



Yarmouk University

Elixir Batch

Physical Examination

Internal medicine

Mu'ath Hussein

Physical Examination

السلام عليكم .. هاي الدوسية عبارة عن تلخيص لل physical examination المطلوب خلال
ميجر الباطني .. مرجعها الأساسي هو كتاب Macleod's clinical examination مع بعض
الإضافات من موقع Geeky medics .

حاولت قدر الامكان تكون بسيطة وشاملة بنفس الوقت، الترتيب المعتمد خلال الدوسية هو نفس
ترتيب كتاب Macleod ، بس طبعاً خلال الامتحانات الترتيب هاض مش ملزم الك ، المهم تربط
الخطوات وتقدر تتذكرها كلها بالامتحان.

بالتوفيق للجميع ...

زميلكم : معاذ حسين

بالبداية اسمحولي أشكر أعضاء جروبي العظيم .. جروب B4 على الدعم والتدقيق P:

- | | |
|-----------------|----------------------|
| - حمزة السعدي | - بهاء الدين الفيومي |
| - حنين البطاينة | - مصعب بني مفرج |
| - محمد أبو جزار | - حازم أبو طير |
| - مجد بني هاني | - عبد السلام العمور |
| - رؤى ناصر | - آية النبالي |
| - سارة عويس | - هبا الزعبي |
| | - ريم الظواهره |

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CARDIOVASCULAR EXAMINATION

- ✓ **Introduction**

- ✓ **General Inspection**
 - From the foot of the bed
 - Hands
 - Face and eyes
 - Mouth

- ✓ **Pulses**

- ✓ **Jugular venous pressure (JVP)**

- ✓ **The Precordium**
 - Inspection
 - Palpation
 - Auscultation

- ✓ **Others**

**** This sequence is from Macleod's book. You can follow your own sequence; the idea is not to forget any important step.**

CARDIOVASCULAR EXAMINATION

✓ **Introduction:** "WIPPEER"

Wash hands

Introduce yourself

Ask if the patient has any **Pain** anywhere before you begin!

Gain **Permission**

Explain the examination

Reposition the patient at 45° with their chest **Exposed** "from the waist up"

Check privacy, light, temperature.

✓ **General inspection:**

- "from the foot of the bed"

Bedside – treatments or adjuncts? – Nebulizers / O2 / medication / mobility aids.

Comfortable at rest? – does the patient look in pain or distress?

Shortness of breath at rest?

Malar flush – plum red discoloration of cheeks – may suggest mitral stenosis.

Inspect chest – scars, visible pulsations, symmetrical movement with respiration, deformities?

- **Hands:**

- **Hands out with palms facing downwards:**

***Splinter haemorrhages** – reddish / brown streaks on the nail bed – bacterial **endocarditis**.

Splinter haemorrhages
(*infective endocarditis*)

Nail clubbing
(***Finger clubbing:**
(*congenital cyanotic heart disease*)

-- Ask the patient to place the nails of their index fingers back to back

-- In a healthy individual you should be able to observe a small diamond shaped window (**Schamroth's window**)

-- When finger clubbing is present this window is lost

Finger clubbing has a number of CVS causes including infective endocarditis and cyanotic congenital heart disease.

Loss of Schamroth's window

- Hands out with palms **facing upwards**:

***Color** – dusky bluish discolouration (cyanosis) suggests hypoxia.

***Temperature** – cool peripheries may suggest poor cardiac output / hypovolaemia.

***Sweaty/clammy**– can be associated with acute coronary syndrome

***Janeway lesions** – non-tender maculopapular erythematous palm pulp lesions – infective endocarditis

***Osler's nodes** – tender red nodules on finger pulps / thenar eminence – infective endocarditis

***Tar staining** – smoker – risk factor for cardiovascular disease

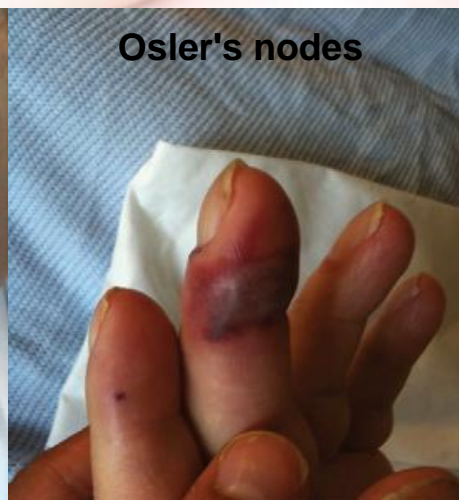
***Xanthomata** – raised yellow lesions – often noted on tendons of wrist – caused by hyperlipidaemia

Capillary refill time
(normal is < 2 seconds)

***Capillary refill time** – normal is <2 seconds – if prolonged may suggest hypovolaemia



Janeway lesions



Osler's nodes



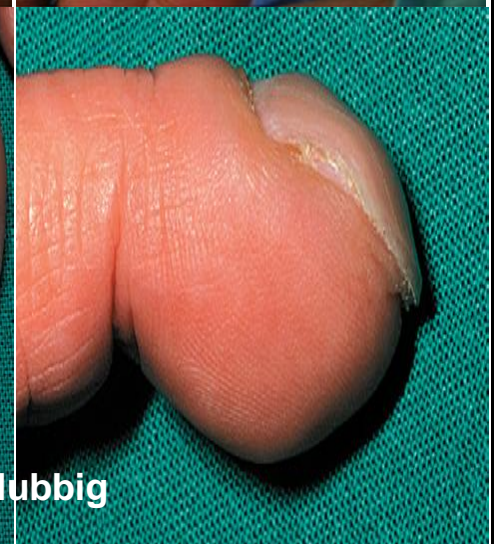
Splinter haemorrhages



Tobacco 'tar'-stained fingers.



Clubbing



- **The face and eyes:**

Malar flush – plum red discoloration of cheeks – may suggest mitral stenosis.

