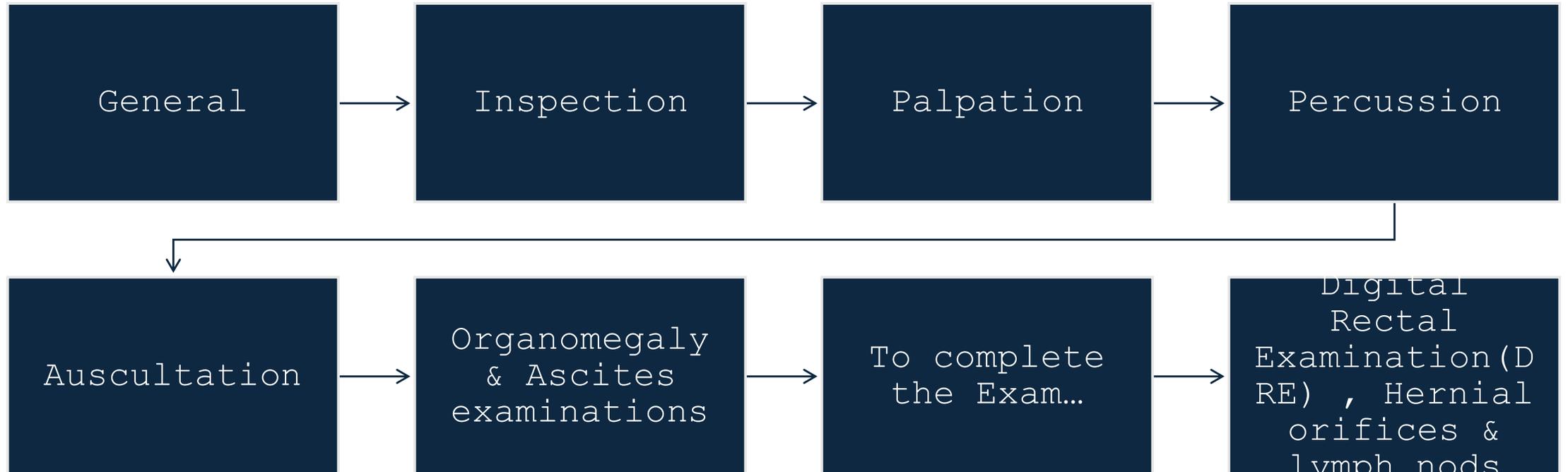
Abdominal
Exam...



Settings..



Steps...



General



Examine the patient in good light and warm surroundings.



Position the patient comfortably **supine** with the head resting on only one or two pillows to relax the abdominal wall muscles.



Look at the teeth, tongue and buccal mucosa



Note any smell, e.g. alcohol, fetor hepaticus



Expose the abdomen from the xiphisternum to the **symphysis pubis**, leaving the chest and legs covered. ??
Nipple to mid thigh ??

General looks

in pain

Sweating

Distress

Cachectic

Pallor, jaundice

Obese

Hands for *clubbing *koilonychia (spoon-shaped nails)

* signs of liver disease, including leukonychia and palmar erythema.



clubbing



koilonychia



leukonychia



palmar erythema.

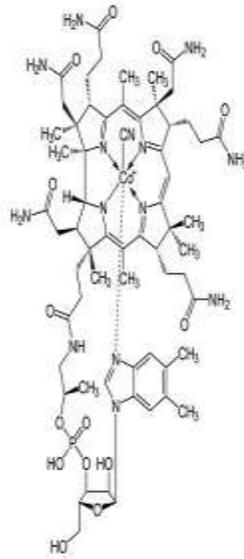
- **Mouth** and throat for aphthous ulcers, which are common in gluten enteropathy and inflammatory bowel disease.



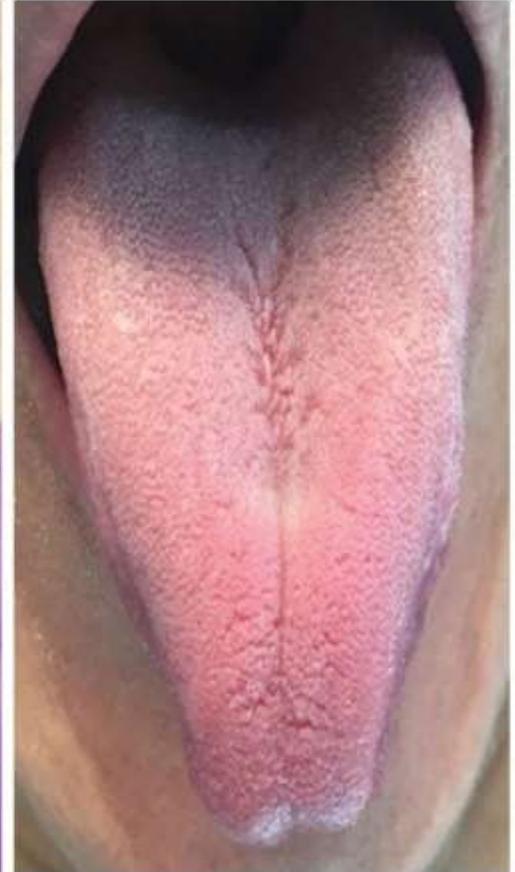
Tongue

Atrophic glossitis

vitamin B₁₂
deficiency



Atrophic glossitis



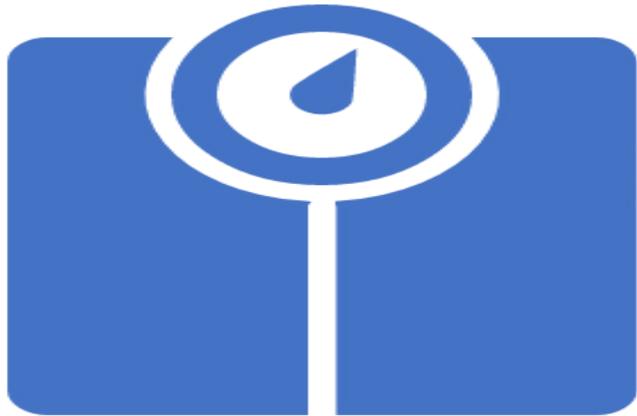
normal tongue

Eye

- Ask the patient to look down and retract the upper eyelid to expose the sclera; look to see if it is yellow in natural light



Nutritional state



Record the height, weight, waist circumference and the patient's body mass index



Look for abdominal striae, which indicate rapid weight gain, previous pregnancy or, rarely, Cushing's syndrome. Loose skin folds signify recent weight loss.



