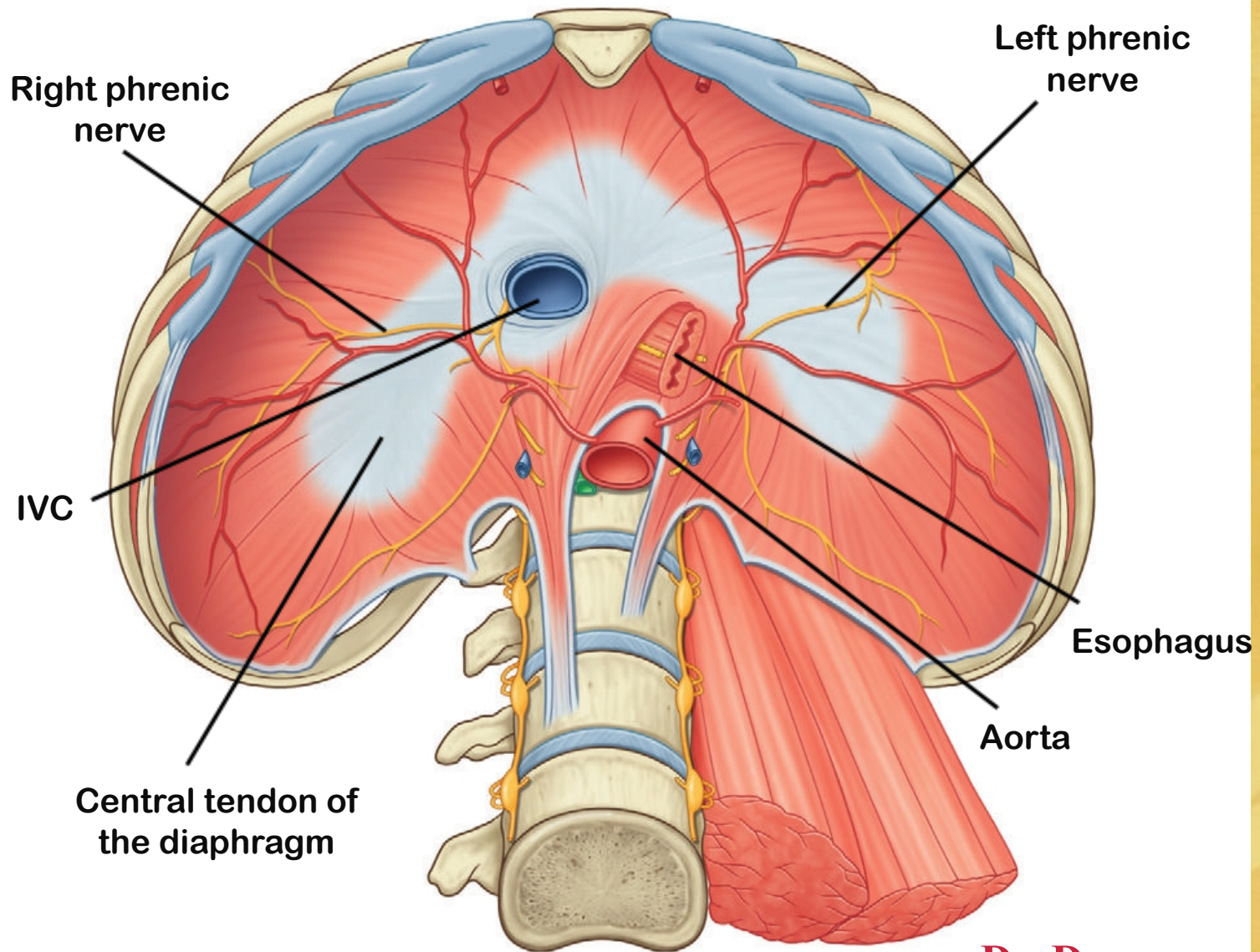


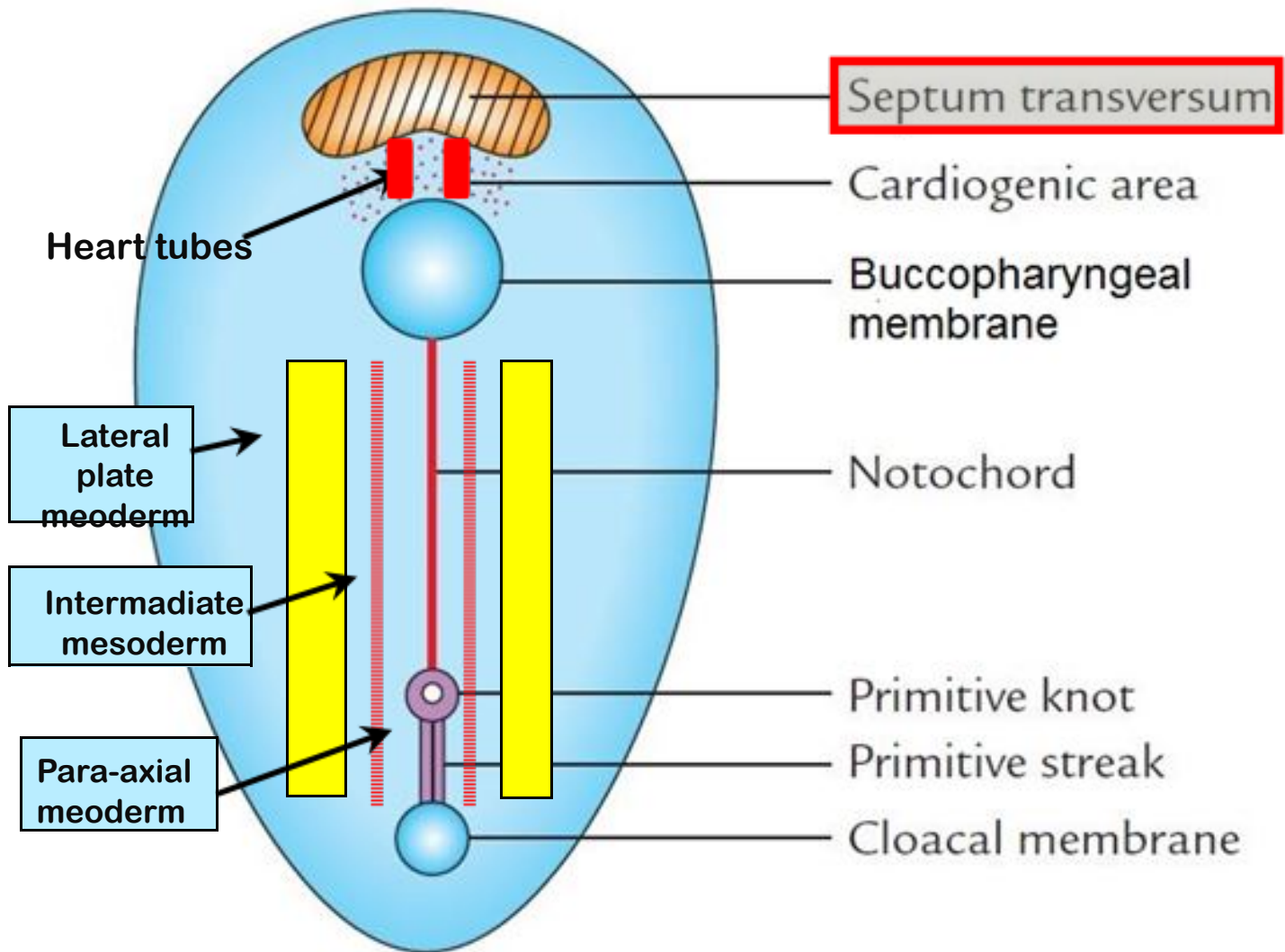


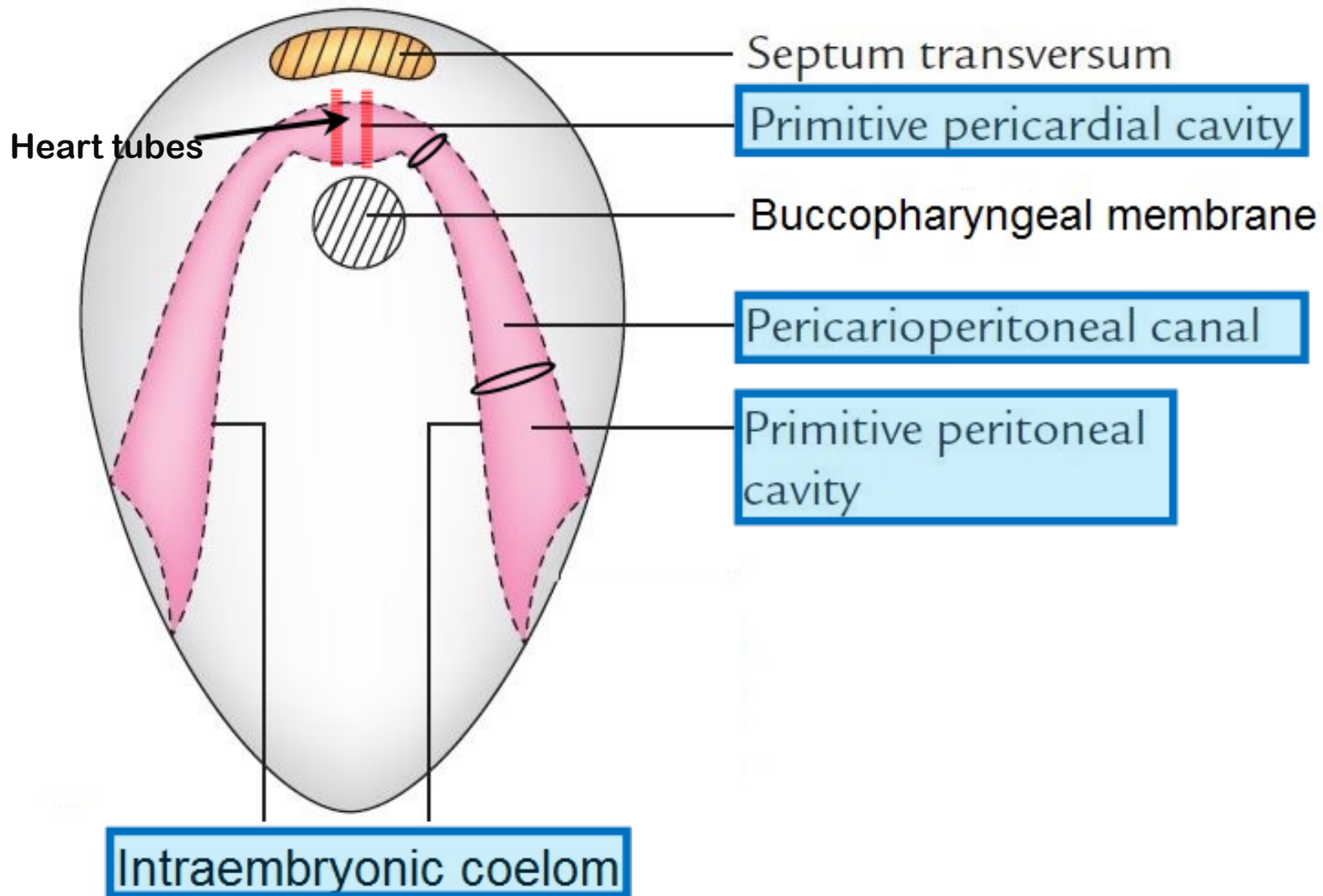
Dr. Doaa Shuaib

Development of the diaphragm

**Assistant Professor of Anatomy & Embryology
Faculty of Medicine – Cairo University
Email: doaa.shuaib@kasralainy.edu.eg**







Source: Textbook of Clinical Embryology (Vishram Singh)

Sources of the diaphragm

The diaphragm is formed by the union of 5 mesodermal structures:

- Septum transversum

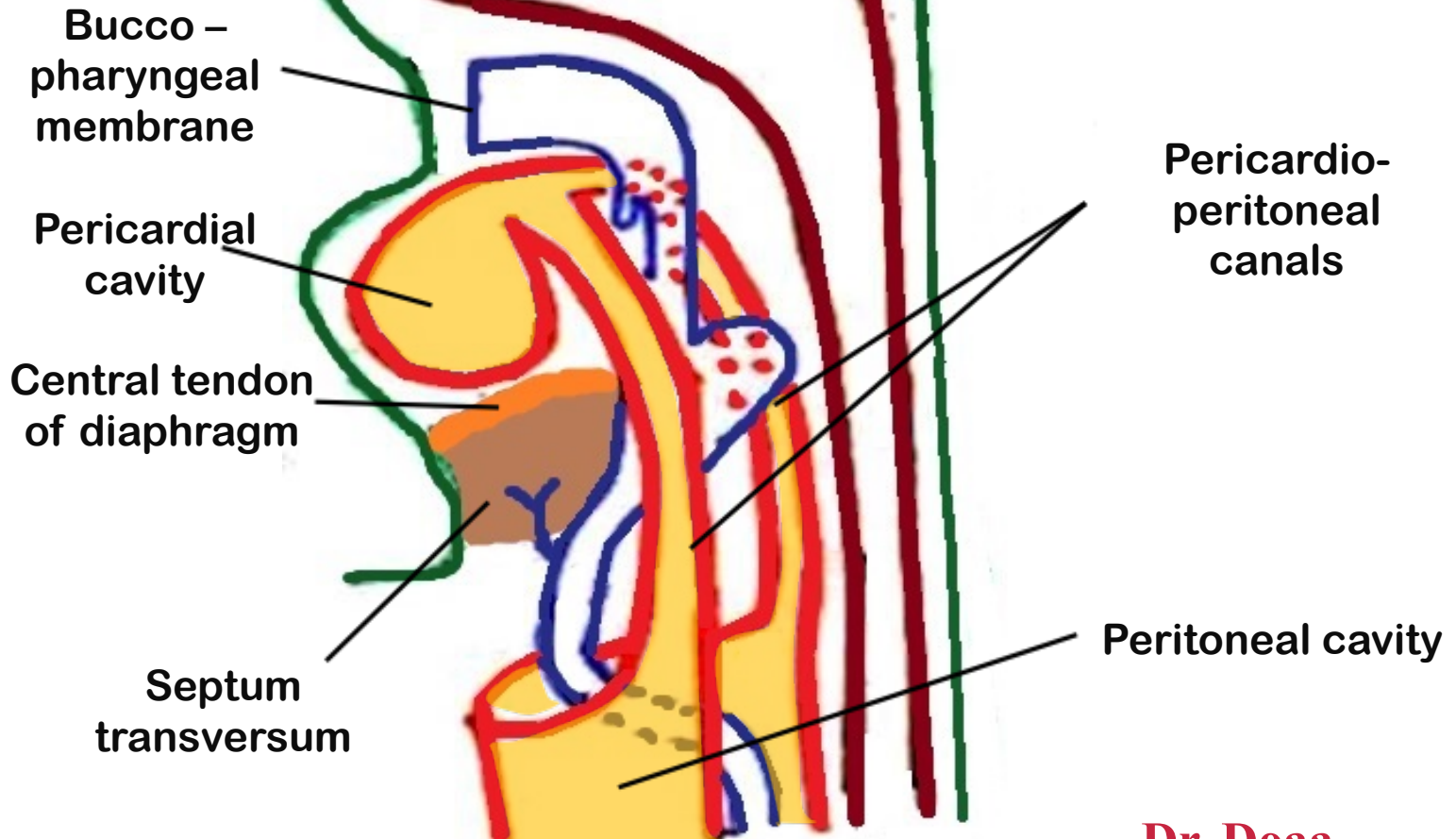
- 3rd, 4th and 5th cervical myotomes

- The 2 pleuro-peritoneal membranes

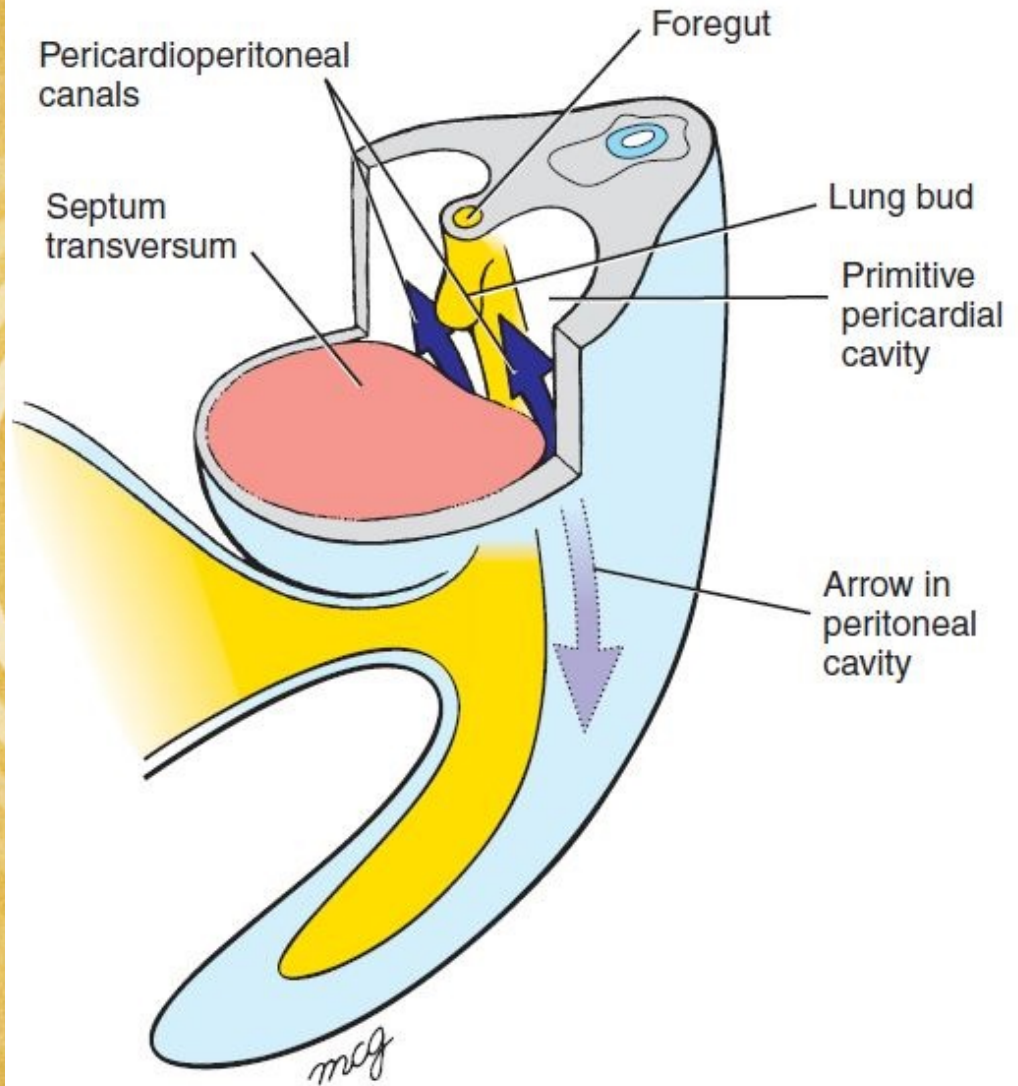
- Mesoderm of the chest wall

- Mesentery of the esophagus & mesoderm around the aorta