- **Eyes:**

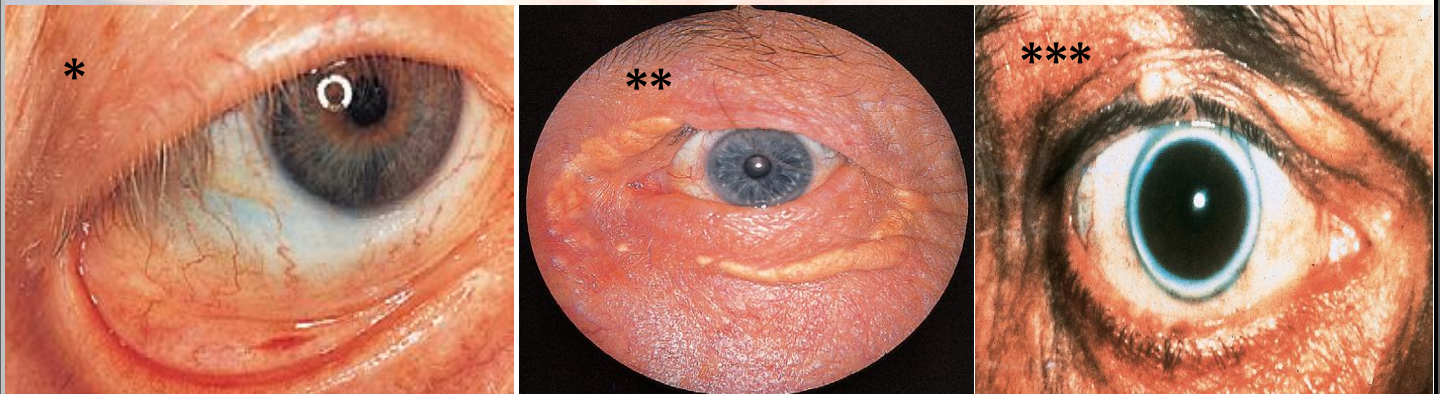
* **Petechial haemorrhages** on conjunctiva.

Conjunctival pallor – anemia – ask patient to gently pull down lower eyelid

** **Xanthelasma** –yellow raised lesions around the eyes– hypercholesterolaemia

*** **Corneal arcus** – yellowish/grey ring surrounding the iris – hypercholesterolaemia

Conjunctival pallor - anaemia



- **Mouth:**

Central cyanosis – bluish discoloration of lips / underneath tongue

* **Angular stomatitis** – inflammation of the corners of the mouth – iron deficiency anemia

High arched palate – suggestive of Marfan syndrome – ↑ risk of aortic aneurysm/dissection

Dental hygiene – important if considering sources for infective endocarditis



Malar flush



Radial-radial delay (*aortic coarctation*)

✓ Pulses:

- **Radial pulse** – assess rate and rhythm

Radio-radial delay:

- Palpate both radial pulses simultaneously
- They should occur at the same time in a healthy adult
- A delay may suggest aortic coarctation

Collapsing pulse – associated with aortic regurgitation:

- First ensure the patient has no shoulder pain
- Palpate the radial pulse with your hand wrapped around the wrist
- Raise the arm above the head briskly
- Feel for a tapping impulse through the muscle bulk of the arm as blood empties from the arm very quickly in diastole, resulting in the palpable sensation
- * This is a **water hammer pulse** and can occur in normal physiological states (fever/pregnancy), or in cardiac lesions (e.g. AR / PDA) or high output states (e.g. anaemia / AV fistula / thyrotoxicosis).

- **Brachial pulse** – assess volume and character

- **Carotid pulse:**

Assess character and volume – e.g. slow rising character in aortic stenosis.

* It's often advised to auscultate the carotid artery for a bruit before palpating, as theoretically palpation may dislodge a plaque which could lead to a stroke.

- **Femoral pulse :**

- assess volume and character.
- Check for radiofemoral delay (coarctation of the aorta) by simultaneously feeling the radial pulse.
- Listen for bruits over both femoral arteries, using the diaphragm of the stethoscope.

Carotid pulse - assess volume / character

Blood pressure:

- Measure blood pressure and note any abnormalities – hypertension / hypotension
- Narrow pulse pressure is associated with aortic stenosis
- Wide pulse pressure is associated with aortic regurgitation
- ** Often you won't be expected to actually carry this out (due to time restraints) but **make sure to mention** that you'd ideally like to measure blood pressure in both arms



6.13 Surface markings of the arterial pulses

Artery	Surface marking
Radial	At the wrist, lateral to the flexor carpi radialis tendon
Brachial	In the antecubital fossa, medial to the biceps tendon
Carotid	At the angle of the jaw, anterior to the sternocleidomastoid muscle
Femoral	Just below the inguinal ligament, midway between the anterior superior iliac spine and the pubic symphysis (the mid inguinal point). It is immediately lateral to the femoral vein and medial to the femoral nerve
Popliteal	Lies posteriorly in relation to the knee joint, at the level of the knee crease, deep in the popliteal fossa
Posterior tibial	Located 2 cm below and posterior to the medial malleolus, where it passes beneath the flexor retinaculum between flexor digitorum longus and flexor hallucis longus
Dorsalis pedis	Passes lateral to the tendon of extensor hallucis longus and is best felt at the proximal extent of the groove between the first and second metatarsals. It may be absent or abnormally sited in 10% of normal subjects, sometimes being 'replaced' by a palpable perforating peroneal artery

✓ Jugular venous pressure (JVP):

1. Ensure the patient is positioned at 45°
2. Ask patient to turn their head away from you
3. Observe the neck for the JVP – located inline with the sternocleidomastoid
4. **Measure the JVP** – number of **cm** from sternal angle to the upper border of pulsation.

- Raised JVP may indicate – fluid overload / **right ventricular failure / tricuspid regurgitation.**

along the border of sternocleidomastoid

- Hepatojugular reflux:

- Apply pressure to the liver

1. Observe the JVP for a rise in the liver (RUQ)
2. Observe for a rise in JVP

- In healthy individuals this should last no longer than 1-2 cardiac cycles (it should then fall) =

- If the rise in JVP is **sustained and equal to or greater than 4cm** this is a positive result

* A positive hepatojugular reflux sign is suggestive of right sided heart failure / tricuspid regurgitation.

✓ The Precordium:

- Inspection:

Scars:

Thoracotomy \ Left Submammary – mitral valvotomy
 Medline Sternotomy – CABG / Aortic valve surgery
 Infraclavicular – pacemaker

Chest wall deformities – pectus excavatum / pectus carinatum

Visible pulsations – forceful apex beat may be visible – hypertension/ventricular hypertrophy.

- Palpation:

Heaves – left sternal edge – ventricular hypertrophy.

Thrills – palpable murmurs felt over aortic valve and apex beat

" - Apply the heel of your right hand firmly to the left parasternal area and feel for a right ventricle **heave**. Ask the patient to hold his breath in expiration.

- Palpate for **thrills** at the apex and both sides of the sternum using the flat of your fingers."

Apex beat:

Normally : 5th intercostal space / midclavicular line "or slightly medial to it"

- If you cannot feel it, ask the patient to roll on to his left side.
- - Lateral displacement suggests cardiomegaly.
- - Consider the effects of chest deformities.

"Once located, count out the intercostal spaces "starting from the sternal angle" to make it clear to the examiner you have located it.