Features of chronic liver disease

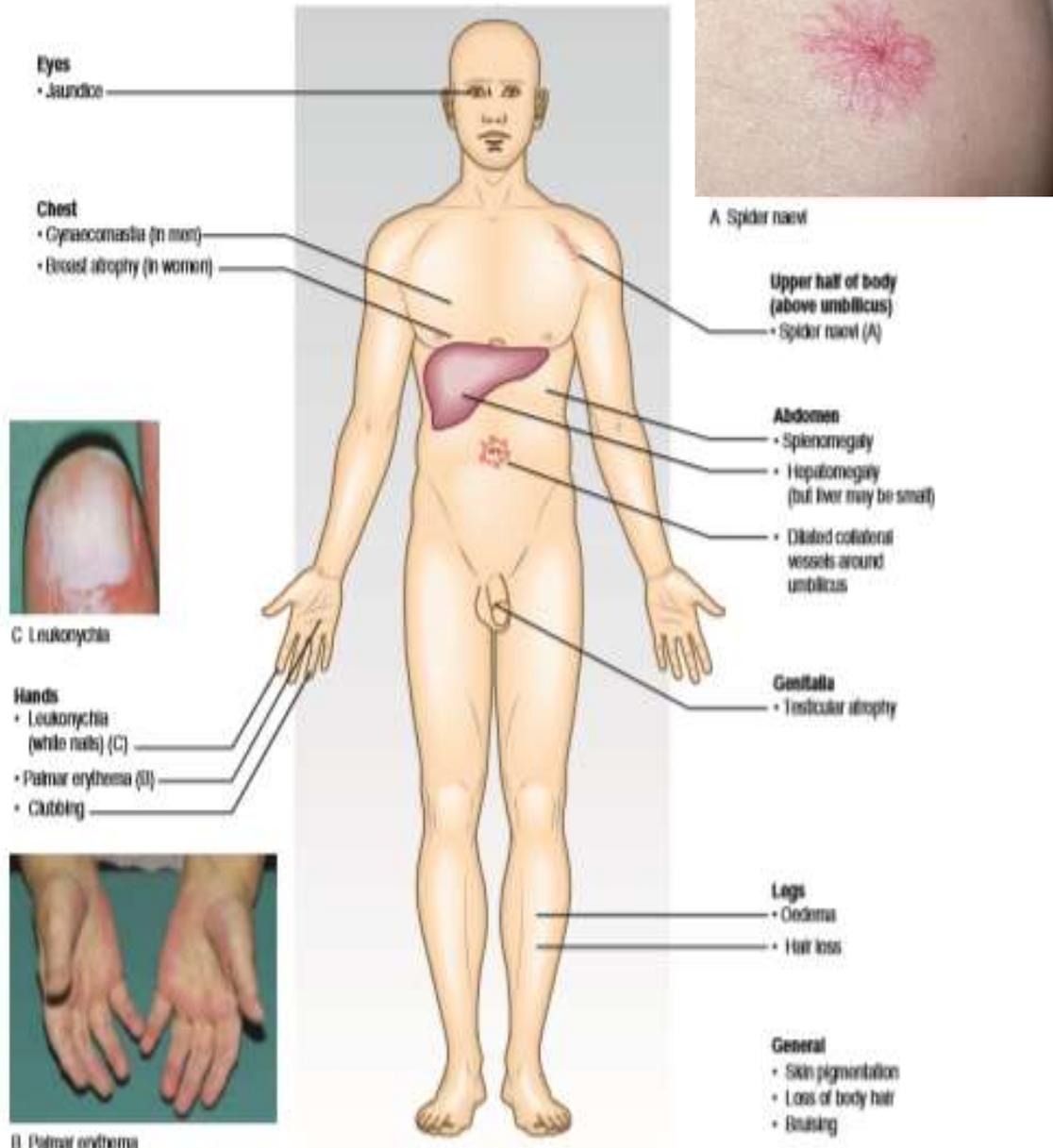


Fig. 8.11 Features of chronic liver disease.



- consists of visual examination of the abdomen **with note** made of the shape of the abdomen, skin abnormalities, abdominal masses, and the movement of the abdominal wall with respiration.
- **Abnormalities detected** on inspection provide **clues** to intra-abdominal pathology; these are further investigated with auscultation and palpation.

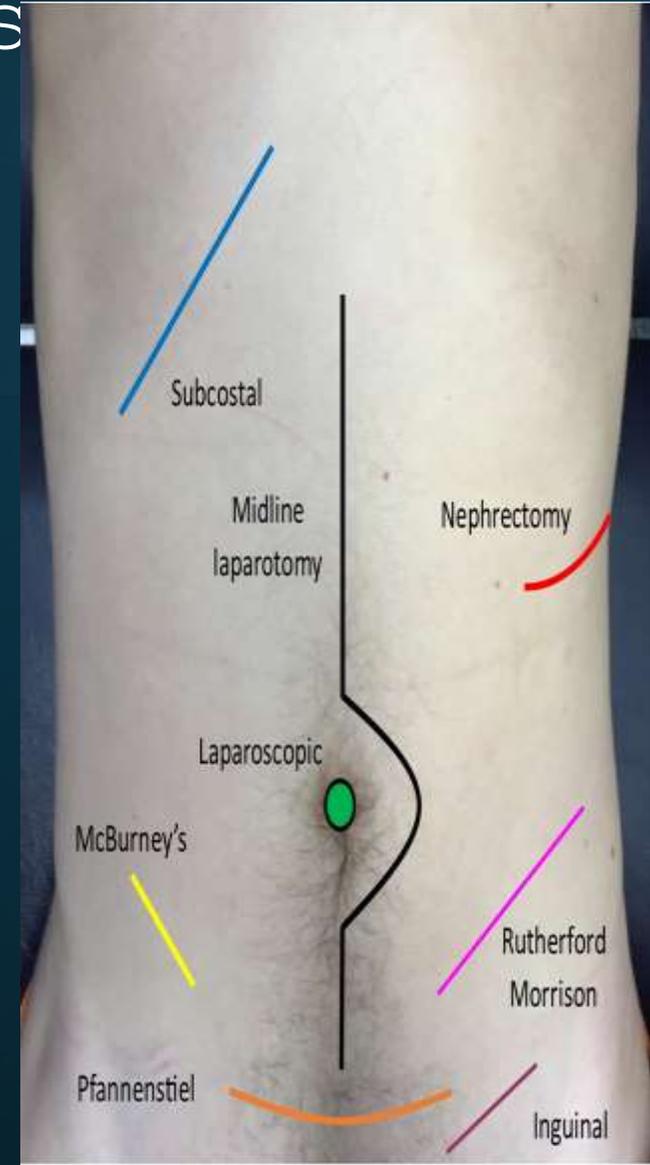
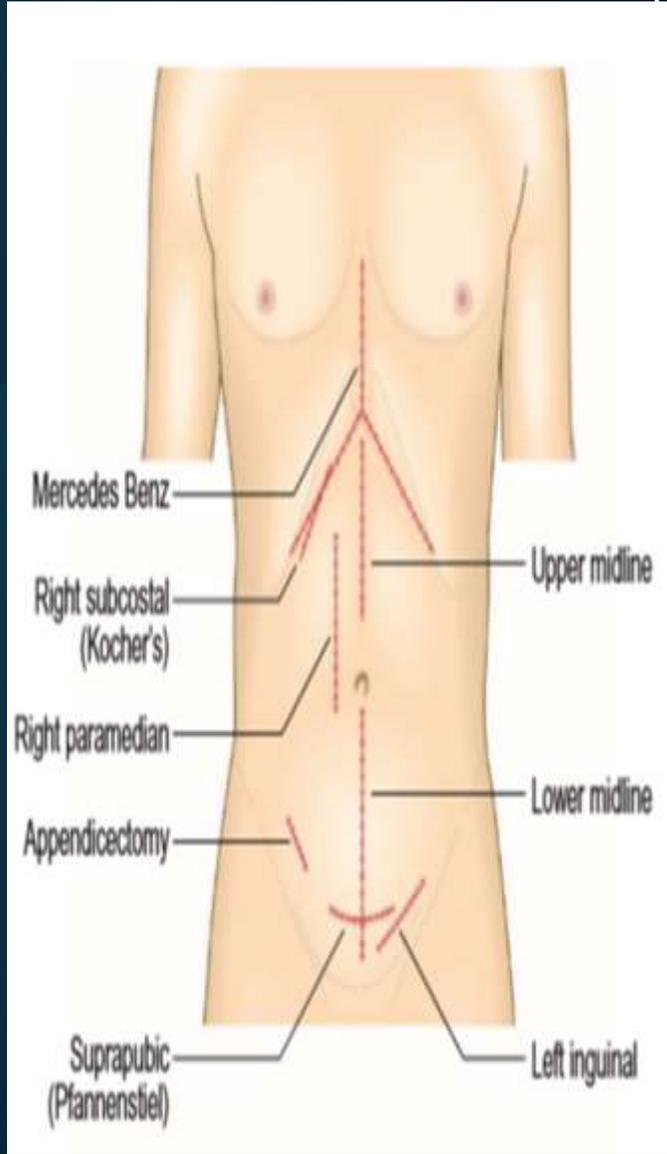
Start inspection from
the **foot of the bed**

- Obvious abdominal findings
- Abdominal symmetry
- Shape of abdomen:
flat, distended
- umbilicus
- Stoma bags
- Drains - wound drains,
abdominal drains

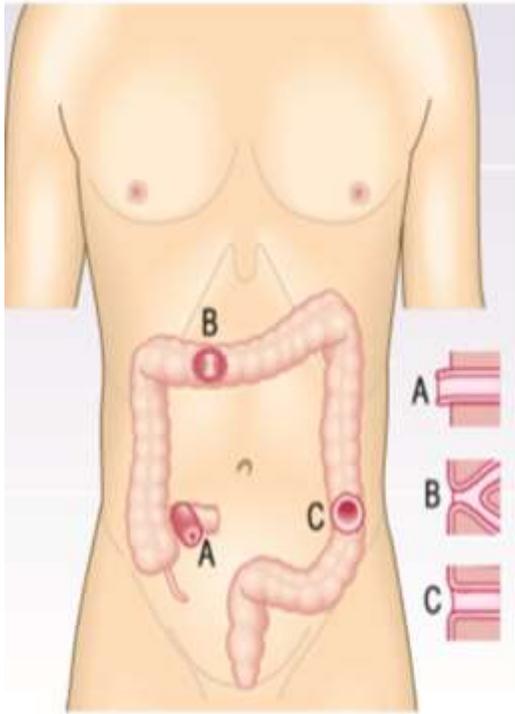
Stand to the **right side**
of the patient

- Movement of abdominal
wall with respiration
- Visible peristalsis,
- Visible pulsation
- Dilated vein,
discoloration,
pigmentation
- Presence of scar :
site , shape: neat,
ugly, wide, bulge
- Examine for
divaricated recti
- Ask patient raises the
head off the bed or

Abdominal scars



stomas





shutterstock.com · 1424067359





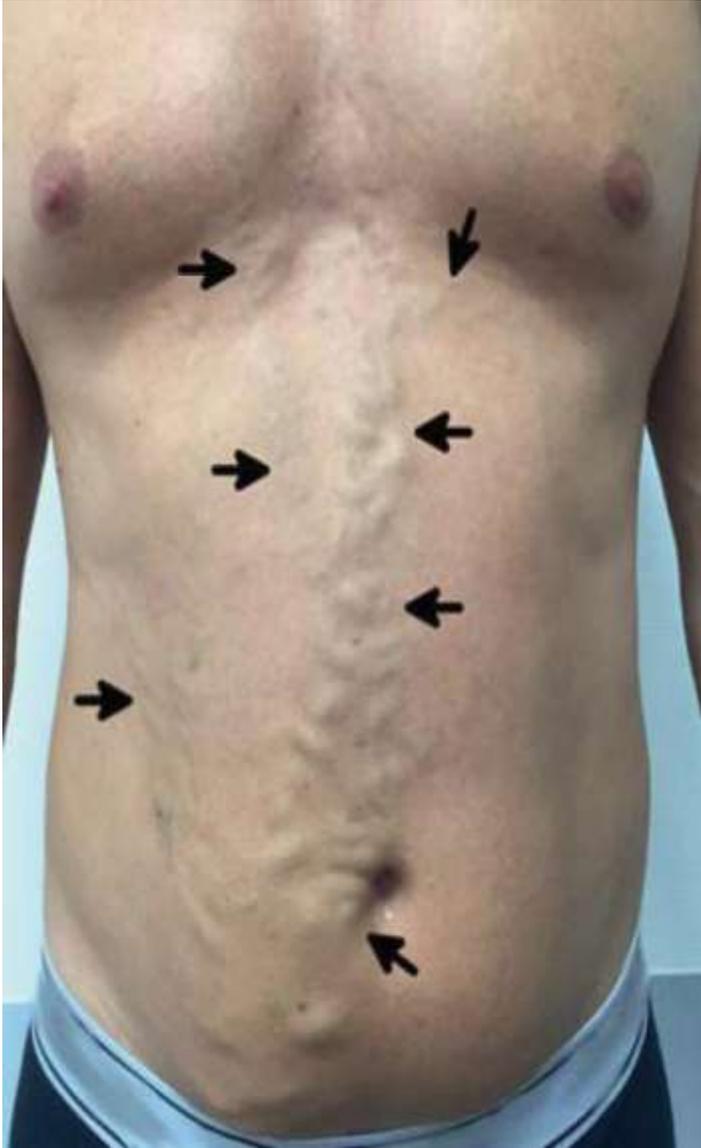
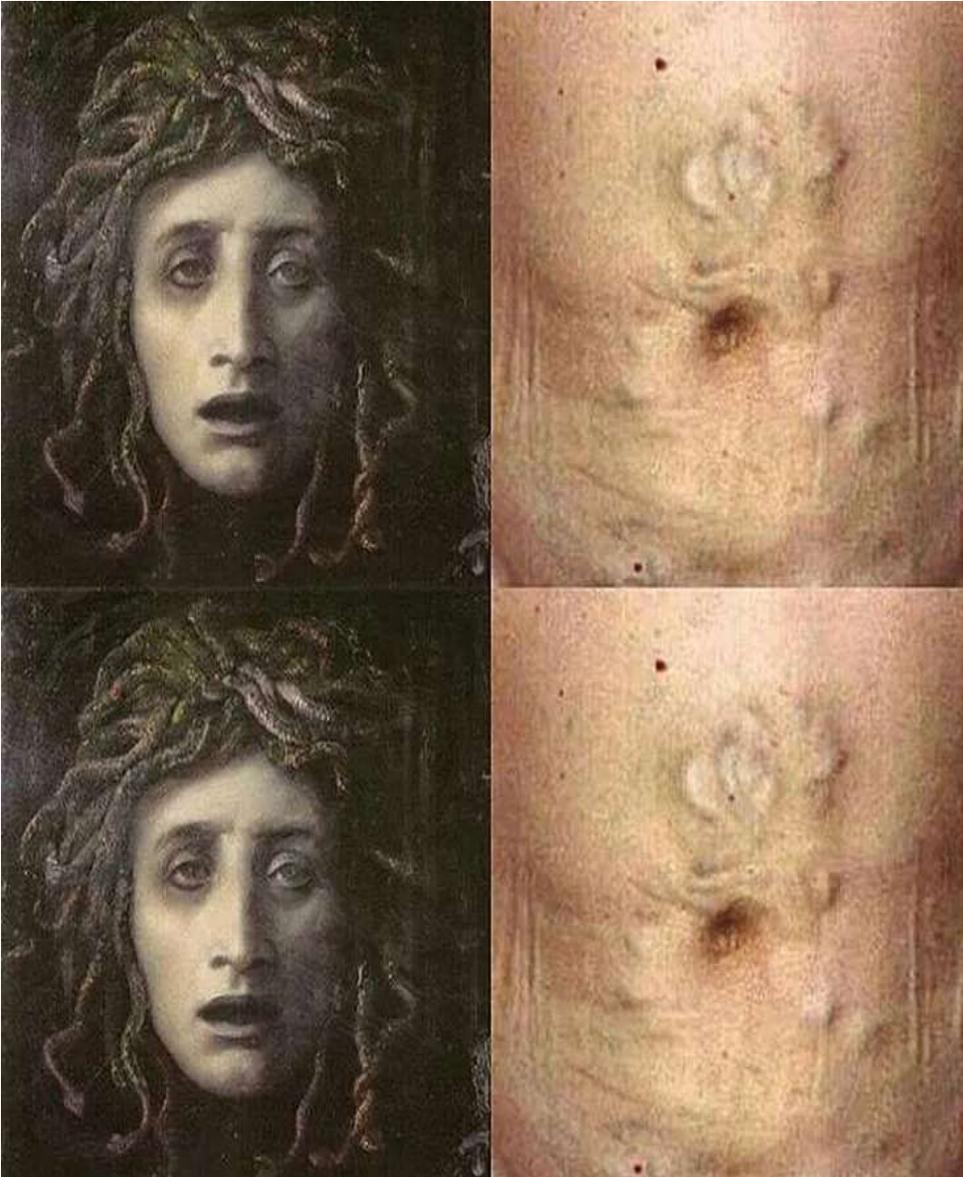


Divarication of Recti





Caput Medusae



Palpation



1

Ensure that your hands are **warm**.

2

If the bed is low, kneel beside it.

3

Ask the Pt. to place his arms by **the sides** to help relax the abdominal wall.

4

Use your **right hand**, keeping it **flat** and in **contact** with the abdominal wall.

5

Observe the Pt. **face** for any sign of discomfort

6

Ask if any pain is and to report **any tenderness** during palpation.

7

Begin with light **superficial palpation** away from any site of pain.

8

Palpate **each region** Abdominal muscle tone, Tenderness, Superficial masses and Palpable cough impulse

9

Repeat with **deeper palpation**.

