أهلا وسهلا

Prof. Dr. Youssef Hussein Anatomy - YouTube

الأستاذ الدكتور يوسف حسين

رئيس قسم التشريح والأنسجة والأجنة

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دكتوراة من جامعة كولونيا المانيا

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Development of Stomach

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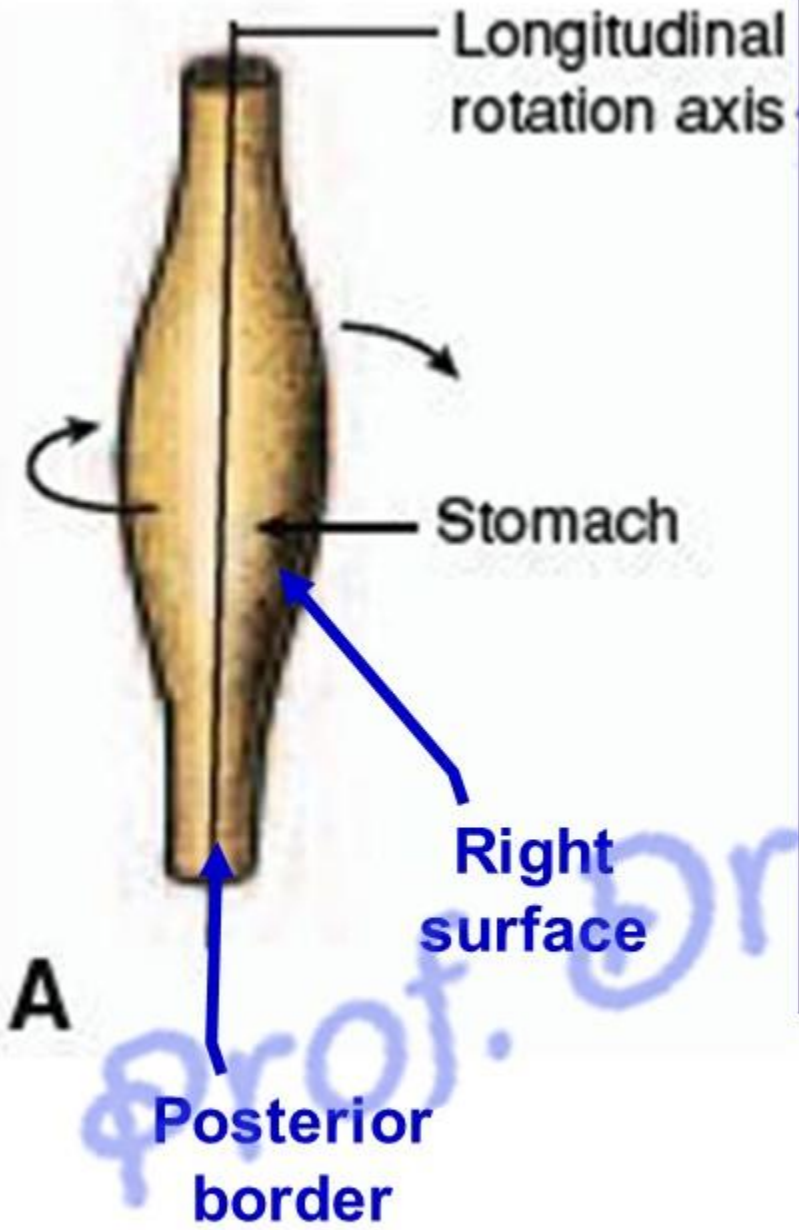

- It appears as a **fusiform dilatation** having **2 surfaces** (right and left) and **2 borders** (anterior and posterior).

- It is connected to anterior abdominal wall by **ventral mesogastrium and** posterior abdominal wall by **dorsal mesogastrium**

** **Changes during Development:**

1- Posterior border grows faster than anterior border and becomes convex forming **greater curvature**.

2- Anterior border grows slowly and becomes concave to form the **lesser curvature**.