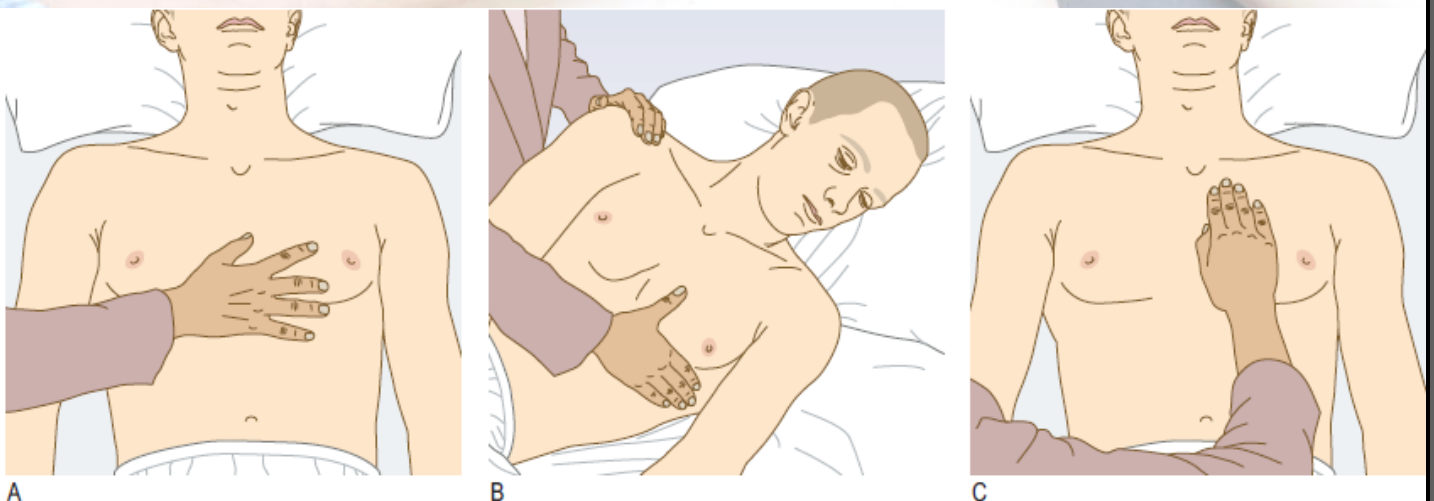


Fig. 6.22 Palpating the heart. (A) Use your hand to palpate the cardiac impulse. (B) Localise the apex beat with your finger (roll the patient, if necessary, into the left lateral position). (C) Palpate from apex to sternum for parasternal pulsations.

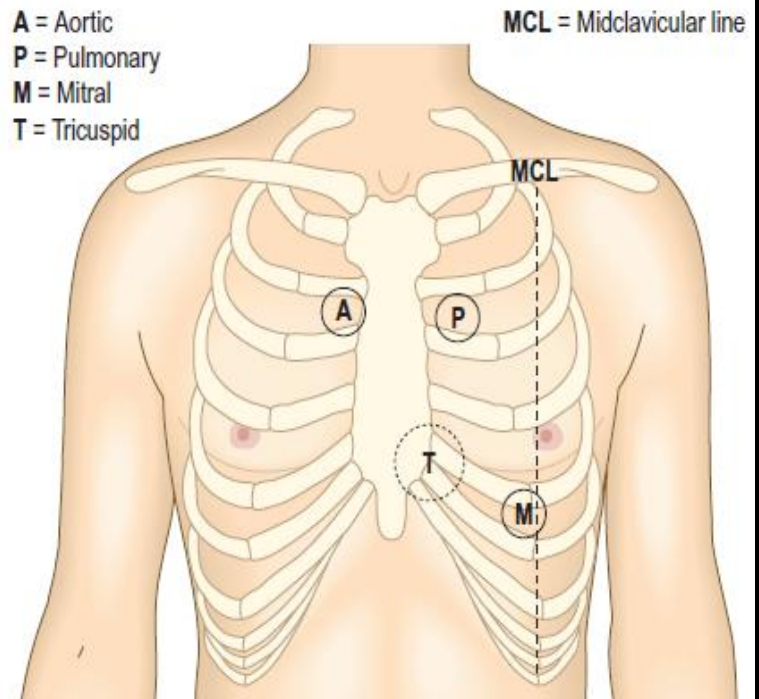
- Auscultation:

Auscultate the 4 valves:

"Palpate the carotid pulse to determine the 1st heart sound"

* Auscultate using the **diaphragm** of the stethoscope

- **Aortic valve** – 2nd intercostal space – right sternal edge
- **Pulmonary valve** – 2nd intercostal space – left sternal edge
- **Tricuspid valve** – 5th intercostal space – lower left sternal edge
- **Mitral valve** – 5th intercostal space – midclavicular line (apex beat)



*Repeat auscultation across the 4 valves with the **bell** of the stethoscope

"At each site identify the S1 and S2 sounds. Assess their character and intensity; note any splitting of the S2. Concentrate in turn on systole (the interval between S1 and S2) and diastole (the interval between S2 and S1). Listen for **added sounds** and then for **murmurs**."

Radiation of the murmur "Auscultate them wither you found a murmur or not"

- **Carotid arteries** (with breath held) – radiation of aortic stenosis murmur
- **Axilla** – radiation of heart murmur into the left axilla – mitral regurgitation

Accentuation maneuvers "Do them wither you found a murmur or not"

* These maneuvers cause particular murmurs to become louder **DURING** expiration

- **Roll onto left side** and listen to mitral area with **bell** during expiration – mitral stenosis.
- **Lean forward** and listen over aortic area and over the left sterna edge with the diaphragm during expiration – aortic regurgitation

✓ **To complete the examination**

Auscultate lung bases – crackles may suggest pulmonary oedema – left ventricular failure

Sacral oedema / pedal oedema – may indicate right ventricular failure



RESPIRATORY EXAMINATION

- ✓ **Introduction**

- ✓ **General Inspection**
 - From the foot of the bed
 - Hands
 - Head and neck

- ✓ **Jugular venous pressure (JVP)**

- ✓ **Lymph nodes**

- ✓ **The Chest**
 - Inspection
 - Palpation
 - Percussion
 - Auscultation

- ✓ **Posterior Chest**

**** This sequence is from Macleod's book. You can follow your own sequence; the idea is not to forget any important step.**

**** IMPORTANT ** If you were asked to examine the "ANTERIOR CHEST" you should go to the chest directly and you don't have to do the general exam or other RS or CVS related regions.**

- the lateral part of the chest is considered a part from both the anterior and posterior chest, so don't forget it in any step of your examination

RESPIRATORY EXAMINATION

✓ **Introduction:** "WIPPEER"

Wash hands

Introduce yourself

Ask if the patient has any **Pain** anywhere before you begin!