Describe any **mass** using the basic principles:

Site

Size

Shape

Surface

Consistency

Tenderness

Temperature

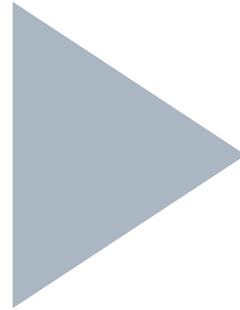
Pulsating

Transillumination

whether it moves on respiration

Mass fixed or mobile?

mass is
superficial and
in the abdominal
wall rather
than within the
abdominal
cavity, ask the
patient to
tense the
abdominal
muscles by
lifting his



→ an abdominal
wall mass will
still be
palpable,
whereas an
intra-abdominal
mass **will not.**

Epigastric mass

- Gastric cancer
- Pancreatic cancer
- Aortic aneurysm

Hepatomegaly

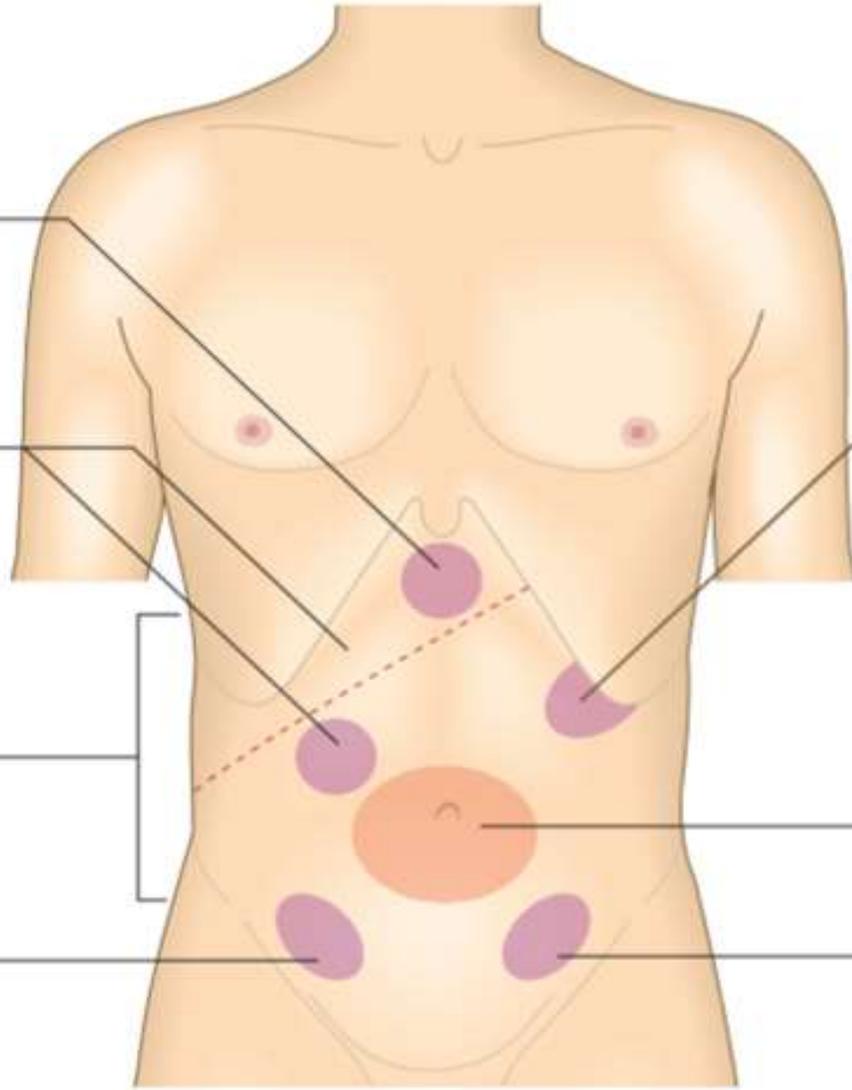
- Palpable liver not always enlarged
- Always percuss upper border
- Palpable gallbladder

Generalised distension

- Fat (obesity)
- Fluid (ascites)
- Flatus (obstruction/ileus)
- Faeces (constipation)
- Fetus (pregnancy)

Right iliac fossa mass

- Caecal cancer
- Crohn's disease
- Appendix abscess



Left upper quadrant mass

- ? Spleen
Edge
Can't get above it
Moves towards right iliac fossa on inspiration
Dull percussion note to 9-11th ribs mid-axillary line
Notch
- ? Kidney
Rounded
Can get above it
Moves inferiorly on inspiration
Resonant to percussion above it
Ballotable

Tender to palpation

- ? Peritonitis
Guarding
Rebound
Absent bowel sounds
Rigidity
- ? Obstruction
Distended
Tinkling bowel sounds
Visible peristalsis

Left iliac fossa mass

- Sigmoid colon cancer
- Constipation
- Diverticular mass



Muscle tone : guarding and rigidity

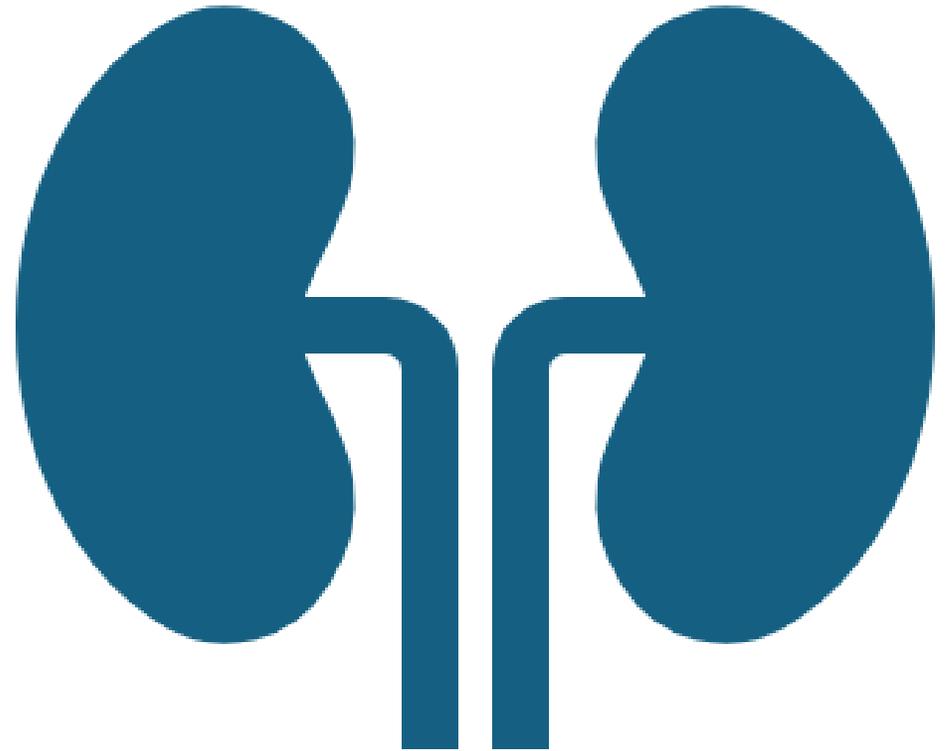


Abdominal Rigidity: This refers to the stiffness of the abdominal muscles, which can be felt when the abdomen is touched or pressed. It is an involuntary response that often occurs in reaction to pain or irritation in the abdominal cavity.



Guarding: This is the voluntary tensing of the abdominal muscles in response to pain or discomfort during palpation. It serves as a protective mechanism to prevent further pain from pressure on inflamed or injured organs. .