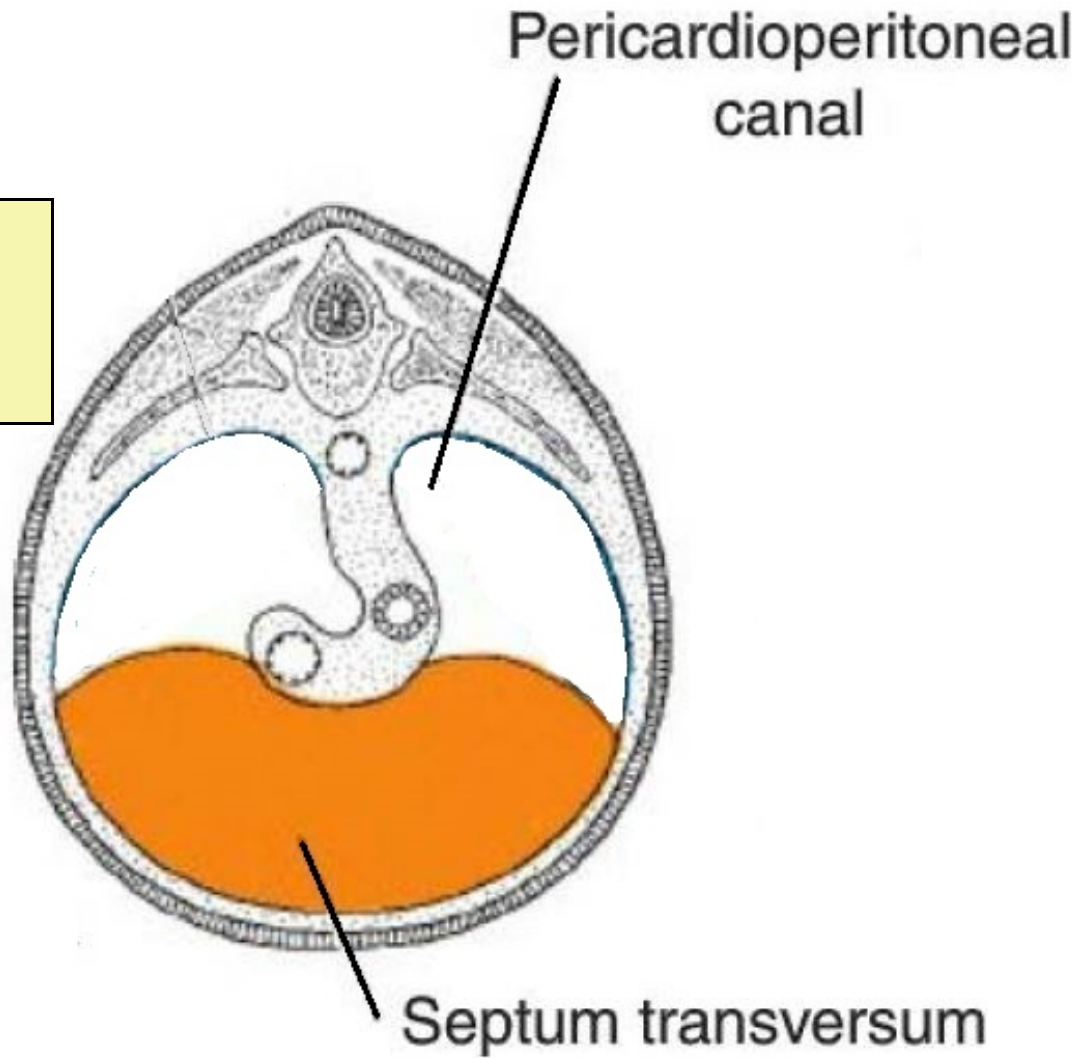
After folding



**pericardio-
peritoneal
canals**



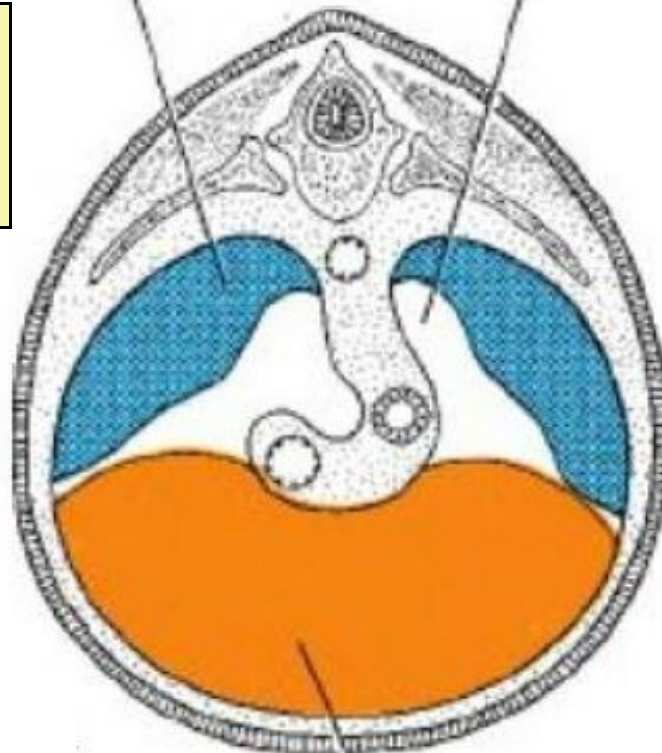
**pericardio-
peritoneal
canals**



**Pleuro -
peritoneal
membranes**

Pleuroperitoneal
membrane

Pericardioperitoneal
