Respirology – Pleural Effusion: What You Need to Know

Whiteboard Animation Transcript
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Pleural effusion is a common clinical sign associated with a variety of clinical conditions. It usually presents as progressive shortness of breath and as a complication of a known underlying disease. Small effusions **might be asymptomatic and incidentally detected** on imaging studies.

If the patient presents with effusion and has a known systemic disease that is associated with an **imbalance in hydrostatic or oncotic pressures** (such as congestive heart failure, liver cirrhosis or nephrotic syndrome), thoracentesis is only required for alleviation of symptoms. This is called therapeutic thoracentesis.

If these conditions are absent, or if there is any clinical reason to suspect an **alternative diagnosis**, a diagnostic thoracentesis with analysis of the pleural fluid is essential because effusions are frequently associated with life-threatening conditions. The protein and LDH content in the fluid will determine if it is a transudate or an exudate, which are usually associated with systemic imbalances and life-threatening conditions, respectively.

What you cannot miss:

Ask about the temporal evolution. If the onset is acute, this is a medical emergency (for example, acute heart failure or pulmonary embolism).

If the patient is in distress, a thoracentesis should be performed promptly for alleviating the symptoms (don't forget to send it for analysis!).

Thoracentesis is performed with the patient seated upright. After antisepsis and local anaesthesia, insert a 22-gauge needle into the pleural space, one to two rib interspaces below the level of dullness to percussion, decreased breath sound, and loss of fremitus (but not below the 9th rib to prevent sub-diaphragmatic puncture). It should be performed midway between the posterior axillary line and the spine, passing over the superior rib margin to avoid the neurovascular bundle.

Fluid from **diagnostic thoracentesis** should be sent for chemical analysis, tissue cultures, differential cell count and cytological examination. The diseases that most often present with effusions are congestive heart failure, pulmonary and pleural infections, cancer and pulmonary embolism. So do a targeted anamnesis!

And remember: Every pleural effusion requires a final diagnosis.