- Tenderness Discomfort during palpation may vary and be accompanied by resistance to palpation
- **Organs** : describe **size**, **surface**: smooth or irregular, **edge**: smooth or irregular, **consistency**: soft or hard, **tenderness** and

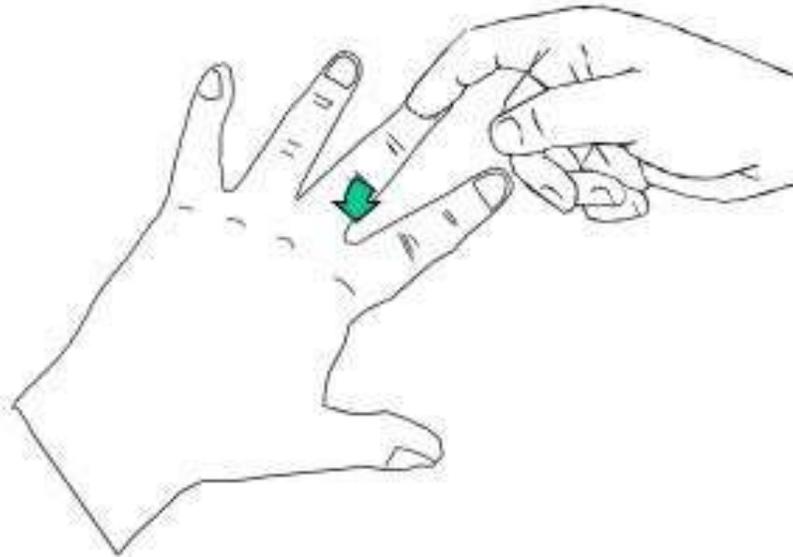


Percussion



Percussion

- General abdomen - should be resonant
- Organs
 - Liver - dull
 - Spleen - dull
 - Kidneys - resonant
 - Bladder - dull
- Ascites
 - Shifting dullness
 - Dullness peripheral
- Ovary
 - Dullness central



Auscultation

is performed for detection of **altered bowel sounds, rubs,** or **vascular bruits.**

Normal peristalsis creates bowel sounds that may be altered or absent by disease.

Irritation of serosal surfaces may produce a sound (rub) as an organ moves against the serosal surface.

Atherosclerosis may alter arterial blood flow so that a bruit is produced.



■ With the patient supine, place your stethoscope **diaphragm** to the right of the umbilicus and do not move it.

■ Listen for up to **2 minutes** before concluding that bowel sounds are absent. Bowel sounds **are gurgling** noises from the normal peristaltic activity of the gut. They normally occur **every 5-10 seconds**, but the frequency varies.

■ Listen above the umbilicus over the **aorta** for arterial bruits.

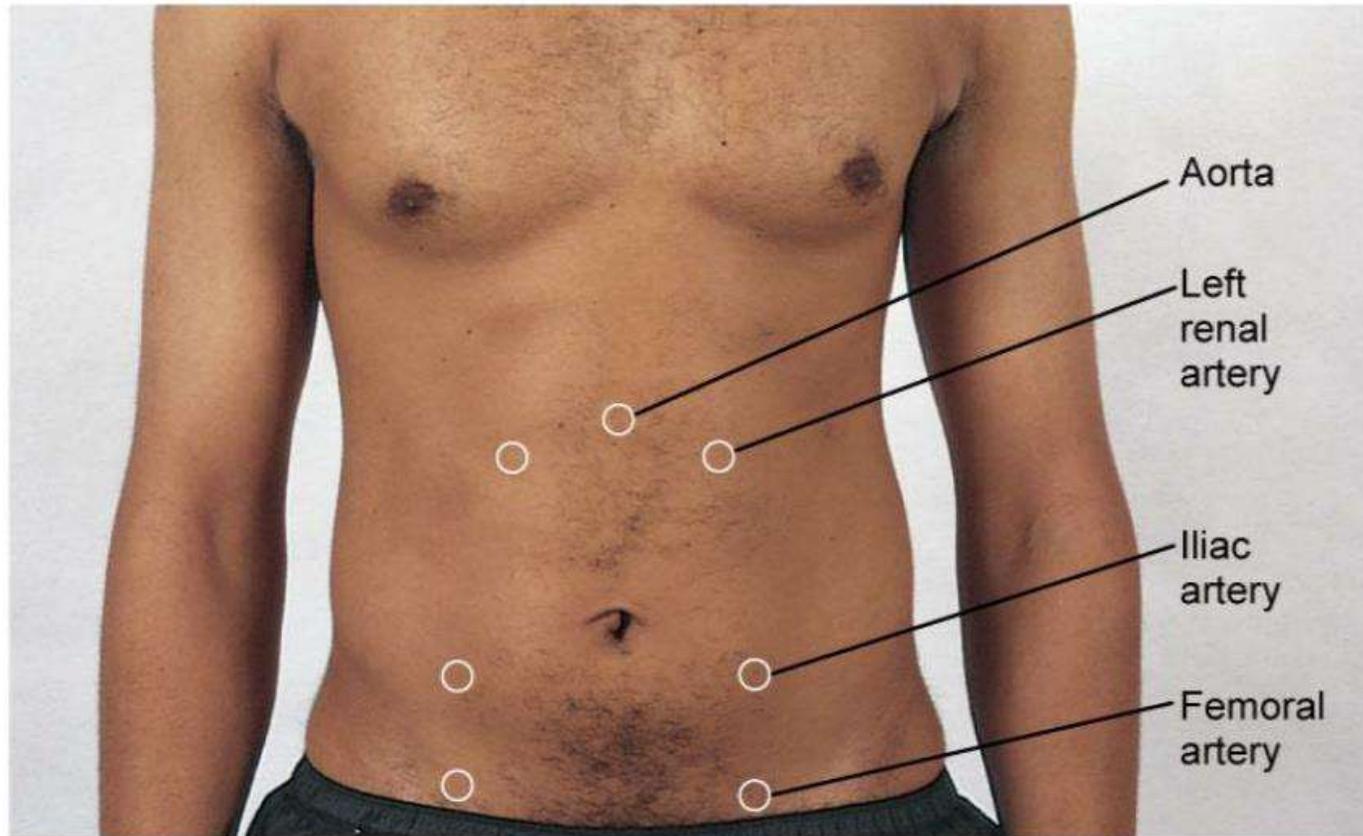
■ listen 2-3 cm above and lateral to the umbilicus for bruits from **renal artery** stenosis.

■ Listen over the **liver** for bruits. A friction rub, which sounds like rubbing your dry fingers together, may be heard over the liver (perihepatitis) or spleen (perisplenitis).

■ A **succussion splash sounds** like a half-filled water bottle being shaken. Explain the procedure to the patient, then shake the patient's abdomen by lifting him with both hands under his pelvis. An audible splash more than 4 hours after the patient has eaten or drunk anything indicates delayed gastric emptying, e.g. pyloric stenosis.