canal

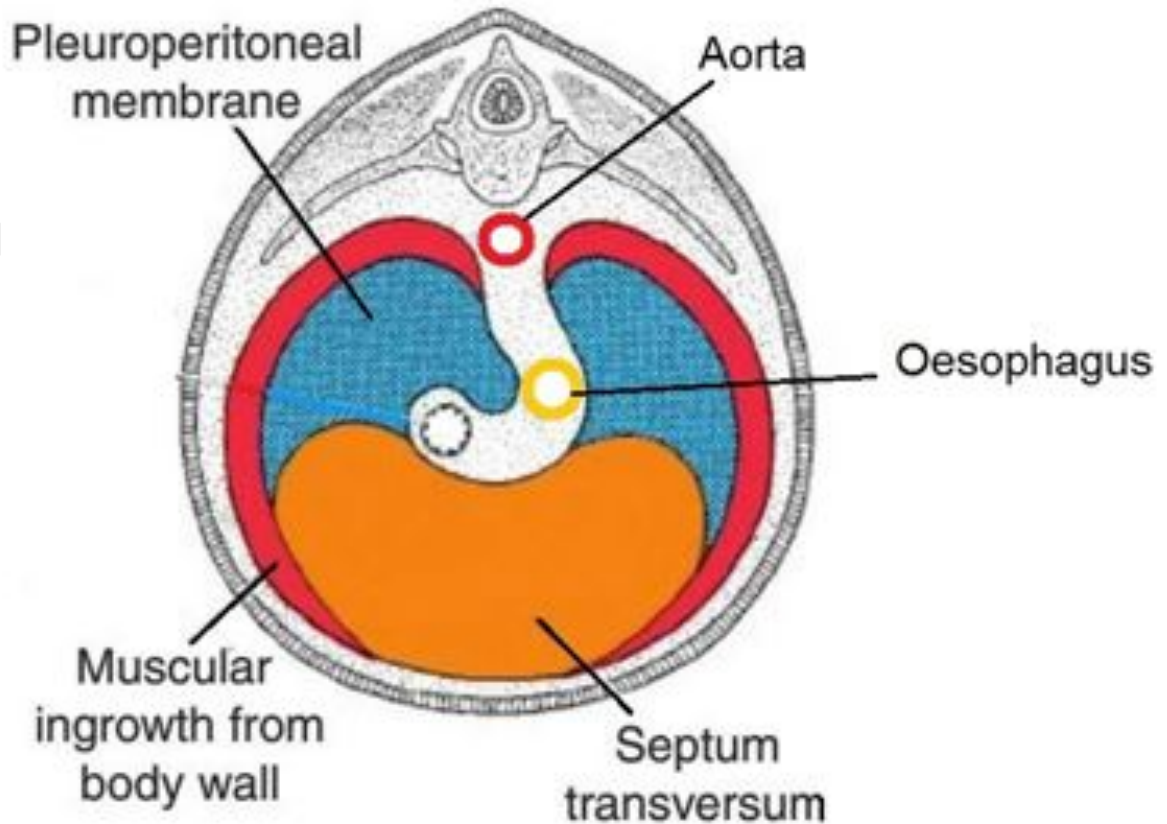


Septum transversum

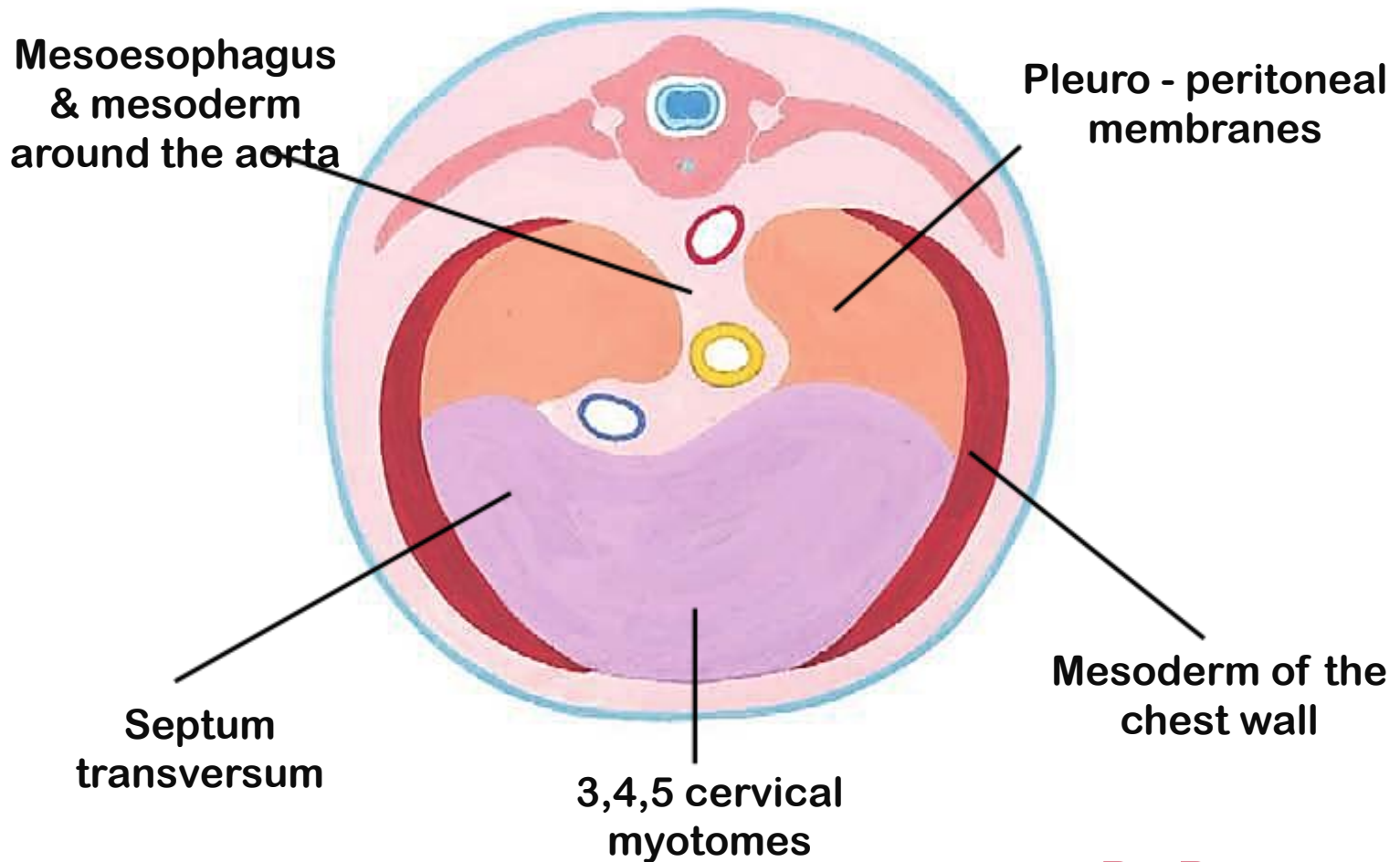
**Mesoderm of
the chest wall**

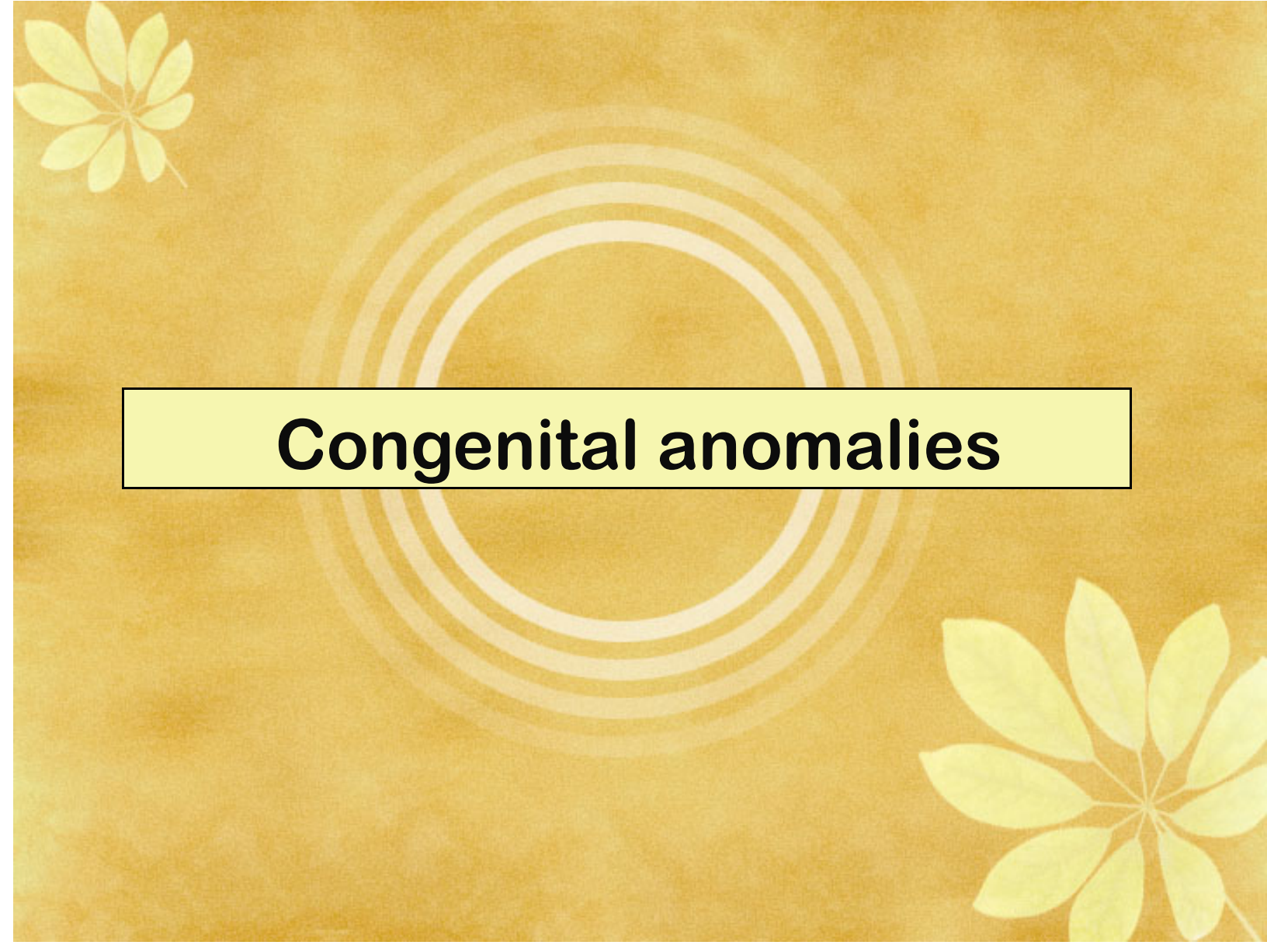
**Mesentery of
the
esophagus**

**Mesoderm
around the
aorta**

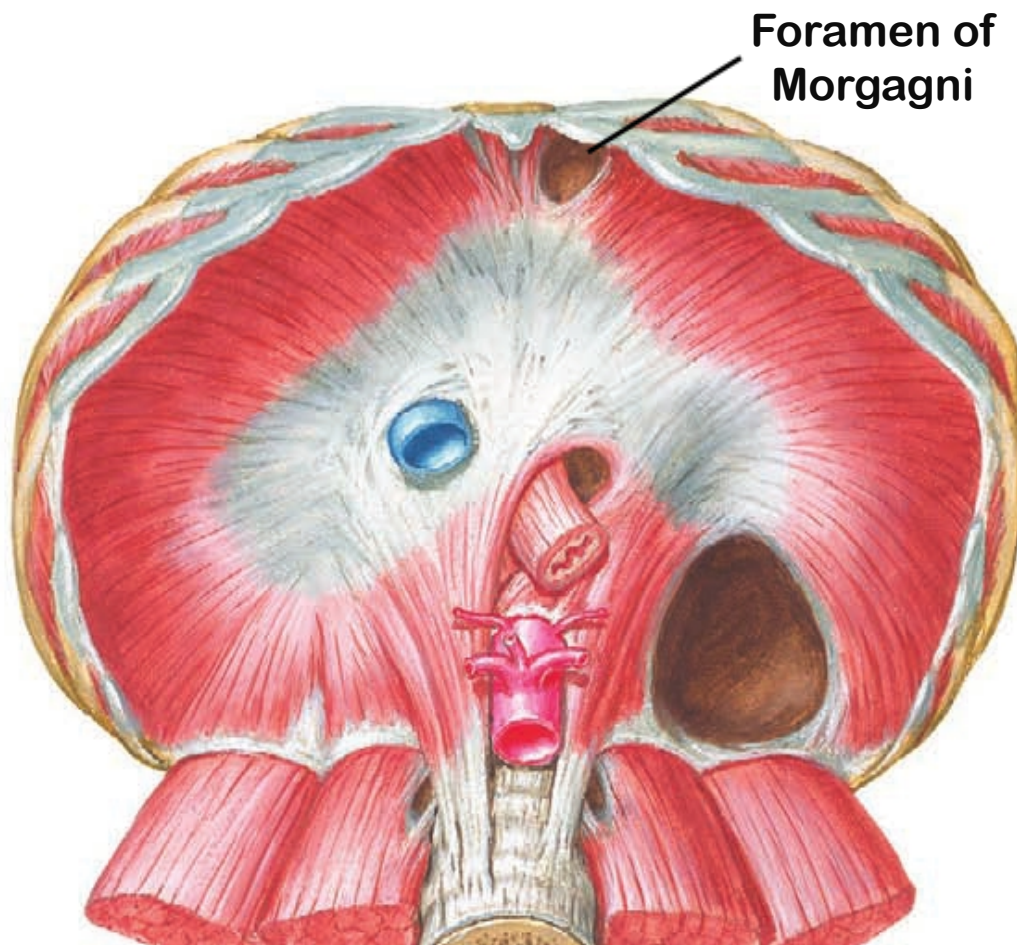


Sources of the diaphragm



The background is a textured, warm-toned surface. In the center, there are several concentric circles in a lighter shade of the background color. In the top-left and bottom-right