Gain **Permission**

Explain the examination

Reposition the patient at 45° with their chest **Exposed** "from the waist up"

Check privacy , light , temperature.

✓ **General inspection:**

❖ "from the foot of the bed"

- **Treatments or adjuncts around bed** – O2 / inhalers /nebulisers /sputum pots

- **Does patient look short of breath?** "In respiratory distress?" – nasal flaring / pursed lips / use of accessory muscles

- Is the patient able to **speak in full sentences?**

- **Cyanosis** – bluish/purple discolouration

- **Respiratory rate** – normal adult range = **12-20** breaths per minute

- **Cachexia** – very thin patient with muscle wasting – malignancy

- **Cough** – productive or dry?

- **Wheeze** – asthma / COPD / allergy related

- **Stridor** - Ask the patient to cough and then breathe deeply in and out with the mouth wide open. Listen closely to the patient's mouth, for stridor.

- **Skin appearances - Erythema nodosum*** over the shins is a feature of acute sarcoidosis and tuberculosis. Raised, firm, non-tender subcutaneous **nodules**** may occur in patients with disseminated cancer.

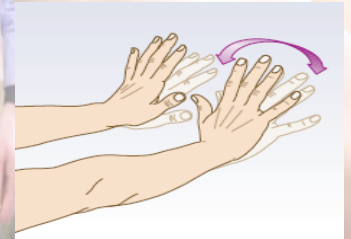


❖ **Hands**

- **Temperature** – ↓ temp – peripheral vasoconstriction / poor perfusion
- **Tar staining** – smoker – increased risk of COPD / lung cancer
- **Peripheral cyanosis** – bluish discolouration of nails – O₂ saturations <85%
- **Clubbing** – lung cancer / interstitial lung disease / bronchiectasis
- **Pulse** – rate and rhythm
- **Pulsus paradoxus?** – pulse wave volume decreases with inspiration – asthma / COPD ... usually detected by measuring BP not by palpation.
- **Fine tremor** – can be a side effect of beta 2 agonist use (e.g. salbutamol)
- **Flapping tremor "Asterixis"** – CO₂ retention – type 2 respiratory failure – e.g. COPD "Ask the patient to hold out his arms with the hands extended at the wrists. Look for a jerky, flapping tremor(asterixis)."

Asterixis

Fine tremor

❖ **Head and neck**

- **Conjunctival pallor** – ask patient to lower an eyelid to allow inspection – anaemia
- **Central cyanosis** – bluish discolouration of the lips / inferior aspect of tongue "Ask the patient to open his mouth and look at the lips and the underside of the tongue for a purplish blue discoloration in natural light" – (<85% oxygen saturation)
- **Horner's syndrome**
 - ptosis / constricted pupil (miosis) /anhidrosis on affected side – Lung cancer

✓ **Jugular venous pressure (JVP):**

1. Ensure the patient is positioned at 45°
2. Ask patient to turn their head away from you
3. Observe the neck for the JVP – located inline with the sternocleidomastoid
4. **Measure the JVP** – number of **cm** from sternal angle to the upper border of pulsation.

- Raised JVP may indicate – fluid overload / pulmonary hypertension

Observe for a **visible JVP** along the border of **sternocleidomastoid**

❖ In **superior vena caval obstruction** (SVCO) the JVP is raised and non-pulsatile, and the abdominojugular reflex is absent.

Most cases are due to **lung cancer** compressing the superior vena cava. Other causes include lymphoma, thymoma and mediastinal fibrosis. Facial flushing, distension of neck veins and stridor can occur in SVCO when the arms are raised above the head.



Palpate lymph nodes
(note any lymphadenopathy)

✓ Lymph nodes

❖ **Palpate the following areas:**

- Anterior and posterior triangles
- Supraclavicular region
- Axillary region

❖ **Lymphadenopathy** may indicate infective/malignant pathology – lung cancer / TB

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✓ THE CHEST

❖ **Inspection**

- **Scars** – mid-axillary (e.g. chest drains) / posterior chest (e.g. lobectomy)
- **Skin changes** – may indicate recent or previous radiotherapy – erythema / thickened skin
- **Asymmetry** – major surgery – e.g. pneumonectomy / thoracoplasty
- **Deformities** – barrel chest* “anteroposterior diameter is greater than the lateral diameter\Hyperinflation” (COPD)
- pectus excavatum** and carinatum***

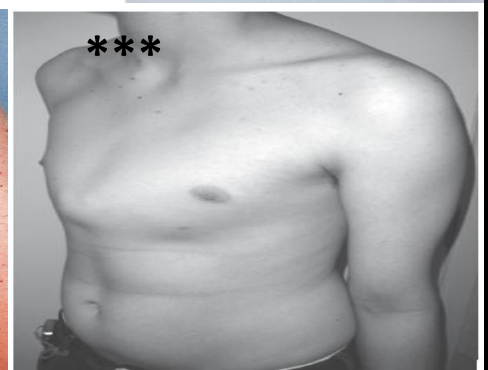
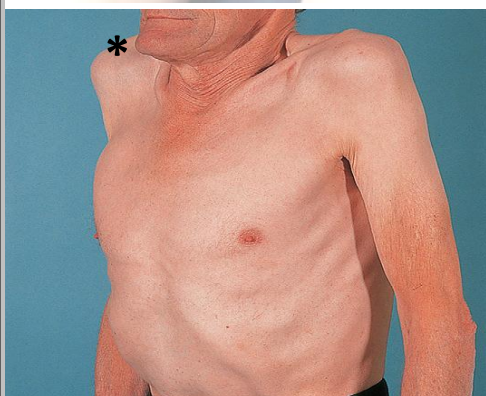


Figure 1 – Lower pectus carinatum.

❖ Palpation

- Tracheal position:

- Ensure patient's neck musculature is relaxed – chin slightly downwards
- Dip index finger into the thorax beside the trachea
- Then gently apply side pressure to locate the trachea
- Compare this space to the other side of trachea using the same process
- A difference in the amount of space between the sides suggests **deviation**
- Palpation of the trachea can be uncomfortable, so warn the patient and apply a gentle technique

Tracheal

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- Cricosternal distance:

- Measure the distance between the suprasternal notch and cricoid cartilage using your fingers
- In normal healthy individuals the distance should be 3-4 fingers
- If the distance is <3 fingers, this suggests lung **hyperinflation**
- Keep in mind that this distance is actually based on the patient's fingers
- So if their fingers are significantly different in size from your own, it may be worth checking with theirs

Crico-sternal
distance

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- General for tenderness

- Apex beat:

- Normal position is 5th intercostal space – mid-clavicular line

- Chest expansion:

- Place your hands on the patient's chest, inferior to the nipples
- Wrap your fingers around either side of the chest
- Bring your thumbs together in the midline, so that they touch
- Ask patient to take a deep breath
- Observe movement of your thumbs, they should move apart equally "symmetrically"
- If one of your thumbs moves less, this suggests reduced expansion on that side
- Reduced expansion can be caused by **lung collapse / pleural effusion / pneumothorax / unilateral fibrosis / pneumonia** "uni-lateral" or by **COPD \ Diffuse Fibrosis** "bi-lateral"

↓ Expansion (unilateral)

(for dilation/collapse)



❖ Percussion

- **Technique** is very important !