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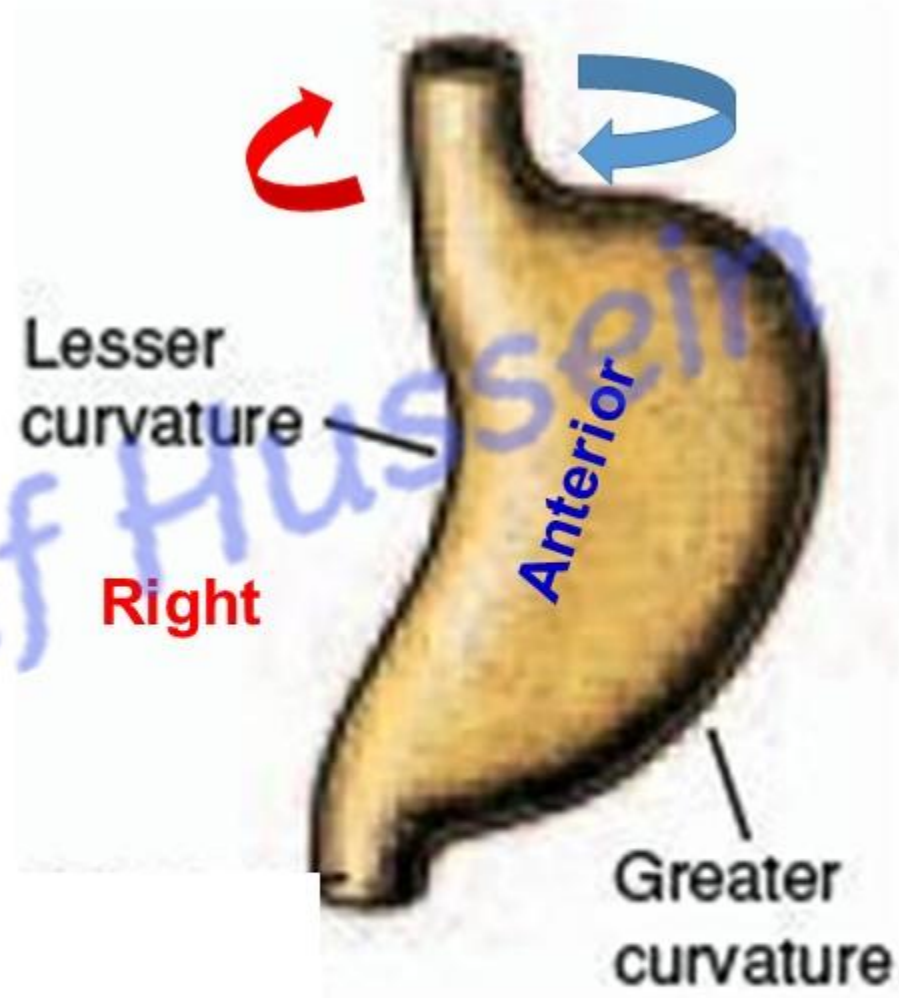
** Rotation of the stomach:

- The stomach **rotates 90°** **with** **clockwise** around the vertical axis.

1- The **greater** curvature is directed to the **left** and the **lesser** curvature to the **right**.

2- The **left** surface become **anterior** and **right** surfaces become **posterior**.

3- A small recess of the peritoneal cavity is formed behind the stomach forming the **lesser sac**.



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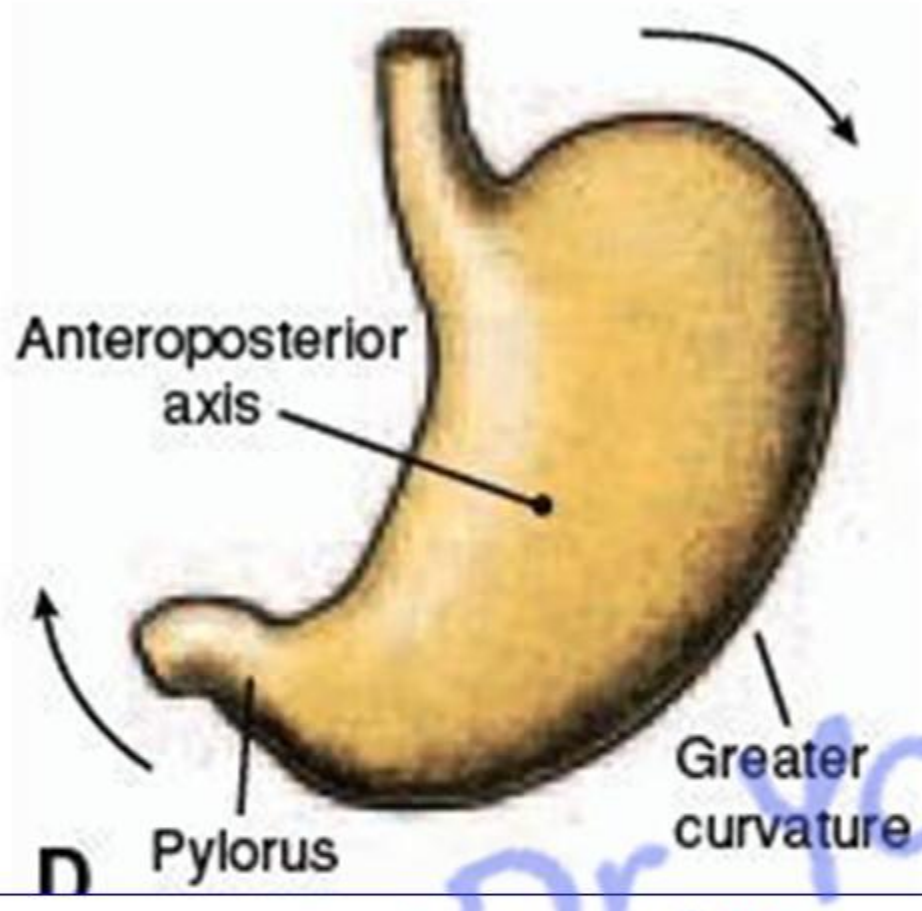
