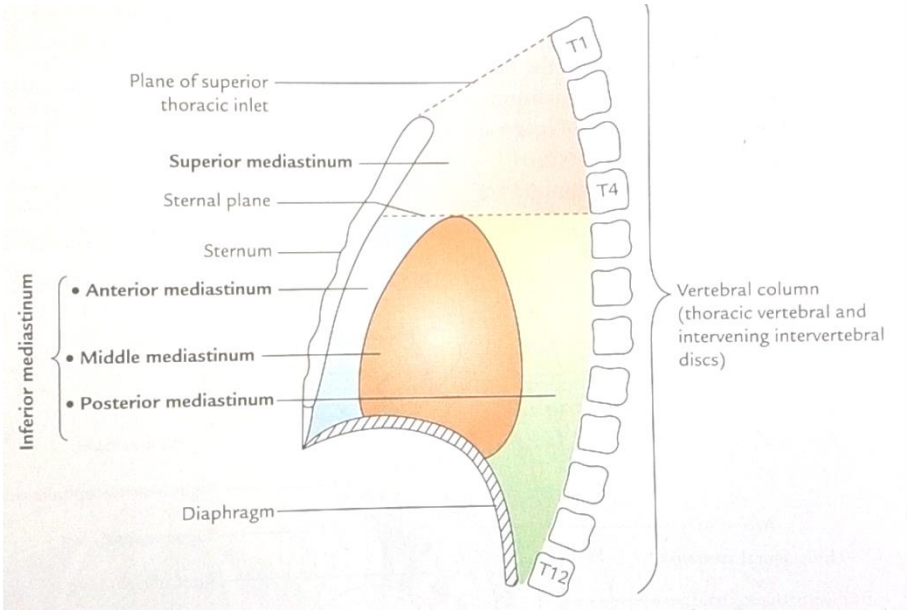
MEDIASTINUM

DEFINE MEDIASTINUM. DESCRIBE THE SUPERIOR MEDIASTINUM UNDER THE FOLLOWING HEADINGS: (A) BOUNDARIES (B) CONTENTS (C) APPLIED ASPECT. (LE)

DIVISION OF MEDIASTINUM AND NAME THE CONTENTS OF SUPERIOR MEDIASTINUM? (SE)

SUPERIOR MEDIASTINUM- BOUNDARIES AND CONTENTS. (SA)

Mediastinum is the space in the thoracic cavity in between the two pleural cavities



Divisions of the mediastinum

Mediastinum is divided into superior and inferior mediastinum by an imaginary plane passing through sternal angle (anteriorly) and the lower border of 4TH thoracic vertebra (posteriorly).

The inferior mediastinum is further divided into anterior, middle and posterior mediastinum.

It is divided by the pericardium which occupies the middle mediastinum.

The part of mediastinum in front of the pericardium is anterior mediastinum, and that behind the pericardium is the posterior mediastinum.

Superior mediastinum

Boundaries:-

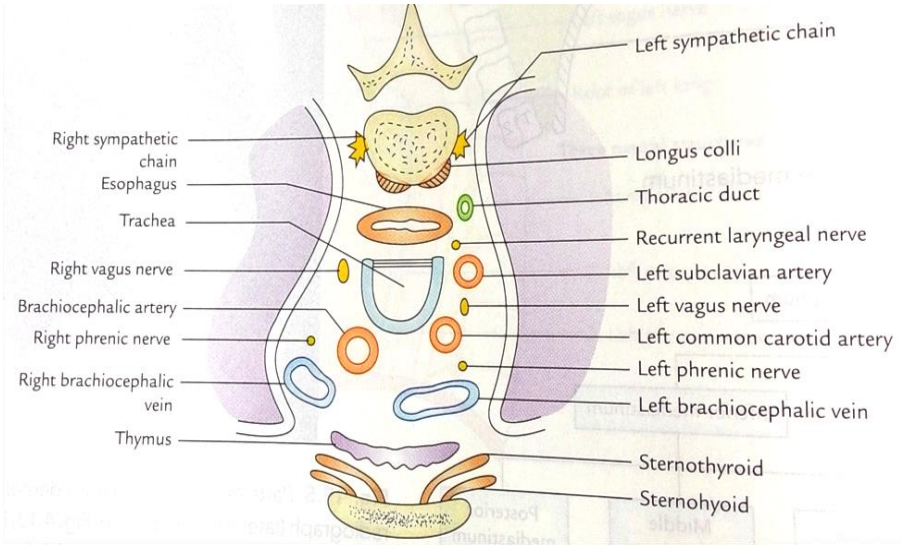
Anteriorly- manubrium sterni

Posteriorly- upper four thoracic vertebra

Inferiorly- by an imaginary plane passing through sternal angle (anteriorly) and the lower border of 4TH thoracic vertebra (posteriorly).

On each side- mediastinal pleura

Contents



Arteries

1)arch of aorta

2) brachioephalic artery

3) left comman carotid artery

4) left subclavian artery

Veins

1) right and left brachiocephalic veins

2) upper half of superior venacava

3)left superior intercostal vein

Nerves

Phrenic nerves

vagus nerves

sympathetic trunks and cardiac nerves

left recurrent laryngeal nerve

Trachea and oesophagus

Muscles-

origins of sternhyoid , sternothyroid

Thymus

Thoracic duct

Lymph nodes-

Applied aspects

Mediastinitis-

The prevertebral layer and pre tracheal layer of deep cervical fascia extend to the superior mediastinum. Hence neck infections between these fasciae can spread into the superior mediastinum.

In the superior mediastinum all large veins are on the right side and arteries on the left side. thus there is much dead space on the right side and it is into this space that tumour or cysts tend to project.

Mediastinal syndrome-

Compression of mediastinal structures by any tumours or cysts give rise to a group of symptoms known as mediastinal syndrome.

Causes

Bronchogenic carcinoma, Hodgkins disease, aortic aneurysm.

Clinical features

Engorgement of veins in the upper half of the body- due to obstruction of superior venacava.

Dyspnea(difficulty in breathing) – due to compressin of trachea

Dysphagia- due to compression of esophagus

Dysphonia- - due to compression of recurrent laryngeal nerve.

Intercostal neuralgia- due to pressure on the intercostal nerves

DEFINE MEDIASTINUM. MENTION THE CONTENTS OF POSTERIOR MEDIASTINUM. DESCRIBE THE THORACIC PART OF OESOPHAGUS. ADD A NOTE ON ITS APPLIED ANATOMY. (LE)

Mediastinum is the space in the thoracic cavity in between the 2 pleural cavities.

Mediastinum is divided into superior and inferior mediastinum by an imaginary plane passing through sternal angle (anteriorly) and the lower border of 4^{TH} thoracic vertebra (posteriorly).

Contents of posterior mediastinum:-

Oesophagus

Arteries-

- descending thoracic aorta and its branches

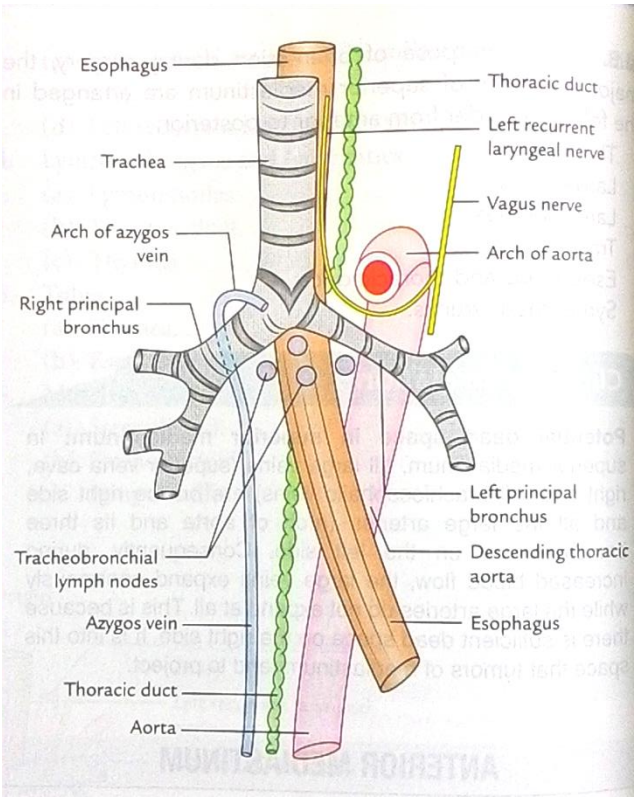
Veins

- Azygos vein
- Hemiazygos vein
- Accessory hemiazygos vein

Nerves

- Vagus
- Splanchnic nerves- greater, lessor and least
- Sympathetic trunk

Thoracic duct and posterior mediastinal lymph nodes.