corners, there are stylized floral or leaf-like motifs in a light yellow-green color.

Congenital anomalies



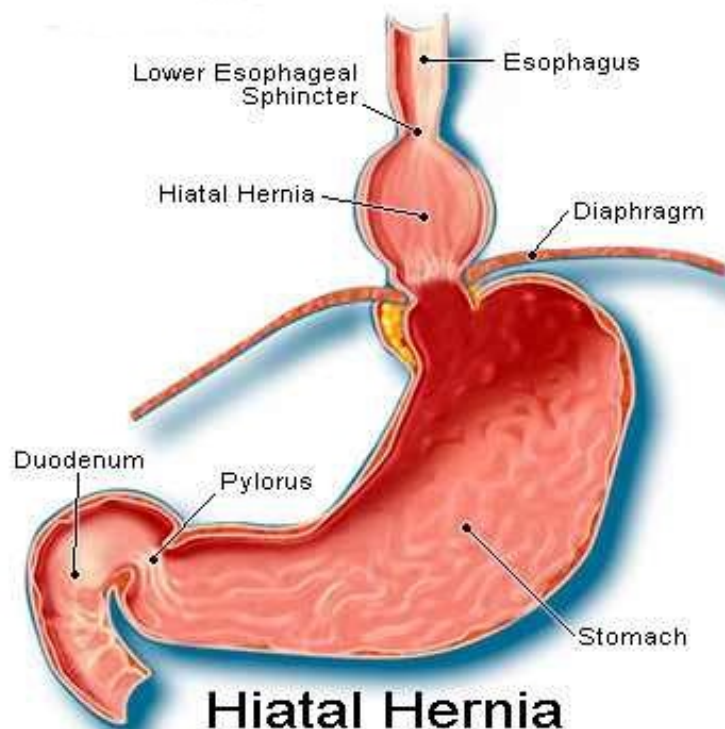
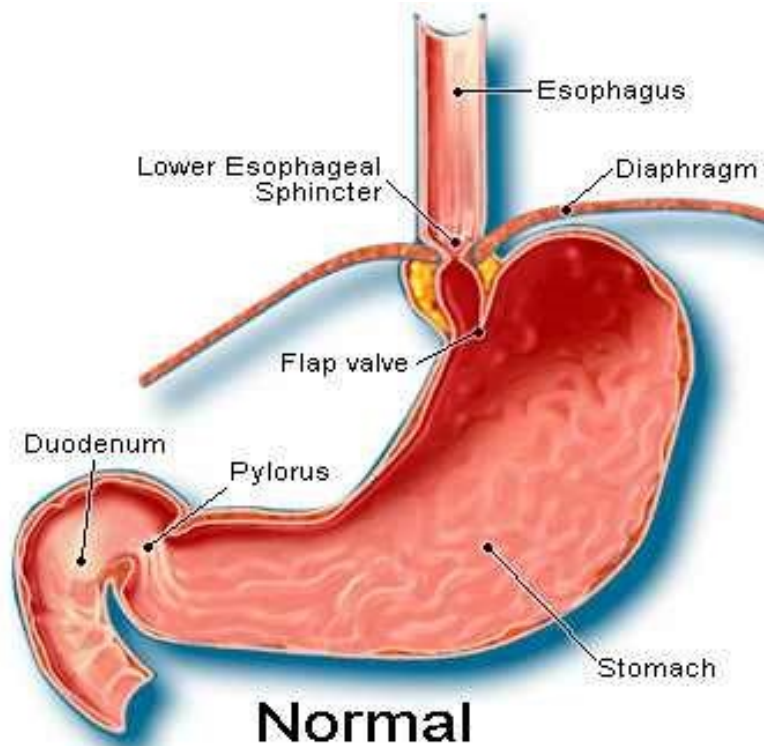
Source: Atlas of Human Anatomy, Sixth Edition- Frank H. Netter, M.D