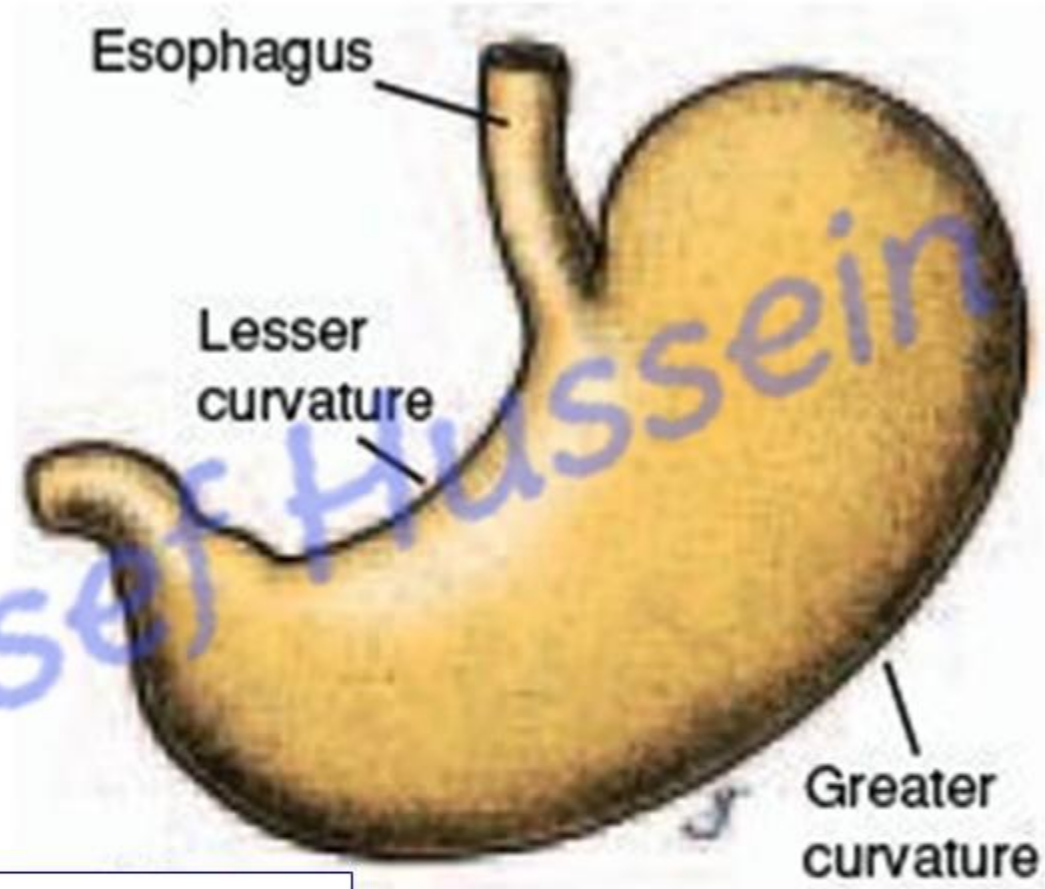
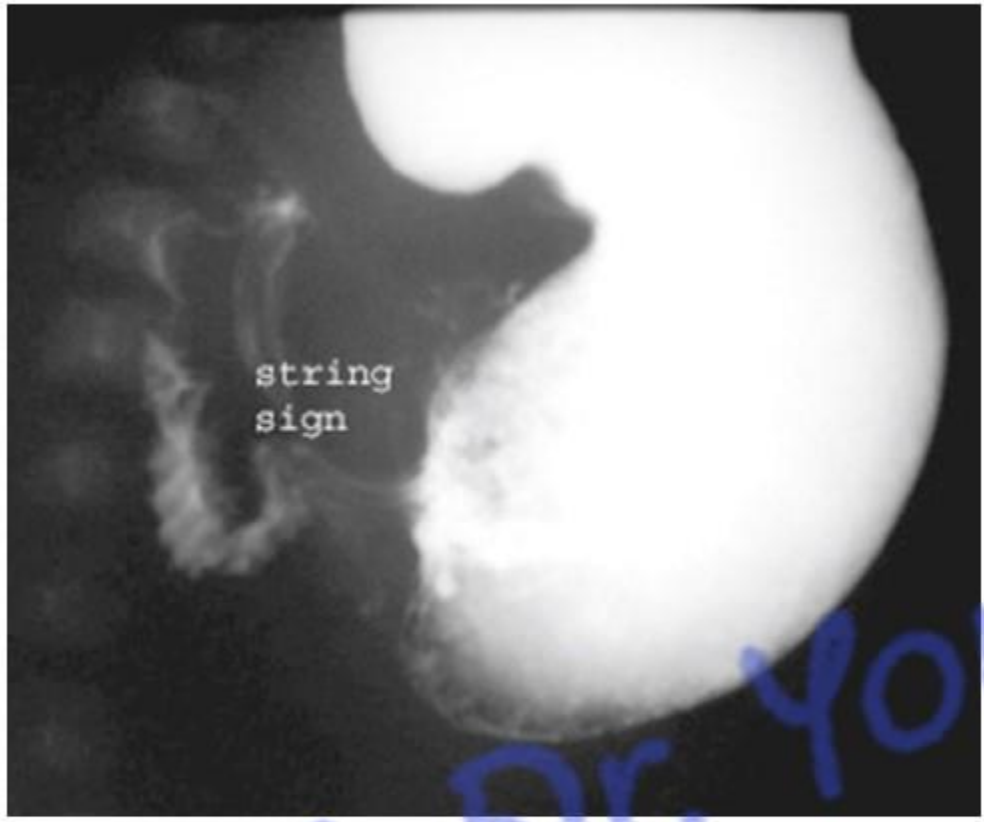
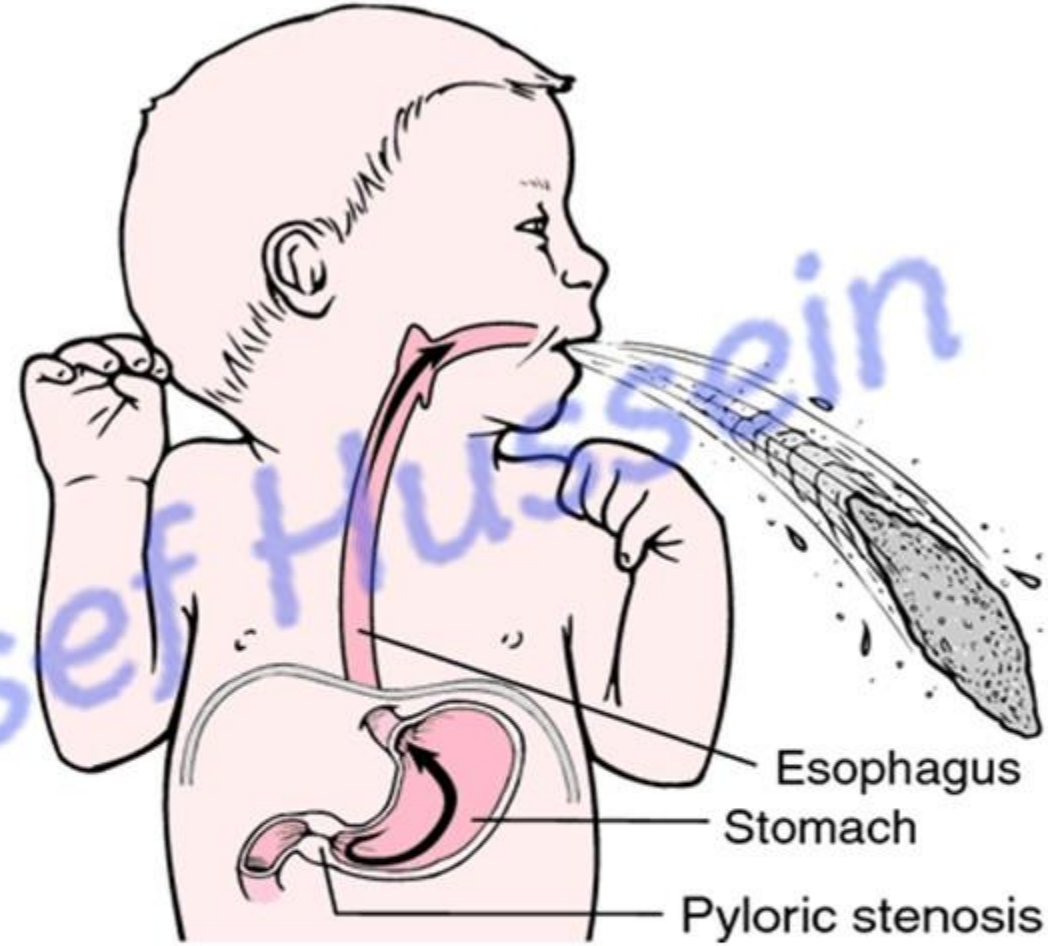




