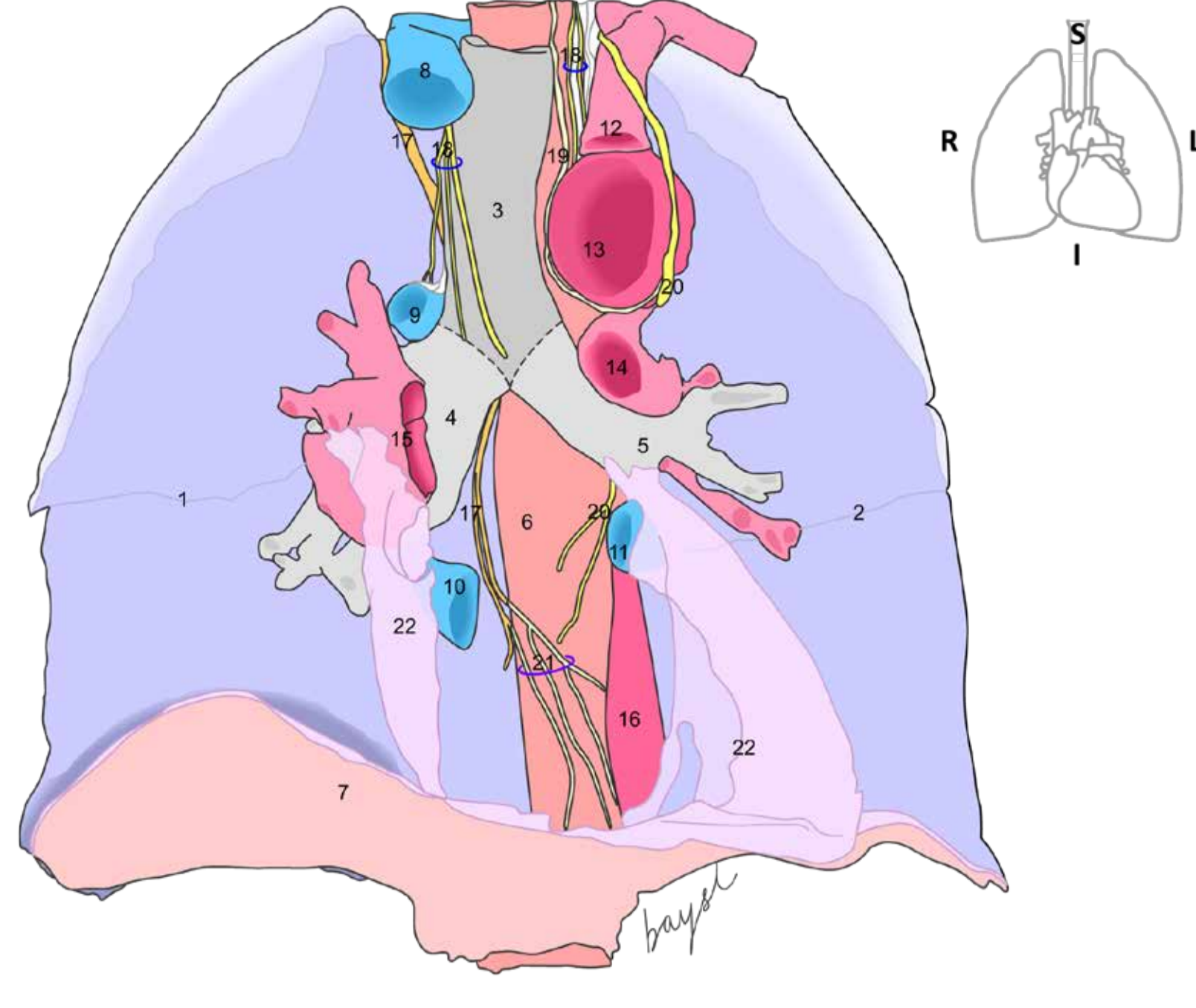


POSTERIOR RELATIONS OF HEART AND PERICARDIUM



Anterior view of the superior and posterior mediastinum.

- | | | |
|----------|-----|--------------------------------|
| | 1. | Trachea |
| | 2. | Right bronchus |
| | 3. | Left bronchus |
| | 4. | Esophagus |
| Veins | 5. | Brachiocephalic trunk |
| | 6. | Azygos vein |
| | 7. | Right pulmonary vein |
| Arteries | 8. | Left pulmonary vein |
| | 9. | Subclavian artery |
| | 10. | Aorta (arch) |
| | 11. | Left pulmonary artery |
| Nerves | 12. | Right pulmonary artery |
| | 13. | Aorta |
| | 14. | Right vagus nerve |
| | 15. | Cardiac nerves |
| | 16. | Left recurrent laryngeal nerve |
| | 17. | Left vagus nerve |
| | 18. | Esophageal plexus of nerves |
| | 19. | Pericardium |

The mediastinum is the midline region of the thoracic cavity that is surrounded by the right and left pleural sacs. It can be further categorized into the following areas:

1. Superior Mediastinum -

Its borders can be defined as:

- *Anterior* – Manubrium of sternum
- *Posterior* – Bodies of 1st to 4th thoracic vertebrae
- *Superior* – Thoracic inlet
- *Inferior* – Continuous with inferior mediastinum
- *Lateral* – Pleura of lungs

The contents of the superior mediastinum are:

- *Great vessels* – arch of aorta (and branches), superior vena cava (and tributaries)
- *Nerves* – phrenic nerve, vagus nerve, cardiac nerves, sympathetic trunk
- *Structures* – thymus, trachea, esophagus, thoracic duct, lymphatics, muscles

2. Posterior Mediastinum –

Its borders can be defined as:

- *Anterior* – Pericardium
- *Posterior* – 5th to 12th thoracic vertebrae
- *Roof* – Imaginary line as drawn from the sternal angle to the 4th thoracic vertebrae
- *Floor* – Diaphragm
- *Lateral* – Mediastinal parietal pleura

The contents of the posterior mediastinum are:

- *Vessels* – thoracic aorta (and branches), azygous, hemiazygous and accessory hemiazygous veins, esophageal plexus
- *Nerves* – vagus nerve, greater, lesser and least splanchnic nerves, sympathetic trunk
- *Structures* – esophagus, thoracic duct, lymphatics

CLINICAL CONSIDERATIONS

1. Superior vena cava obstruction – this occurs when there is a complete or partial obstruction in the superior vena cava (usually as a result of a tumorous growth such as in lung cancer). An obstruction of the superior vena cava can cause shortness of breath, chest pains, or an increased difficulty in swallowing.
2. Vagus nerve lesions – lesions of the vagus nerve may have differing symptoms based on where they are located along the course of the vagus nerve. An example is lesions on the recurrent laryngeal nerve; this may result in the paralysis of the vocal cords. While a unilateral lesion of the recurrent laryngeal nerve, may present as a hoarse voice, a bilateral lesion may result in death due to the obstruction of the trachea caused by the paralyzed vocal cords.

Question(s)

- *One of the contents of the superior mediastinum is the arch of aorta, discuss its three main branches and the main regions they supply.*
- *Discuss the muscles associated with the region of the superior mediastinum.*
- *Discuss the main structures innervated by the vagus nerve.*