- Place your non-dominant hand on the chest wall
- Your middle finger should overlie the area you want to percuss (between ribs)
- With your dominant hand's middle finger, strike middle phalanx of your non-dominant hand's middle finger
- The striking finger should be removed quickly, otherwise you may muffle resulting percussion note

Hyper-resonant
(*pneumothorax*)

- **Percuss the following areas, comparing side to side:**

- **Supraclavicular - lung apices** " by placing the palmar surface of your left middle finger across the anterior border of the trapezius muscle, overlapping the supraclavicular fossa and percussing downwards."
- **The clavicle directly**, over the medial third
- **Infraclavicular**
- **Chest wall**
- **Axilla "lateral wall"**

Supra-clavicular

- **Types of percussion note**

Resonant – this is a normal finding

Dullness – this suggests increased tissue density – consolidation / fluid / tumour / collapse

Stony dullness – this suggests the presence of a pleural effusion / haemothorax

Hyper-resonance – the opposite of dullness, suggestive of decreased tissue density – e.g. pneumothorax

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- **The posterior chest** "at the end of the full anterior chest examination"

Ask the patient to fold the arms across the front of the chest, moving the scapulae laterally and percuss the upper posterior chest. Do not percuss near the midline, as solid structures of the thoracic spine and paravertebral musculature produce a dull note.

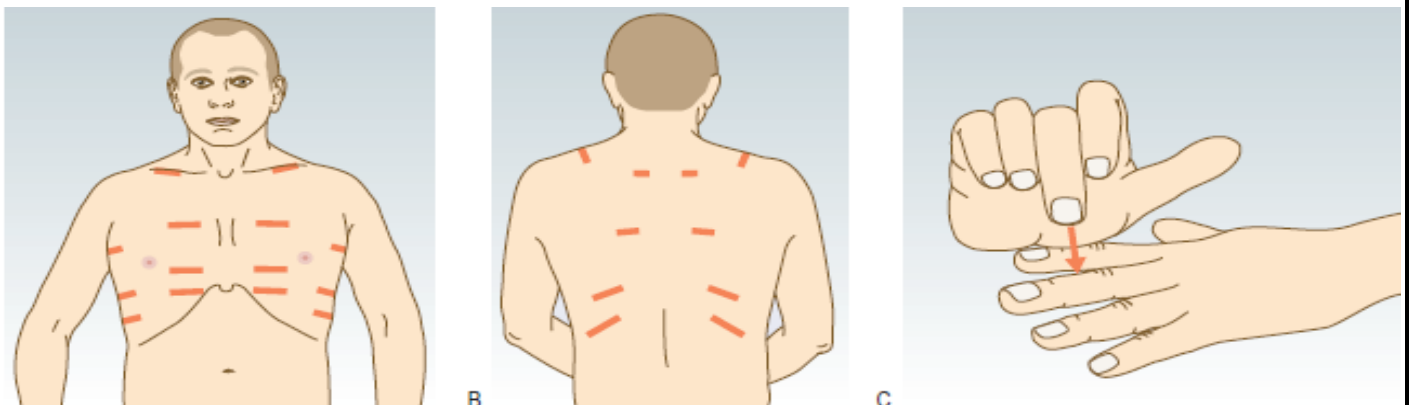


Fig. 7.18 Sites for percussion. (A) Anterior and lateral chest wall. (B) Posterior chest wall. (C) Technique of percussion.

❖ Auscultation

- Ask patient to take **deep breaths in and out through their mouth.**
 - Listen:
 - Anteriorly from above the clavicle down to the sixth rib
 - Laterally from the axilla to the eighth rib
 - Posteriorly down to the level of the 11th rib.
 - **Assess quality** – Vesicular (normal) / Bronchial (harsh sounding) – consolidation
 - **Assess volume** – quiet breath sounds suggest reduced air entry – consolidation / collapse / fluid ...
- " If breath sounds appear reduced, ask the patient **to cough**. If the reduced breath sounds are due to bronchial obstruction by secretions, they are likely to become more audible after coughing."

Fine crackles
(pulmonary fibrosis)

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- Added sounds:

- **Wheeze** – asthma / COPD
 - **Coarse crackles** – pneumonia / fluid
 - **Fine crackles** – pulmonary fibrosis
- Auscultate **each side** alternately, **comparing** findings over a large number of equivalent positions to ensure that you do not miss localised abnormalities.

↑ Vocal resonance
(consolidation)

- Vocal resonance:

- Ask patient to say "99" repeatedly and auscultate the chest again
- Increased volume over an area suggests increased tissue density – consolidation/fluid/tumour

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✓ Assess the posterior chest

Repeat inspection, chest expansion, percussion and auscultation on the back of the chest.

* Do all steps anteriorly then posteriorly separately, avoiding the patient to change his position many times.

PERCUSSION

AUSCULTATION

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GASTROINTESTINAL EXAMINATION

✓ Introduction

✓ General Inspection

- From the foot of the bed
- Hands
- Eyes
- Mouth
- Neck
- Chest

✓ The Abdomin

- Inspection
- Palpation
 - * Superficial
 - * Deep
 - * Organs
- Percussion
- Auscultation

**** This sequence is from Macleod's book. You can follow your own sequence; the idea is not to forget any important step.**

GASTROINTESTINAL EXAMINATION

✓ **Introduction:** **"WIPPEER"**

Wash hands

Introduce yourself

Ask if the patient has any **Pain** anywhere before you begin!

Gain **Permission**

Explain the examination

Reposition the patient at **SUPINE** position with their chest and abdomen **Exposed**
 "from the xiphisternum to symphysis pubis" Check privacy , light ,
 temperature.