- Stomach **rotates with clockwise** around **anteroposterior axis** due to **Growth** of the **liver** pushes **cranial** end of the stomach to the **left** of the median and **caudal** end to the **right** of median plane.

Congenital pyloric stenosis





Congenital pyloric stenosis: due to excessive hypertrophy (**thickening of circular muscles**) of pylorus

- It leads to pyloric obstruction and projecting vomiting in the new born.

Hourglass stomach: due to abnormal constriction of the middle of the body of the stomach

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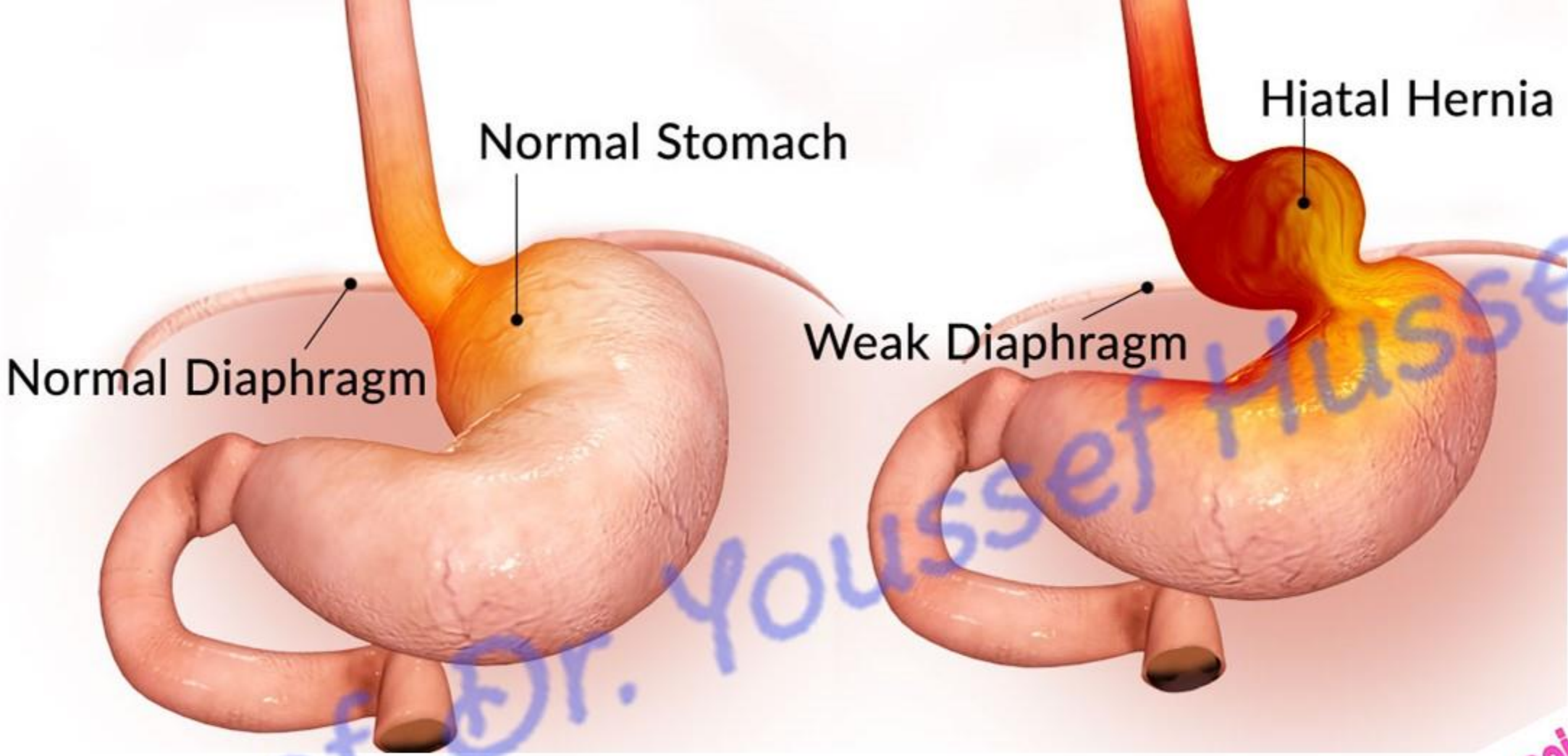