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**Parasternal hernia of
Morgagni**

- Due failure of development of a small part of the diaphragm between the sternal and costal parts

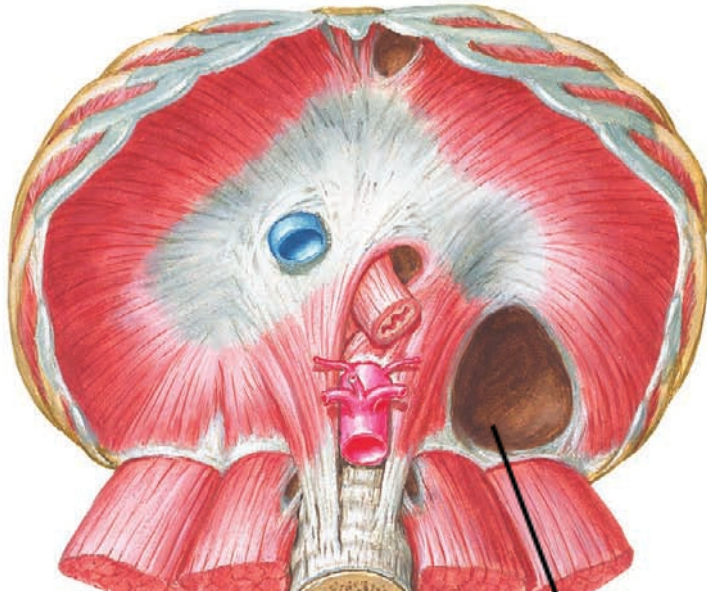


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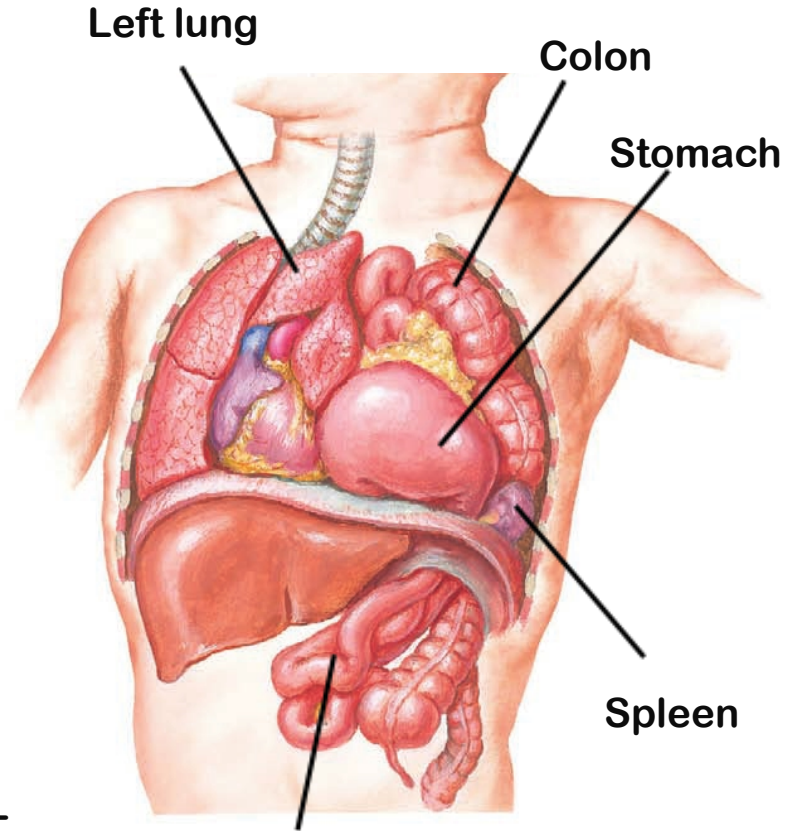
**Congenital hiatal
hernia (esophageal
hernia)**

- Due to widening of the esophageal hiatus of the diaphragm and congenital shortening of the esophagus leading to protrusion of the stomach into the thorax.



Absence of pleuro-peritoneal membranes

Source: Atlas of Human Anatomy, Sixth Edition- Frank H. Netter, M.D



Small intestine

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Congenital diaphragmatic hernia of Bochdalek

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Failure of the pleuro-peritoneal membranes to close the pericardio-peritoneal canals



Thank you



