How is the Mediastinum Organized?

Worksheet

The mediastinum is divided into the superior mediastinum (above the sternal angle) and the inferior mediastinum, which is further split into anterior, middle, and posterior compartments, each containing characteristic structures such as the heart, great vessels, trachea, esophagus, and sympathetic trunk.

Questions

1. Which mediastinal compartment contains the heart and pericardium?

A) Superior mediastinum
B) Anterior mediastinum
C) Middle mediastinum
D) Posterior mediastinum

2. Where is the thymus located?

A) Posterior mediastinum
B) Anterior mediastinum
C) Only the middle mediastinum
D) Only the superior mediastinum

3. Which structures are found in the posterior mediastinum?

A) Heart and pericardium
B) Thymus and internal thoracic vessels
C) Esophagus, descending aorta and sympathetic trunk
D) Trachea and aortic arch only

4. What landmark divides the superior mediastinum from the inferior mediastinum?

A) The xiphisternum
B) The sternal angle (plane of Louis)
C) The costal margin
D) The diaphragm

5. A CT scan shows a mass anterior to the heart and behind the sternum, in a young patient. Which mediastinal compartment is involved and what is the likely tissue of origin?

6. A patient has dysphagia and a mass compressing the esophagus near the vertebral column. Which compartment and what nearby structures are at risk?

7. Trace the path of the phrenic nerve from the neck to the diaphragm through the mediastinum.

8. Define: What are the four regions of the mediastinum?

9. Define: What landmark separates the superior from the inferior mediastinum?

10. Define: What is the main organ of the middle mediastinum?

Answer Key

1. C) Middle mediastinum - The middle mediastinum houses the heart, pericardium, and roots of the great vessels.

2. B) Anterior mediastinum - The thymus lies primarily in the anterior mediastinum, though it can extend into the superior mediastinum.

3. C) Esophagus, descending aorta and sympathetic trunk - The posterior mediastinum contains the esophagus, descending thoracic aorta, azygos system, thoracic duct, and sympathetic trunk.

4. B) The sternal angle (plane of Louis) - The sternal angle, at the level of T4/T5, marks the boundary between the superior and inferior mediastinum.

5. The location behind the sternum, in front of the pericardium, is the anterior mediastinum The anterior mediastinum's main resident organ is the thymus A common anterior mediastinal mass in young patients is a thymoma or lymphoma The '4 Ts' mnemonic (Thymoma, Teratoma, Thyroid, Terrible lymphoma) is used for anterior masses

6. The esophagus lies in the posterior mediastinum, against the vertebral bodies Nearby structures include the descending thoracic aorta, azygos vein, and thoracic duct A posterior mediastinal mass can compress the esophagus (dysphagia) or the sympathetic trunk (Horner syndrome) Neurogenic tumors are the most common posterior mediastinal masses (arising from nerve roots/sympathetic chain)

7. The phrenic nerve (C3-C5) enters the superior mediastinum alongside the great vessels It runs anterior to the root of the lung, distinguishing it from the vagus nerve which runs posterior It passes through the middle mediastinum along the fibrous pericardium It reaches and innervates the diaphragm, the target effector

8. Superior, anterior, middle, and posterior mediastinum.

9. The sternal angle (of Louis) anteriorly, corresponding to the T4/T5 vertebral disc posteriorly.

10. The heart and pericardium, along with the roots of the great vessels.