Congenital hiatus hernia, part of the stomach above the diaphragm due to short esophagus.

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Derivatives of Mesogastrium

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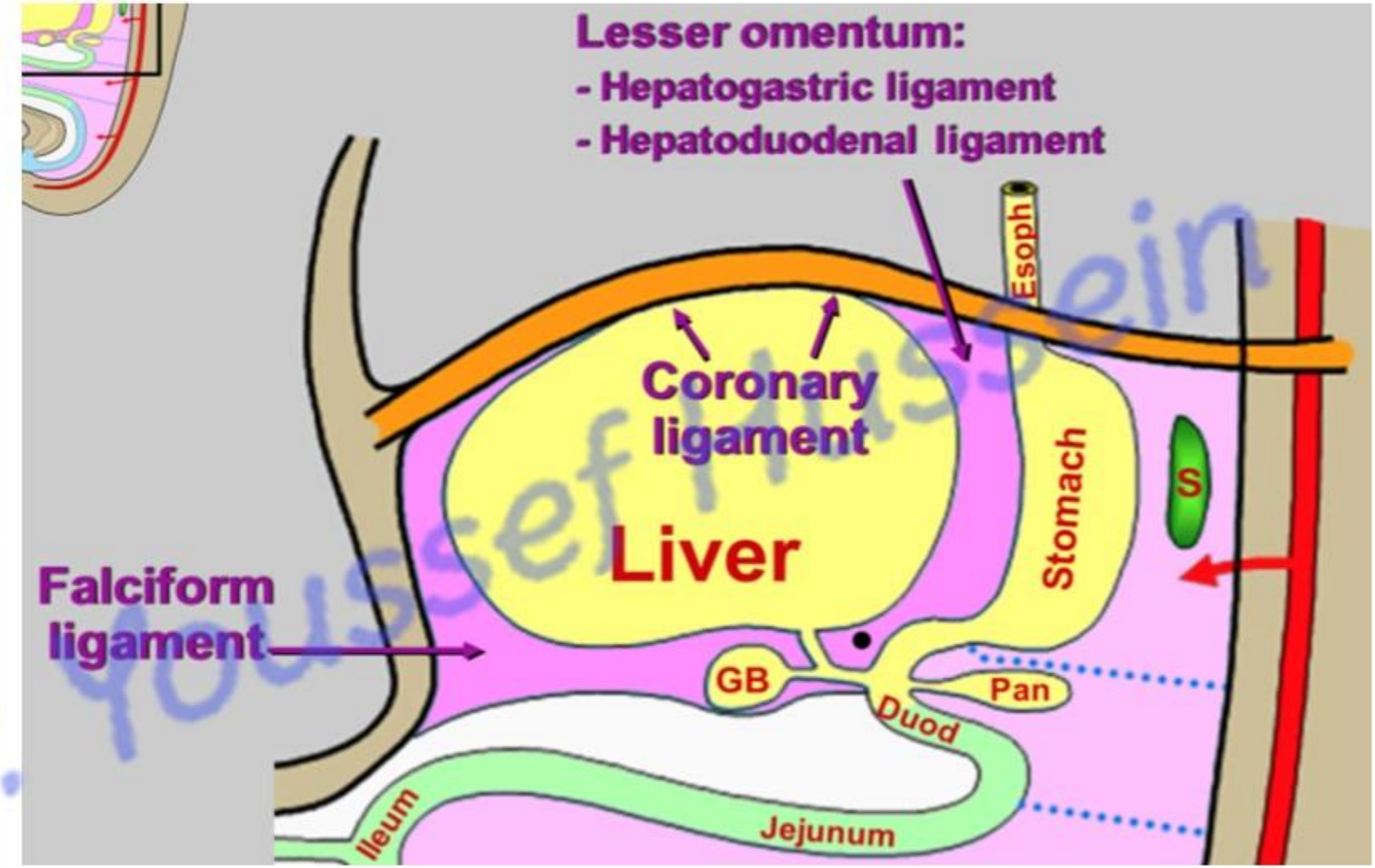
** **Derivatives of ventral mesogastrium:**

