

Podcast 3b

Respiratory Examination

PODCAST No. 3b

INTRODUCTIONS:

FEEDBACK: Welcome to this series of podcasts aiming at bringing education to clinical officers in their location. This is a trial of educational podcasts so please let us give us feedback both positive and negative. Also let us know if there are any future topics you'd like included.

TIP Refer to our radiologist to help interpret CXR's

TOPIC: Respiratory Examination 3b

DISCUSSION:

Remember in the first part of this podcast we looked at the general condition of our patient - obtaining as much information as possible as the patient approached and as we introduced ourselves and ensured the patient is comfortable. We noted if the patient was breathless, cyanosed, using accessory muscles and whether they had any respiratory adjuncts with them. We had inspected their hands, face and the chest. Now we need to move on to the Palpation, Percussion And Auscultation

It is easiest and most practical to examine the whole of the front of the chest wall first and then the back. Examining from side to side to make comparisons.

Palpation

With the patient sitting or lying on a couch at 45 degrees,

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
- *The trachea deviates away from pneumothorax and large pleural effusions*
- *The trachea deviates towards lobar collapse and pneumonectomy*
- *Palpation of the trachea can be uncomfortable, so warn the patient and apply a gentle technique*

Lymph nodes

Palpate the following areas:

- Anterior and posterior triangles
- Supraclavicular region
- Axillary region

Lymphadenopathy may indicate infective/malignant pathology – lung cancer / tuberculosis / sarcoidosis

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
- If one of your thumbs moves less, this suggests reduced expansion on that side
- *Reduced expansion can be caused by lung collapse / pneumonia*

Percussion

Technique is very important!

1. Place your Left hand on the chest wall
2. Your middle finger should overlie the area you want to percuss (*between ribs*)
3. With your Right hand's middle finger, strike middle phalanx of your Left hand's middle finger
4. The striking finger should be removed quickly, otherwise you may muffle resulting percussion note

Percuss the following areas, comparing side to side:

- **Supraclavicular** (lung apices)
- **Infraclavicular**
- **Chest wall** (3-4 locations bilaterally)
- **Axilla**

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*

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

In reality with time pressure, I would only consider checking the chest expansion and percussion/vocal resonance only if there were findings on auscultation.

Auscultation

Ask patient to take breaths in and out through their mouth. Work down anterior of chest from side to side and don't forget to listen to the lateral chest wall!

Listen for breath sounds: present, equal bilateral and that they are vesicular

Assess quality:

- Vesicular (*normal*)
- *Bronchial (harsh sounding – similar to auscultating over the trachea – inspiration and expiration are equal and there is a pause between) – associated with consolidation*

Assess volume:

- *Quiet breath sounds suggest reduced air entry – consolidation / collapse / pleural effusion*

Added sounds:

- *Wheeze – asthma / COPD*
- *Coarse crackles – pneumonia / bronchiectasis / fluid overload*
- *Fine crackles – pulmonary fibrosis*
- *Pleural friction rubs-crunching on snow sound*

Vocal resonance:

- Ask patient to say “99” repeatedly and auscultate the chest again
- *Increased volume over an area suggests increased tissue density (especially if there is a dull percussion note over the same area) – consolidation / tumour / lobar collapse*
- *Decreased volume over an area (especially if there is an associated dull percussion note) suggests fluid outside of the lung (pleural effusion)*

Ask patient to sit forwards

Assess the posterior chest

Spend more time assessing the posterior aspect of the chest as this is where you are likely to find clinical signs.

Examine the sacrum for oedema (fluid overload in cor pulmonale)

Examine the legs:

- Pitting oedema (fluid overload in cor pulmonale)

- Assess the calves for signs of deep vein thrombosis (*PE*)
- Inspect for evidence of erythema nodosum (associated with sarcoidosis)
- The back for signs of kyphoscoliosis

Important to note that you will usually examine the respiratory system in conjunction with the cardiovascular examination.

GOODBYES: