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I.D No : 14729

Paper : Regional and radiological Anatomy - I

Question- 1

Answer

Diaphragm :

The diaphragm is a thin muscular and tendinous septum that separates the chest cavity above from the abdominal cavity below. The diaphragm is the most important muscle of respiration. It is dome shaped and consists of a peripheral muscular part. which arises from the margins of the thorax, and a centrally placed tendon.

The origin of the diaphragm can be divided into three parts :

Sternal :

A sternal part arising from the posterior surface of the xiphoid process.

Costal :

Costal part arising from the deep surface of the lower six ribs and their costal cartilages.

Vertebral :

Vertebral arising by vertical columns and from the sides of the bodies of the first three lumbar vertebrate and the intervertebral disc.

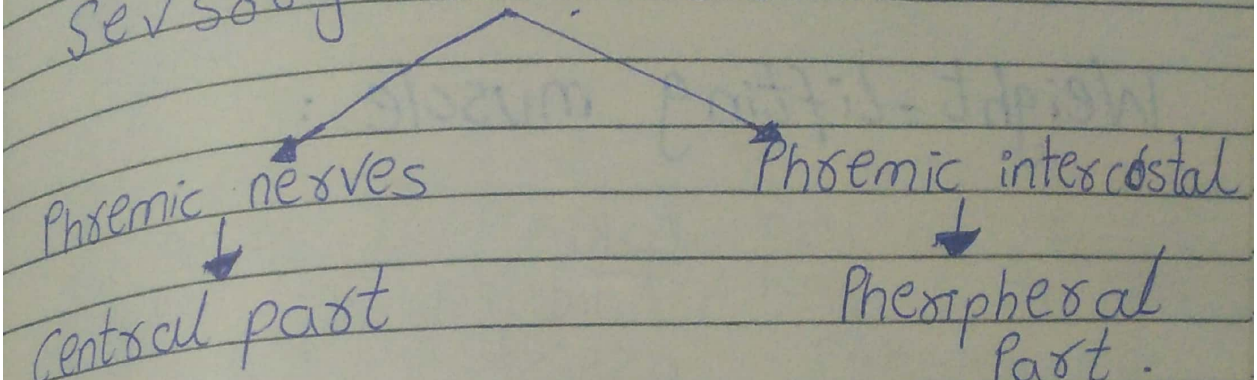
Lateral to the crura the diaphragm arises from the medial and lateral arcuate ligaments. The medial arcuate ligament extends from the side of the body of the second lumbar vertebra to the tip of

the transverse process of the first lumbar vertebra.

Diaphragm Shape:

Motar nerves from CNS → phremic nerves.

Sevsory - toward CNS



Function of Diaphragm

The diaphragm has four main functions:

Muscle of inspiration

On contraction, the diaphragm pulls its central tendon down and increases the vertical diameter of the thorax. The diaphragm is the most important muscle of used in inspiration.

Muscle of abdominal Straining:

The contraction of the diaphragm assists the contraction of the muscles of the anterolateral abdominal wall in raising the intra-abdominal pressure for micturition, defecation and parturition.

Weight-Lifting muscle:

In a person taking a deep breath and holding it the diaphragm assists the muscles of the anterolateral abdominal wall in raising the intra-abdominal pressure to such an extent that it help support the vertebral column and prevent flexion.

Thoracoabdominal pump:

The desent of the diaphragm decreases the intrathoracic pressure and at the same time increases the intra-abdominal pressure.

Diaphragm openings:

The diaphragm has three main openings.

Aortic opening:

Aortic opening lies anterior to the body of the 12th thoracic vertebra and between the crura. It transmits the aorta the thoracic duct and the azygos vein.

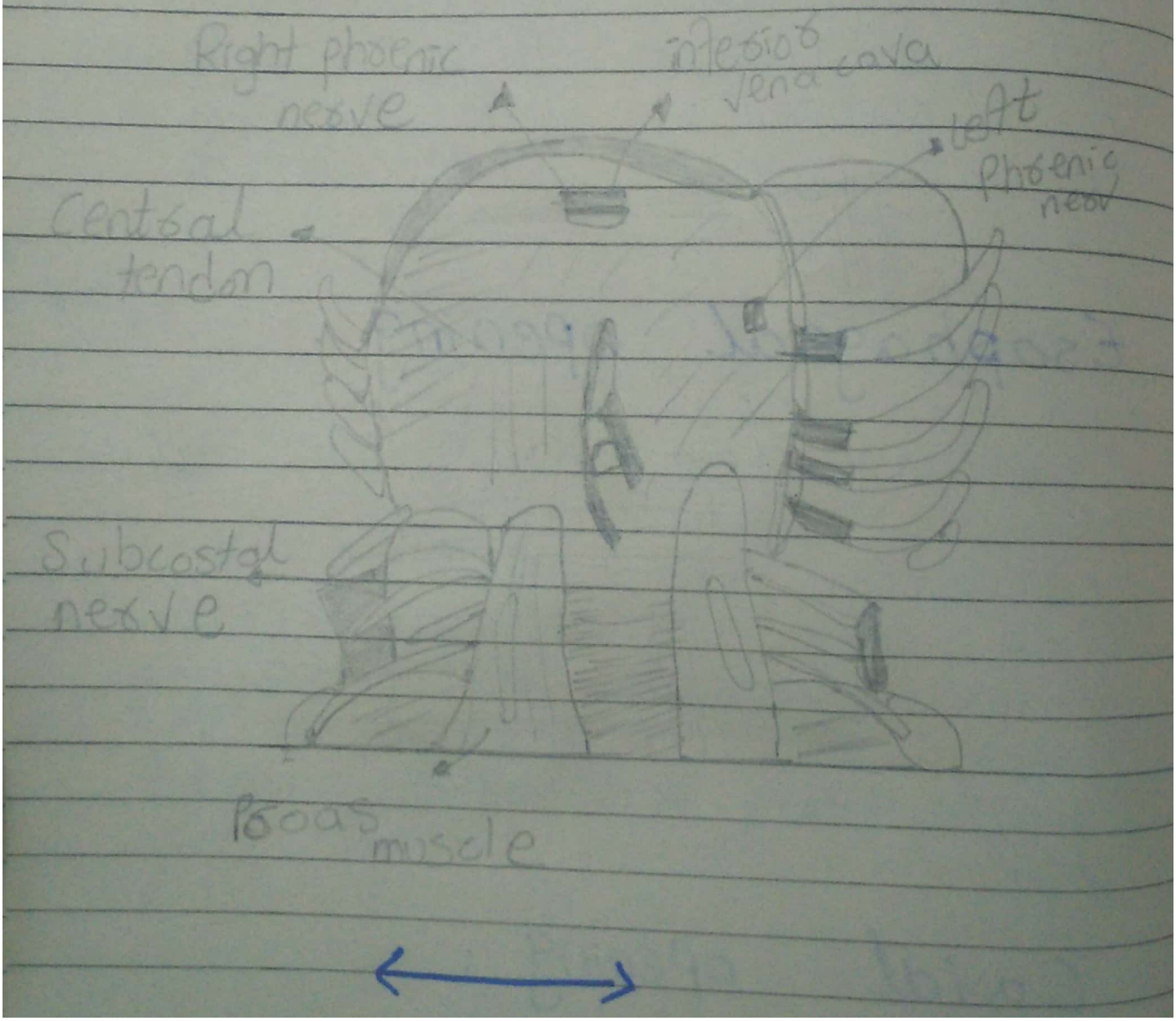
Esophageal opening:

Esophageal opening lies at the level of 10th thoractic vertebra in a sling of muscle fibers derived from the righ crus. It transmit the esophagus the right and left gastoric ~~ve~~ nerve.

Caval opening:

Caval opening lies at the level of eighth thoractic vertebra in the central

tendon. It transmits the inferior vena cava and ~~vena~~ terminal branches of the right phrenic nerve.



Question-2

Answer

Pericardium :

The pericardium also called pericardial sac, is a double-walled sac containing the heart and the roots of the great vessels. The pericardial sac has two layers a serous layer and a fibrous layer. It encloses the pericardial cavity which contains pericardial fluid.

The space between two layers is called pericardial space or pericardial cavity. A fluid is present in the space which is called pericardial fluid.

It also protects the heart and great vessels

against infection.

Position of Pericardium:

The pericardium is present within the middle mediastinum, posterior to the body of the sternum and the 2nd to 6th costal cartilages and anterior to the 5th to the 8th thoracic vertebrae.

Types of Pericardium:

Fibrous Pericardium

It is the strong fibrous part of the sac.

It is superficial layer of Pericardium.

It is firmly attached below to the central tendon of the diaphragm.

Serous Pericardium

The serous pericardium lines the fibrous pericardium and coats the heart. It is divided into two:

Parietal Pericardium

The parietal pericardium is fused to the and inseparable from fibrous pericardium.

Visceral Pericardium

The visceral pericardium is the part of the epicardium.

Nerve Supply of the Pericardium

The fibrous pericardium and the parietal layer of serous pericardium are supplied by the phrenic nerves.

The visceral of the serous pericardium is supplied by branches of the trunks and sympathetic vagus nerves.

Blood Supply of Pericardium

Fibrous pericardium and parietal layer of serous pericardium is supplied by pericardiophrenic and musculophrenic arteries which ar the branches of internal thoracic artery.

The veins drains into azygos veins and pericardiophrenic veins and then into internal thoracic vein.

Question- 3

Answer

Pleura

The pleura is a double layered membrane which covers the thoracic cavity.

The pleura is a vital part of respiratory tract whose role it is to cushion the lungs and reduce any friction which may develop between the lungs, rib cage and chest cavity.

The pleura consists of two layered membrane that covers each lung.

Function of Pleura :

The function of pleura

is to allow optimal expansion and contraction of the lungs during breathing. The pleural fluid acts as a lubricant, allowing the parietal and visceral pleura to glide over each other free. The friction produced by the pleural layers fluid is themselves.

The pleura is essential to respiration providing the lungs with the lubrication and cushioning needed to inhale and exhale.

Anatomy of Pleura

There are two pleura for each lung and each pleura is a single membrane that folds back on itself to form two layers. The space between the membrane is filled

with a thin lubricating liquid.

The pleura is comprised of two distinct layers:

Visceral pleura:

Visceral pleura is the thin, slippery membrane that covers the surface of lungs and dips into the areas separating the different lobes of the lungs.

Parietal pleura:

Parietal pleura is the outer membrane that lines the inner chest wall and diaphragm.

Parietal pleura covers the internal surface of the thoracic cavity.

Structures of pleura

Parietal pleura:

The parietal pleura covers the internal surface of thoracic cavity.

It can be subdivided according to the part of body that it it contact with:

Mediastinal pleura:

Covers the lateral aspect of mediastinum. the central component of thoracic cavity.

Cervical pleura:

lines the extension of pleural cavity into neck.

Costal pleura:

covers the innes aspect

& ribs and intercostal muscles.

Pleural Cavity:

It is a slit like space between the parietal and visceral pleura. It is also known as pleural space.

Pleural fluid:

It is tissue fluid present between visceral and parietal plura.

It reduces the friction between two layers of pleurae and also permits their movements.

Pleura in the body:

There are two layers the outer pleura is attached to the chest wall and the inner pleura covers the lungs and adjoining

Structures, bronchi and neves.

Pleura location:

The two lungs and their pleural sacs are situated in the thoracic cavity.

The pleura lines the thoracic wall and diaphragm where it is known as the parietal pleura.

The pleur is a thin, glistening, slippery serous membrane inflammation of which is called pleurisy.