- **Liver** growths between its 2 layers dividing it into:

A- Ventral part: falciform ligament connecting the liver to anterior body wall.

B- Dorsal part: lesser omentum connecting liver to lesser curvature of the stomach.



** **Derivatives of dorsal mesogastrium:**

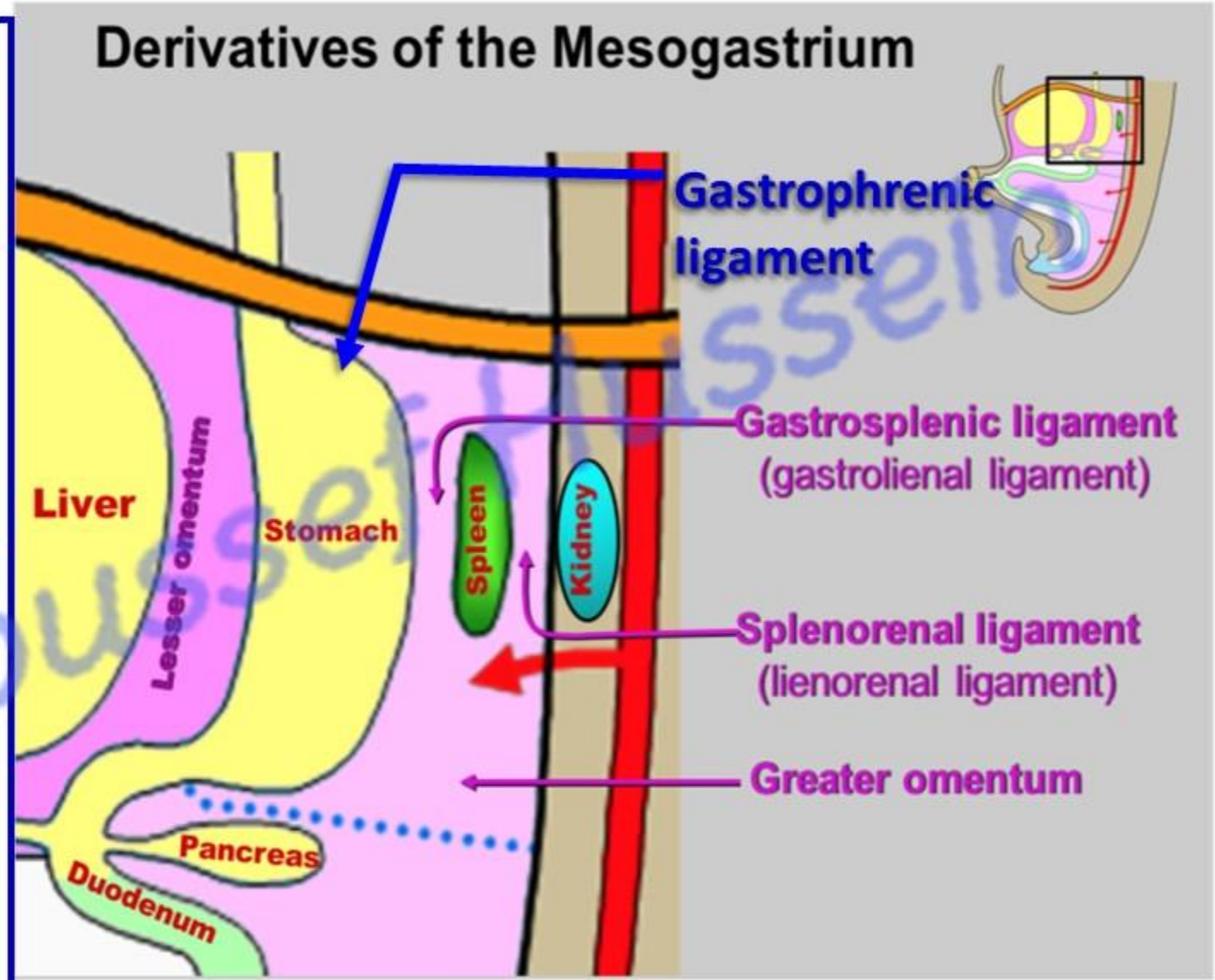
1- Cranial part forms **gastrophrenic ligament** between fundus of stomach and diaphragm.