GENERAL

INSPECTION

✓ **General inspection:**

❖ "from the foot of the bed"

- **Look around bedside for treatments or adjuncts** – feeding tubes /stoma bags /drains
- **Patient's appearance** – in pain? / agitated? / confused?
- **Body habitus** – obese / low BMI / cachectic
- **Jaundice** – cirrhosis / hepatitis
- **Anaemia** – obvious pallor suggests significant anaemia – e.g. GI bleeding
- **Abdominal distention** – ascites / bowel distension / large masses
- **Masses** – may suggest malignancy / organomegaly
- **Dressings** – may be covering wound sites – infection / bleeding
- **Needle track marks** – Hepatitis / HIV
- **Excoriations** – pruritus – cholestasis

❖ **Hands**

- **Clubbing** – inflammatory bowel disease / cirrhosis / coeliac disease
- **Koilonychia** – spooning of the nails – chronic iron deficiency (iron deficiency anaemia)
- **Leukonychia** – whitened nail bed – hypoalbuminemia (liver failure / enteropathy)
- **Palmar erythema** – reddening of palms – liver disease / pregnancy
- **Dupuytren's contracture:**
 Thickening of the palmar fascia
 Associated with alcohol excess / family history
- **Hepatic flap:**
 Asterixis (Flapping tremor) – Hepatic encephalopathy
- **Asterixis** "flapping tremor" – hepatic encephalopathy / uraemia / CO₂ retention

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❖ Eyes

Ask patient to **lower** one of their eyelids with their finger. Inspect for the signs below.

- **Jaundice** – noted in the sclera – haemolysis / hepatitis / cirrhosis, biliary obstruction
- **Conjunctival pallor** – suggests significant anaemia
- **Xanthelasma** – raised yellow deposits surrounding eyes – hyperlipidaemia

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❖ Mouth

Glossitis

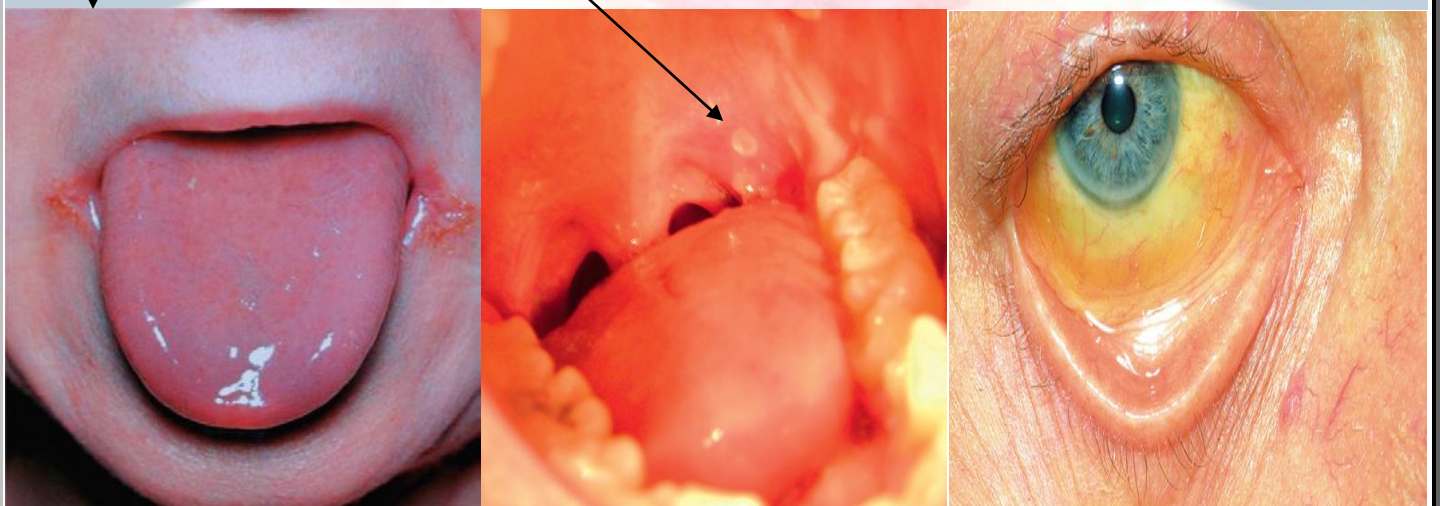
(Iron / B12 deficiency)

- **Angular stomatitis** – inflamed red areas at the corners of the mouth – iron/B12 deficiency
- **Oral candidiasis** – white slough on oral mucous membranes – iron deficiency / immunodeficiency
- **Mouth ulcers** – Crohn's disease / coeliac disease
- **Tongue (glossitis)** – smooth swelling of the tongue with associated erythema – iron/B12/folate deficiency
- Smell from the mouth / fetor hepaticus

Mouth ulcers

(Crohn's disease)

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- **Cervical lymph nodes** – lymphadenopathy may indicate infection / metastatic malignancy

- **Virchow's node** – left supraclavicular fossa – suggestive of gastric malignancy

Also check Axillary lymph nodes

❖ Chest

- **Spider naevi** – central red spot with reddish extensions (>5 significant) – chronic liver disease

- **Gynaecomastia** – overdevelopment of male mammary glands– liver cirrhosis / digoxin/ spironolactone

- **Hair loss** – pseudofeminisation/ malnourishment / iron deficiency anaemia



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✓ The Abdomin

❖ Inspection

From the foot of the bed :

- **Contour of the abdomen** / Flat , distended, scaphoid
- **Abdominal movement with respiration**
- **The umbilicus** / central & inverted
- **Symmetry of the abdomen**

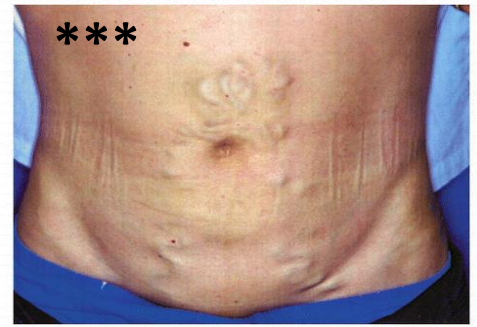
From the right side :

- **Scars** – midline scars (laparotomy) / RIF (appendectomy) / right subcostal (cholecystectomy)
- **Masses** – assess (size/position/consistency/mobility) – organomegaly / malignancy
- **Pulsation** – "from the bed level" - a central pulsatile and expansile mass may indicate an abdominal aortic aneurysm (AAA)
- **Visible peristalsis** "from the bed level" - obstruction
- **Cullen's sign *** – bruising surrounding umbilicus – retroperitoneal bleed (pancreatitis/ruptured AAA)
- **Grey-Turner's sign **** – bruising in the flanks – retroperitoneal bleed (pancreatitis/ruptured AAA)
- **Abdominal distension** – fluid (ascites) / fat (obesity) / faeces (constipation) / flatus / fetus (pregnancy)
- **Striae** – reddish/pink (new) or white/silverish (chronic) – abdominal distension

INSPECT
THE ABDOMEN

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- **Visible veins** - inferior vena cava obstruction / Caput medusae
- **Caput medusa***** – engorged paraumbilical **veins** – portal hypertension
- **Stomas** – colostomy (LIF) / ileostomy (RIF) / urostomy (RIF and contains urine)
- **Ask the patient to cough and look for hernia** – umbilical / femoral / inguinal .