AUSCULTATION OF VASCULAR SOUNDS

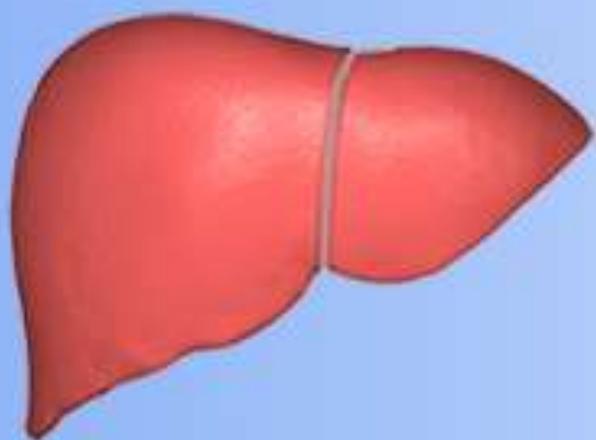




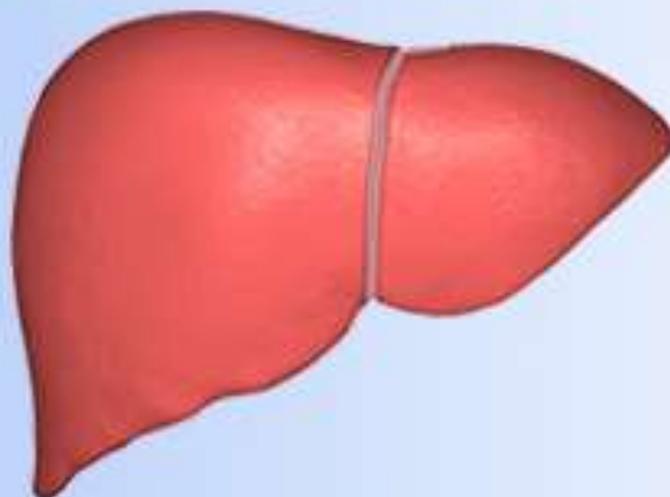
Examination for Organomegaly

∴

Hepatomegaly

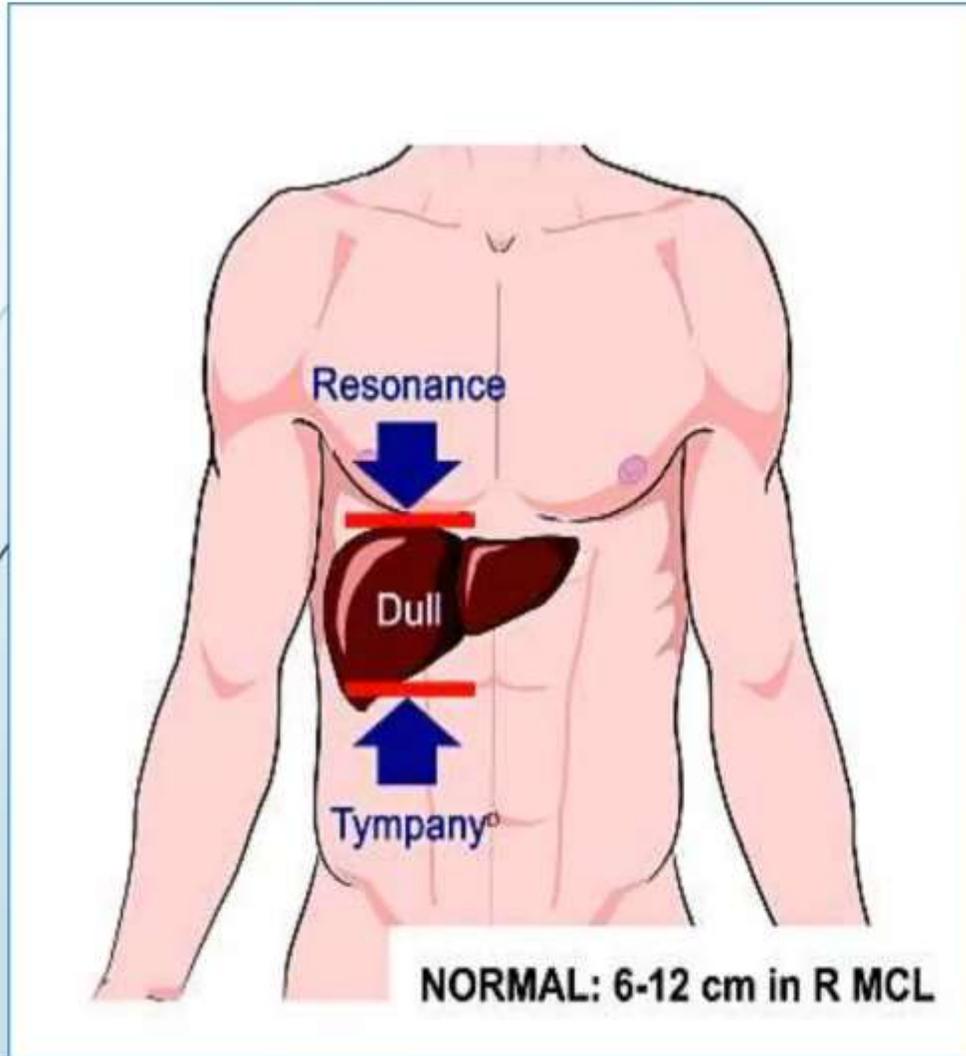


Healthy Liver



Enlarged Liver

Percussion –



► Liver dullness.

► Liver span –

- The liver span is the measurement (in centimeters) of the liver from its upper border, determined by percussion, to its lower border, determined by palpation.
- Normal liver size is 12-15cms in Ht extending from 5th rib or to the palpable border of Rt costal margin.
- Measurement is done to find out shrinkage or enlargement.

Ask the patient to hold his breath in full expiration.



Percuss downwards from the right fifth intercostal space in the mid-clavicular line, listening for the dullness that indicates the upper border of the liver.



Measure the distance in centimeters below the costal margin in the mid-clavicular line or from the upper border of dullness to the palpable liver edge.



palpate the right upper quadrant of the abdomen in the mid-clavicular line. As the liver descends, the inflamed gallbladder contacts the fingertips, causing pain and the sudden arrest of inspiration



8.33 Causes of hepatomegaly

Chronic parenchymal liver disease

- Alcoholic liver disease
- Hepatic steatosis
- Autoimmune hepatitis
- Viral hepatitis
- Primary biliary cirrhosis

Malignancy

- Primary hepatocellular cancer
- Secondary metastatic cancer

Right heart failure

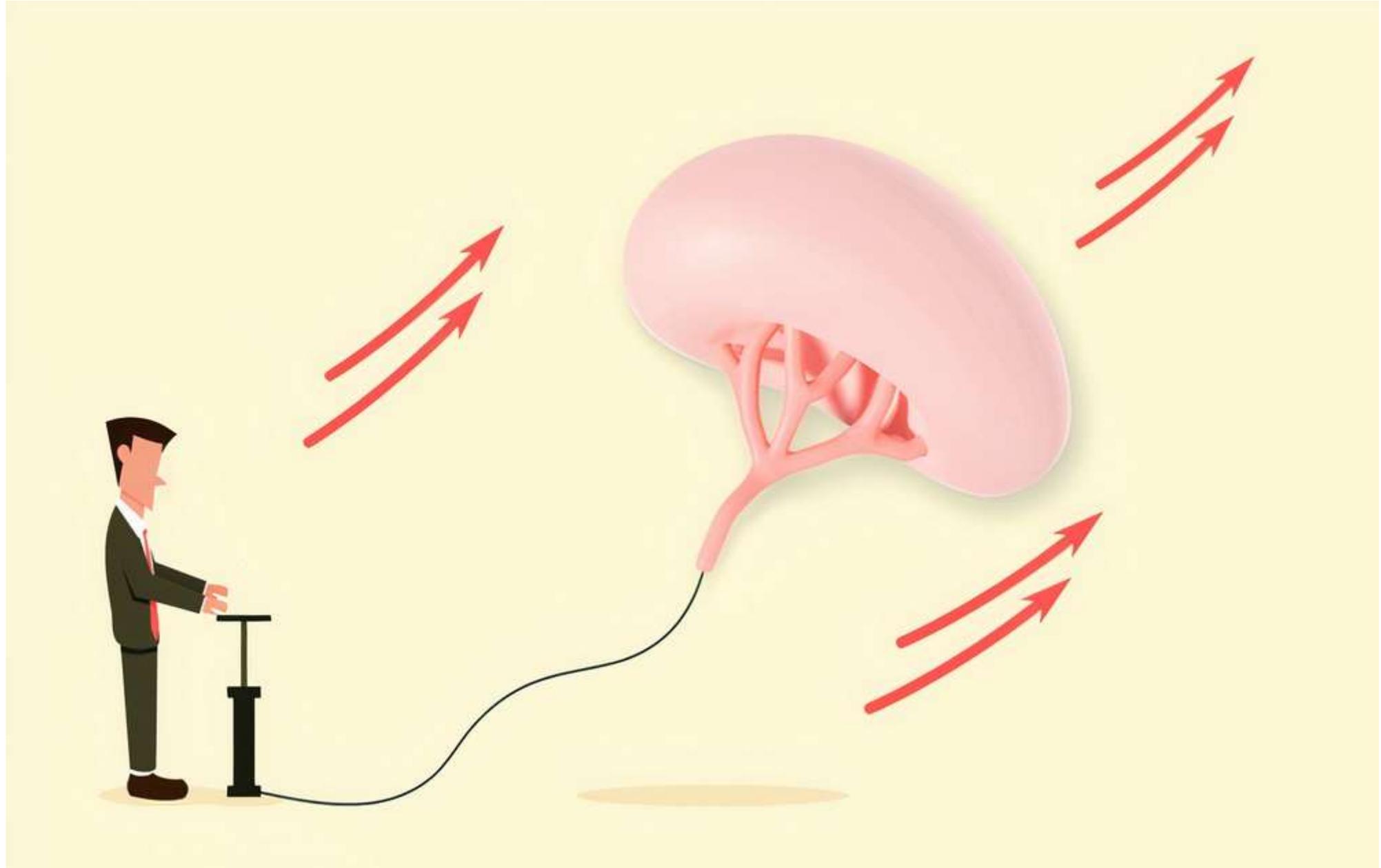
Haematological disorders

- Lymphoma
- Leukaemia
- Myelofibrosis
- Polycythaemia

Rarities

- Amyloidosis
- Budd–Chiari syndrome
- Sarcoidosis
- Glycogen storage disorders

Splenomegaly



Splenomegaly

Place your hand over the umbilicus. Keep your hand stationary and ask the patient to breathe in deeply through the mouth.