structures in the posterior mediastinum

Oesophagus

Arteries

descending thoracic aorta and its branches

Veins

Azygos vein

Hemiazygos vein

Accessory hemiazygos vein

Nerves

Vagus

Splanchnic nerves- greater, lessor and least

Sympathetic trunk

Thoracic duct and posterior mediastinal lymph nodes.

Oesophagus is a 25 cm long muscular tube connecting the pharynx to the stomach. It is divided into 3 parts:-

Cervical part

Thoracic part

Abdominal part

The thoracic part extends from superior border of manubrium sterni to the oesophageal opening in the diaphragm.

Relations of thoracic part of oesophagus

Anteriorly_(from above downwards)

Trachea

Arch of aorta

Right pulmonary artery
Left principal bronchus
Left atrium enclosed in pericardium
Diaphragm

Posteriorly
Vertebral column
Right posterior intercostals arteries
Thoracic duct
Azygos vein
Hemiazygos veins
Descending thoracic aorta

To the right
Right lung and pleura
Azygos vein
Right vagus nerve
To the left
Arch of aorta
Left subclavian artery
Thoracic duct
Left lung and pleura
Left recurrent laryngeal nerve
Descending thoracic aorta

Blood supply
Arteries
Oesophageal branches of Descending thoracic aorta
Bronchial arteries
Venous drainage
Azygos vein
Hemiazygos vein
Lymphatic drainage
To Posterior mediastinal lymph nodes.

Applied aspect
Oesophagoscopy- is performed to visualise the interior of oesophagus.
Malignant tumours of oesophagus are more comman in the lower 1/3rd.

Posterior mediastinum- boundaries and contents.

Boundaries of posterior mediastinum:-

Anteriorly –
Pericardium
Bifurcation of trachea
Pulmonary vessels
Posterior part of the upper surface of diaphragm
Posteriorly –
Lower eight thoracic vertebrae and intervening discs
On each side -
mediastinal pleura

Contents of posterior mediastinum
Oesophagus
Arteries-
Descending thoracic aorta and its branches
Veins
Azygos vein
Hemiazygos vein
Accessory hemiazygos vein
Nerves
Vagus
Splanchnic nerves- greater, lessor and least
Sympathetic trunk
Thoracic duct and posterior mediastinal lymph nodes

ANTERIOR MEDIASTINUM- BOUNDARIES AND CONTENTS (SA)

Boundaries
Anteriorly – body of sternum
Posteriorly – pericardium
Superiorly – imaginary plane separating the superior from inferior mediastinum.
Inferiorly - superior surface of diaphragm
On each side - mediastinal pleura

Contents
Sternopericardial ligaments
Lymph nodes with lymphatics
Mediastinal branches of internal thoracic artery
Lower portion of thymus (in children)
Areolar tissue.

MIDDLE MEDIASTINUM - CONTENTS (SA)
Contents of middle mediastinum are-
heart
Pericardium
Arteries- ascending aorta, pulmonary trunk

Veins- superior venacava, azygos vein
Nerves – phrenic nerve, deep cardiac plexus
Lymph nodes- tracheobronchial
Bifurcation of trachea

Posterior mediastinum- contents

Contents of posterior mediastinum are:-
Oesophagus
Arteries-
- Descending thoracic aorta and its branches

Veins
- Azygos vein
- Hemiazygos vein
- Accessory hemiazygos vein

Nerves
- Vagus
- Splanchnic nerves- greater, lessor and least
- Sympathetic trunk

Thoracic duct and posterior mediastinal lymph nodes