❖ Palpation

- Ask about any areas of pain and examine these last. – Warm your hands.
- Kneel so that you are level with the patient, if the bed is low.
- Observe the patient's face throughout for signs of discomfort.

- Light superficial palpation

Palpate each of the 9 abdominal regions, assessing for any of the below:

- **Tenderness** – note the areas involved and the severity of the pain
- **Rebound tenderness** – pain is worsened on releasing the pressure – peritonitis
- **Guarding "Muscle tone"** – involuntary tension in the abdominal muscles – localised or generalised?
- **Masses** – large / superficial masses may be noted on light palpation

- Deep palpation

- Assess each of the 9 regions again, but with **greater pressure** applied during palpation. – Note any **tenderness** or **rebound tenderness**
- If any **masses** are identified then assess:

Location – which region?

Size

Shape

Consistency – smooth / soft / hard / irregular

Mobility – is it attached to superficial / underlying tissues?

Pulsatility – a pulsatile mass suggests vascular aetiology

DEEP PALPATION

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- To determine if a 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 head.**
 - An **abdominal wall mass** will still be palpable, whereas an **intra-abdominal mass** will not.
 - Decide whether the mass is an enlarged abdominal organ or separate from the solid organs.
- ❖ **Palpation for enlarged organs**

- Liver

1. Start palpation in the right iliac fossa
2. Press your right hand into the abdomen as you ask the patient to take a deep breath from mouth
3. Feel for a step, as the liver edge passes below to your hand on inspiration
4. If you don't feel anything, repeat the process with your hand 1-2 cm higher, between each breath the patient takes, until you reach the costal margin or detect the liver edge.

- The liver may be enlarged or displaced downwards by hyperinflated lungs

- If you feel the liver edge, **note the following:**

Degree of extension below the costal margin

Consistency of the liver edge (smooth/irregular)

Tenderness – suggestive of hepatitis

Pulsatility – a pulsatile enlarged liver can be caused by tricuspid regurgitation

- Gallbladder

The gallbladder is **not usually palpable.**

An **enlarged gallbladder** suggests obstruction to biliary flow / infection (cholecystitis).

Perform palpation at the **right costal margin, mid-clavicular line (9th rib tip).**

If enlarged, a round mass moving with respiration may be palpated (note any tenderness).

Murphy's sign:

- Place your hand in the area noted above (right costal margin, mid-clavicular line)
- Ask the patient to take a deep breath
- As the gallbladder is pushed down into your hand the patient may suddenly develop **pain and stop inspiring**.
- If this occurs and there is no discomfort in the same location on the left side of the abdomen then this is known as a **positive Murphy's sign**, which is **suggestive of cholecystitis**

- Spleen

The spleen only **becomes palpable when it's at least three times its normal size!**

1. Start in right iliac fossa – massive splenomegaly can extend this far!
2. Align your fingers in the same direction as the left costal margin
3. Press your right hand into the abdomen as you ask the patient to take a deep breath
4. Feel for a step, as the splenic edge passes under your hand (a notch may be noted)
5. If you don't feel anything, repeat process with your hand 1-2 cm closer to the left hypochondrium

- Kidneys

1. Place your **left hand behind the patient's back**, at the right flank
2. Place your **right hand just below the right costal margin** in the right flank
3. Press your **right hand's** fingers deep into the abdomen
4. At the same time press upwards with your **left hand**
5. Ask the patient to take a deep breath
6. You may feel the lower pole of the kidney moving inferiorly during inspiration
7. Repeat this process on the opposite side to assess the **left kidney**.

- Others

- **Palpate for visible pulsation.**
- **Palpate for hernia.**

❖ Percussion

- Abdominal organs

- **Liver** – percuss up from RIF then down from right side "2nd intercostal space at mid – clavicular line" of chest to determine the span of the liver
- **Spleen** – percuss up from RIF moving towards the left hypochondrium to assess for splenomegaly *(to assess for bladder distension)*
- **Bladder** – percuss suprapubic region – differentiating suprapubic masses (bladder (dull) / bowel (resonant))

- Ascites:

* Shifting dullness:

1. Percuss from the centre of the abdomen "from the most tympanic point" to the flank until dullness is noted
2. Keep your finger on the spot at which the percussion note became dull
3. Ask patient to roll onto the opposite side to which you have detected the dullness
4. Keep the patient on their side for 10 seconds
5. Repeat your percussion in the same spot
6. **If fluid was present (ascites)** then the area that was previously dull should now be resonant
7. If the flank is now resonant, percuss back to the midline, which if ascites is present, will now be dull (i.e. **the dullness has shifted**)



* Fluid thrill

1. Place the palm of your left hand flat against the left side of the patient's abdomen and flick a finger of your right hand against the right side of the abdomen.
2. If you feel a ripple against your left hand, ask an assistant or the patient to place the edge of his hand on the midline of the abdomen. This prevents transmission of the impulse via the skin rather than through the ascites.
3. If you still feel a ripple against your left hand, a fluid thrill is present (only detected in gross ascites).

❖ Auscultation

- Bowel sounds:

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.

** **Normal** – gurgling

** **Abnormal**, high-pitched– e.g. “tinkling” (bowel obstruction)

** **Absent** – ileus / peritonitis

- Bruits:

Aortic bruits – auscultate just above the umbilicus – AAA

Renal bruits – auscultate just above the umbilicus, slightly lateral to the midline "2–3 cm above and lateral"

- Listen over the liver for bruits.

- **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.

Listen for aortic bruits
(just above umbilicus)
(AAA)

Listen for renal bruits
(renal artery stenosis)

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THYROID EXAMINATION

✓ Introduction:

Wash hands

Introduce yourself

Ask if the patient has any **Pain** anywhere before you begin!

Gain **Permission**

Explain the examination

Reposition the patient at **SITTING** position, Check privacy , light , temperature.

✓ Inspection:

❖ **Behaviour**

- Does the patient appear **hyperactive?** – agitation / anxiety / fidgety (hyperthyroidism)

❖ **Hands** - Inspect the patients hands for...