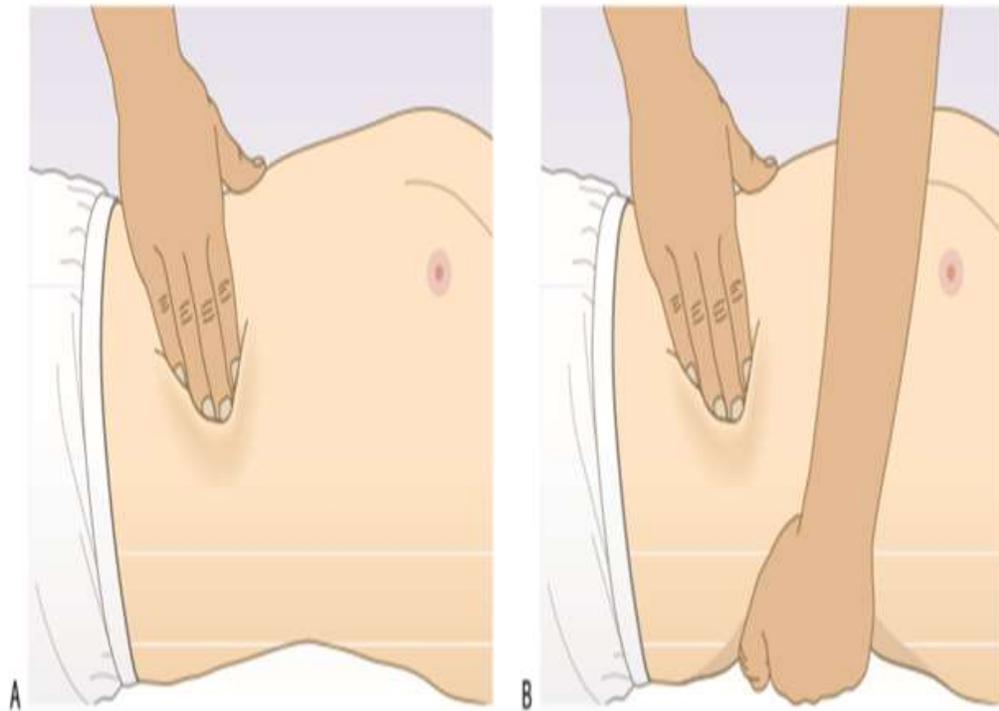
- Feel for the splenic edge as it descends on inspiration

- Move your hand diagonally upwards towards the left hypochondrium 1 cm at a time between each breath the patient takes.

- Feel the costal margin along its length, as the position of the spleen tip is variable.

- If you cannot feel the splenic edge, ask the patient to roll towards you and on to his right side and repeat the above. Palpate with your right hand, placing your left hand behind the patient's left lower ribs, pulling the ribcage forward

- Feel along the left costal margin and percuss over the lateral chest wall to confirm or exclude the presence of splenic dullness.



8.35 Causes of splenomegaly

Haematological disorders

- Lymphoma and lymphatic leukaemias
- Myeloproliferative diseases, polycythaemia rubra vera and myelofibrosis
- Haemolytic anaemia, congenital spherocytosis

Portal hypertension

Infections

- Glandular fever
- Malaria, kala azar (leishmaniasis)
- Brucellosis, tuberculosis, salmonellosis
- Bacterial endocarditis

Rheumatological conditions

- Rheumatoid arthritis (Felty's syndrome)
- Systemic lupus erythematosus

Rarities

- Sarcoidosis
- Amyloidosis
- Glycogen storage disorders



8.36 Differentiating a palpable spleen from the left kidney

Distinguishing feature	Spleen	Kidney
Mass is smooth and regular in shape	More likely	Polycystic kidneys are bilateral irregular masses
Mass descends in inspiration	Yes, travels superficially and diagonally	Yes, moves deeply and vertically
Able to feel deep to the mass	Yes	No
Palpable notch on the medial surface	Yes	No
Bilateral masses palpable	No	Sometimes, e.g. polycystic kidneys
Percussion resonant over the mass	No	Sometimes
Mass extends beyond the midline	Sometimes	No (except with horseshoe kidney)



Examination for
Ascites



Shifting Dullness

- With the patient supine, percuss from the midline out to the flanks. Note any change from resonant to dull, along with areas of dullness and resonance.

- Keep your finger on the site of dullness in the flank and ask the patient to turn on to his opposite side.

- Pause for 10 seconds to allow any ascites to gravitate, then percuss again. If the area of dullness is now resonant, shifting dullness is present.



B



C



Transmitted Thrill



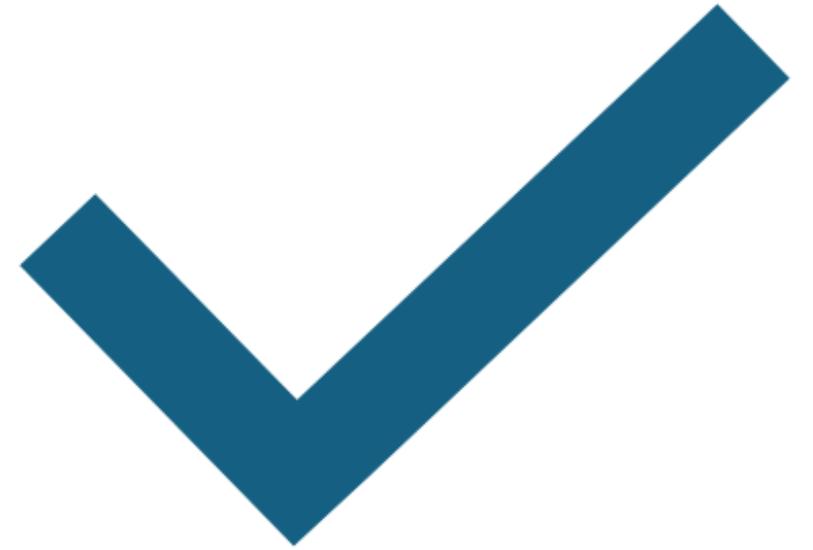
- It is performed by having the patient (or a colleague) push their hands down on the midline of the abdomen.

-The examiner then taps one flank, while feeling on the other flank for the tap.

-The pressure on the midline prevents vibrations through the abdominal wall while the fluid allows the tap to be felt on the other side.



To complete Abdominal exam



Digital Rectal Examination (DRE)

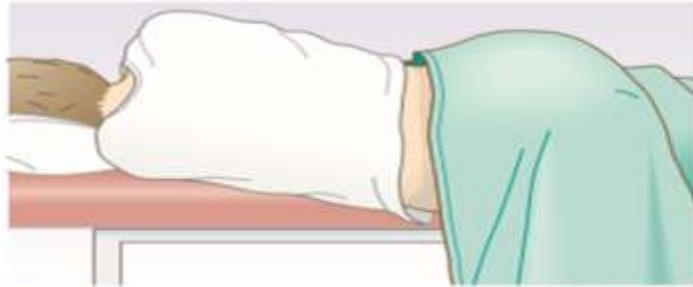


Fig. 8.24 The correct position of the patient before a rectal examination.



Fig. 8.25 Rectal examination. The correct method to insert your index finger in rectal examination.