- **Dry skin** (hypothyroid)
- **Increased sweating** (hyperthyroid)
- **Thyroid acropachy** – phalangeal bone overgrowth – Graves' disease
- **Palmar erythema** – reddening of the palms at the thenar / hypothenar eminences – hyperthyroidism

- **Peripheral tremor**

1. Ask the patient to place their arms straight out in front of them
 2. Place a piece of paper across the backs of their hands
 3. Observe for a tremor (the paper will quiver)
- Peripheral tremor can be a sign of hyperthyroidism.

❖ **Pulse** - Assess the **radial** pulse for...

Rate:

- Tachycardia (hyperthyroidism)
- Bradycardia (hypothyroidism)

Rhythm:

- irregular (atrial fibrillation) – thyrotoxicosis

❖ **Face** Inspect the face for...

- **Dry skin** – hypothyroidism
- **Sweating** – hyperthyroidism
- **Eyebrows**– loss of the outer third – hypothyroidism (rare)

Pulse rate

- ↑ - Hyperthyroidism
- ↓ - Hypothyroidism

Pulse rhythm

- Regular - Atrial Fibrillation (Hyperthyroidism)

Inspect the face...

Hyperthyroidism:

- Sweating

Hypothyroidism:

- Dry skin
- Loss of outer third of eyebrow

❖ Eyes

- **Exophthalmos** (anterior displacement of the eye out of the orbit),
Inspect from the front, side and above
- Note if the sclera is visible above the iris (**lid retraction**) – seen in Graves' disease
- Inspect for any redness / **inflammation of the conjunctiva**

** Bilateral exophthalmos is associated with Graves' disease, caused by abnormal connective tissue deposition in the orbit and extra-ocular muscles.

- Eye movements

1. Ask the patient to keep their head still and follow your finger with their eyes
2. Move your finger through the various axes of eye movement ("H" shape)
3. Observe for restriction of eye movements and ask the patient to report any double vision or pain

** Eye movement can be restricted in Graves' disease due to abnormal connective tissue deposition in the orbit and extra-ocular muscles.

- Lid lag

1. Hold your finger high and ask the patient to follow it with their eyes, whilst keeping their head still.
2. Move your finger downwards
3. Observe the upper eyelids as the patient follows your finger downwards

** **If lid lag is present** the upper eyelids will be observed lagging behind the eyes' downward movement (the sclera will be visible above the iris). Lid lag occurs as a result of the anterior protrusion of the eye from the orbit (exophthalmos) which is associated with Graves' disease.



Thyroid
acropachy



✓ Thyroid

Inspect the neck:

❖ Inspect the midline of the neck (in the region of the thyroid)

- **Any skin changes** – e.g. erythema
 - **Any scars?** – previous thyroidectomy scars can easily be missed
 - **Masses**
 - **Note any swellings** / masses in the area – assess size and shape
- *The normal thyroid gland **should not be visible**.

Skin changes - *erythema*
 Scars - *thyroidectomy*
 Masses - *goitre / lymph node*

- If a **mass** is noted on inspection...

1. Ask the patient to swallow some water:

- Observe the movement of the mass
- Masses embedded in the **thyroid gland will move** with swallowing
- Thyroglossal cysts will also move with swallowing
- Lymph nodes will move very little

Observe for
movement
 of any masses
 with **swallowing**

2. Ask patient to protrude their tongue:

- **Thyroid gland masses / lymph nodes will not move**
- Thyroglossal cysts will move upwards noticeably

Observe movement
 of any masses...

No movement
 Thyroid gland mass
 Lymph node

Upward movement
 Thyroglossal cyst

❖ **Palpation**

- Stand **behind** the patient and ask them to slightly **flex their neck** (to relax the sternocleidomastoids).
- Place your hands either side of the neck.
- Ask if the patient has any pain in the neck before palpating.

- **Thyroid gland**

1. Place the three middle fingers of each hand along the midline of the neck below the chin
2. Locate the upper edge of the thyroid cartilage (“Adam’s apple”)
3. Move inferiorly until you reach the cricoid cartilage / ring
4. The **first two rings of the trachea** are located below the cricoid cartilage and the thyroid **isthmus** overlies this area
5. Palpate the thyroid isthmus using the pads of your fingers
6. Palpate **each lobe** of the thyroid in turn by moving your fingers out laterally from the isthmus

7. Ask the patient to **swallow** some water, whilst you feel for symmetrical elevation of the thyroid lobes (asymmetrical elevation may suggest a unilateral thyroid mass)

8. Ask the patient to **protrude their tongue** once more (if a mass is a thyroglossal cyst, it will rise during tongue protrusion)

- **When palpating the thyroid gland, assess the following:**

- **Size** – does it feel enlarged? – goitre

- **Symmetry** – is one lobe significantly larger than the other?

- **Consistency** – does the thyroid feel smooth or nodular? – e.g. multinodular goitre

- **Masses** – are there any distinct masses within the thyroid gland's tissue?

- **Palpable thrill** – sometimes noted in thyrotoxicosis – due to increased vascularity

- **If a mass is noted...**

- **Assess** – position / shape / tenderness/ consistency / mobility

- **Lymph nodes**

Palpate for local **lymphadenopathy**:

- **Supraclavicular** nodes

- **Anterior cervical** chain

- **Posterior cervical** chain

- **Submental** nodes

*Local lymphadenopathy may suggest **metastatic spread of a primary thyroid malignancy**.

Palpate local lymph nodes for evidence of lymphadenopathy (e.g. *thyroid malignancy*)

- **Trachea**

- Note any **deviation** of the trachea – may be caused by a large thyroid mass

Assess for tracheal deviation (e.g. *large goitre*)

❖ **Percussion**

Percuss downwards from the sternal notch.

- Retrosternal dullness may indicate a large thyroid mass, extending posterior to the manubrium.

Percuss to detect any retrosternal dullness (e.g. *large goitre extending inferiorly*)

❖ Auscultation

Auscultate each lobe of the thyroid **for a bruit.**

- A bruit would suggest **increased vascularity**, which occurs in Graves' disease.

Auscultate each lobe of the thyroid listening for a thyroid bruit
(increased vascularity secondary to Graves' disease)

✓ Special tests

1. **Reflexes** – e.g. biceps reflex – **hyporeflexia** "delayed relaxation of reflexes" is associated with **hypothyroidism**.

- **Hyperreflexia** → **hyperthyroidism**

2. Inspect for **pretibial myxoedema** – associated with Graves' disease

3. **Proximal myopathy**:

- Ask the patient to stand from a sitting position with arms crossed

- An inability to do this suggests proximal muscle wasting

- Proximal myopathy is associated with **hyperthyroidism**

At the end I hope you found this work useful, and if you have any note, comment or idea please let me know.

Thanks for reading :p

Mu'ath Hussain

Elixir Batch

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THE END