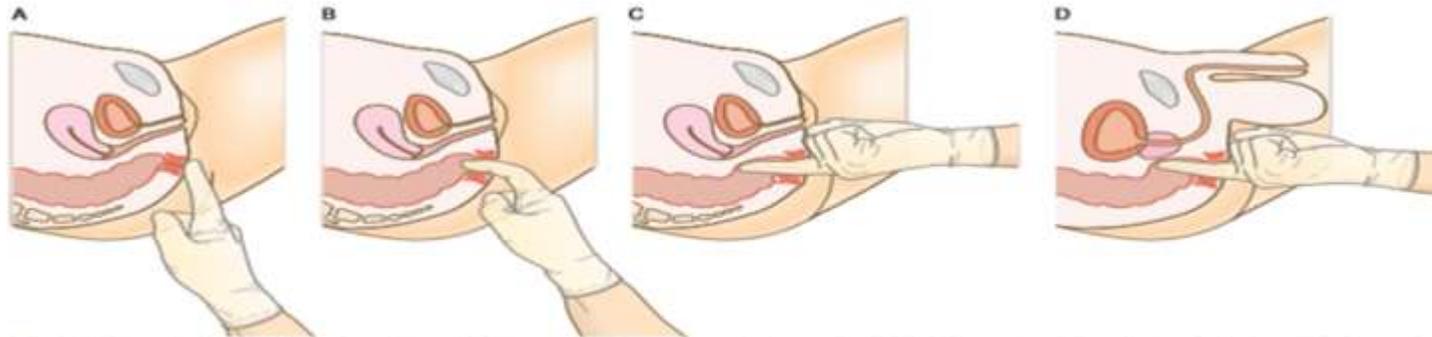


Fig. 8.26 Examination of the rectum. (A and B) Insert your finger, then rotate your hand. (C) The most prominent feature in the female is the cervix. (D) The most prominent feature in the male is the prostate.

Explain what you are going to do, why it is necessary and ask for permission to proceed. Tell the patient that the examination may be uncomfortable but should not be painful.

- Offer a chaperone; record if this is refused. Record the name of the chaperone.

- Position the patient in the left lateral position with his buttocks at the edge of the couch, his knees drawn up to his chest and his heels clear of his perineum

- Put on gloves and examine the perianal skin, using an effective light source.

- Look for skin lesions, external haemorrhoids and fistulae.

- Lubricate your index finger with water-based gel.

Place the pulp of your forefinger on the anal margin and apply steady pressure on the sphincter to push your finger gently through the anal canal into the rectum

■ If anal spasm occurs, ask the patient to breathe in deeply and relax. If necessary insert a local anesthetic suppository before trying again. If pain persists, examination under general anesthesia may be necessary.

■ Ask the patient to squeeze your finger with his anal muscles and note any weakness of sphincter contraction.

■ Palpate systematically around the entire rectum; note any abnormality and examine any mass. Record the percentage of the rectal circumference involved by disease and its distance from the anus

■ Identify the uterine cervix in women and the prostate in men; assess the size, shape and consistency of the prostate and note any tenderness.

■ If the rectum contains feces and you are in doubt about palpable masses, repeat the examination after the patient has defecated.

■ Slowly withdraw your finger. Examine it for stool color and the presence of blood or mucus

Hernias



Examine the groin with the patient standing upright.



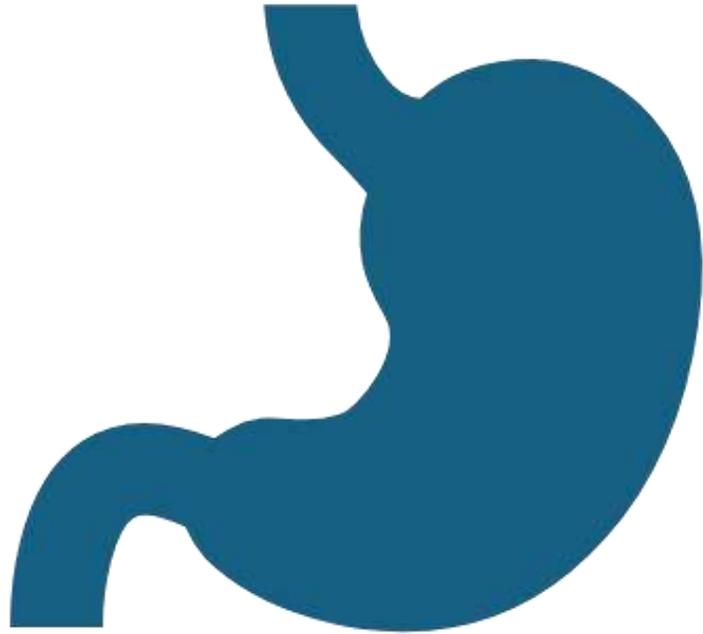
Inspect the inguinal and femoral canals and the scrotum for any lumps or bulges.



Ask the patient to cough; look for an impulse over the femoral or inguinal canals and scrotum.

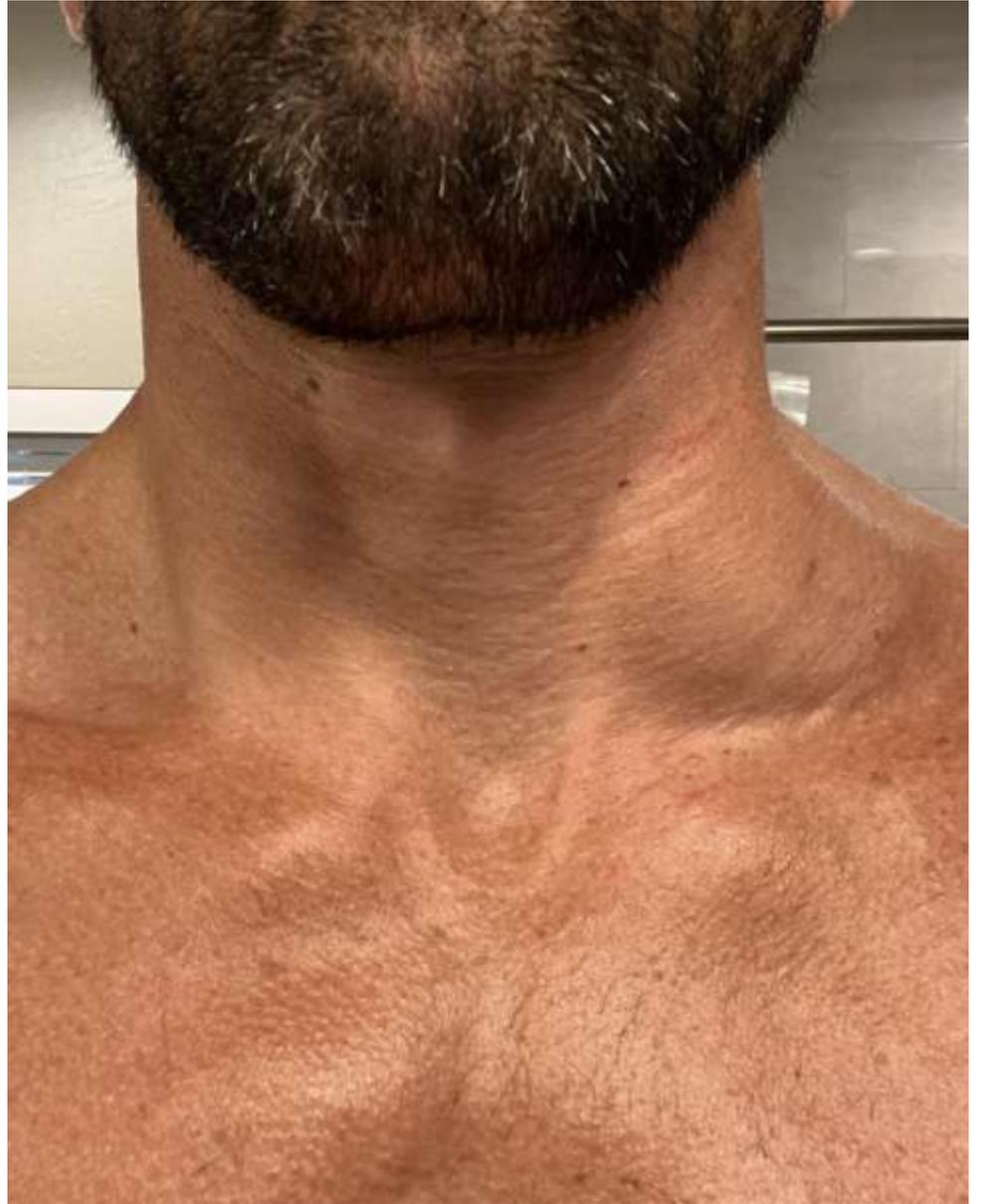


Identify the anatomical relationships between the bulge, the pubic tubercle and the inguinal ligament to distinguish a femoral from an inguinal hernia.



Lymph nodes

Examine the cervical, axillary and inguinal lymph nodes; gastric and pancreatic cancer may spread to cause enlargement of the left supraclavicular lymph nodes



Virchow's lymph
node



Video

- https://www.youtube.com/watch?v=PYA_nF6GJY2I

Thank you