2- Middle part is divided by spleen into:

A- Ventral part: gastrosplenic ligament between stomach and spleen.

B- Dorsal part: lienorenal ligament between spleen and left kidney.

3- Caudal part forms **greater omentum.**



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Development of Pancreas

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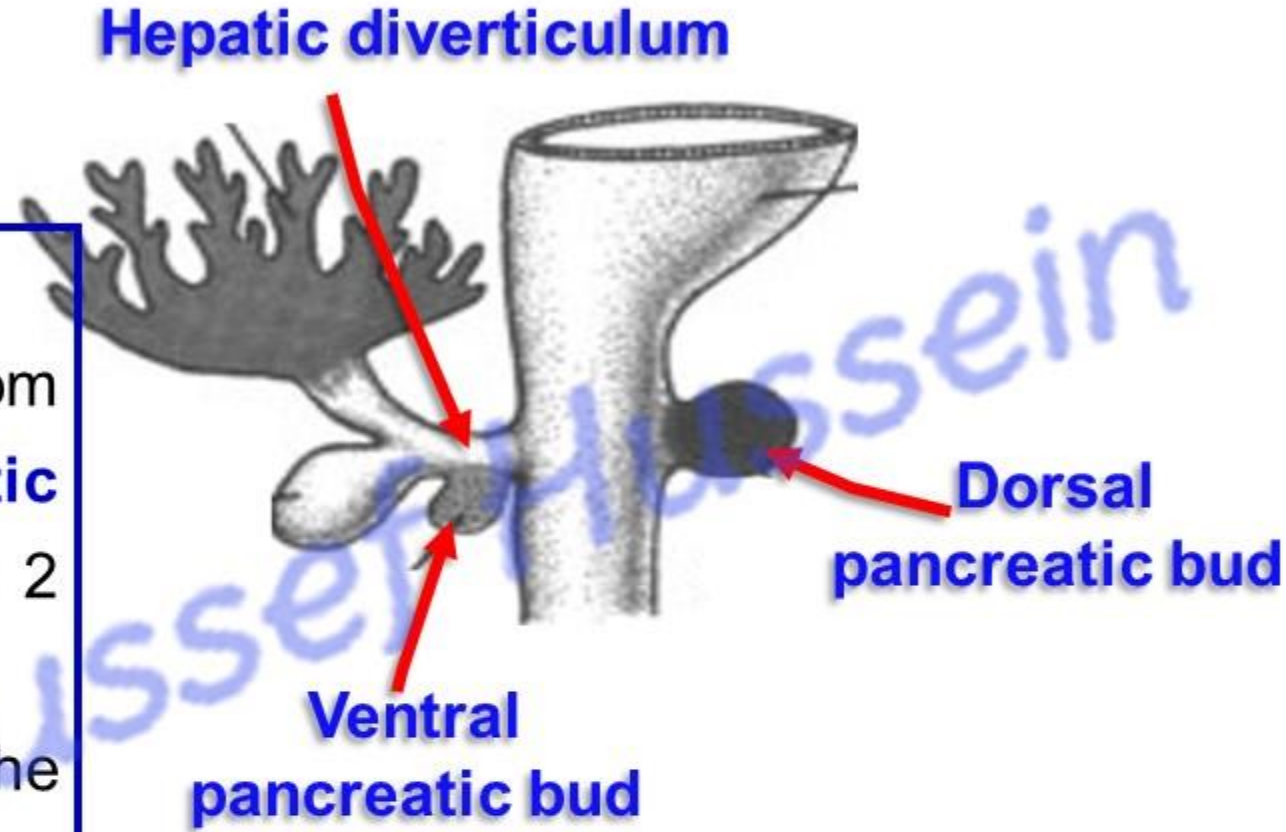
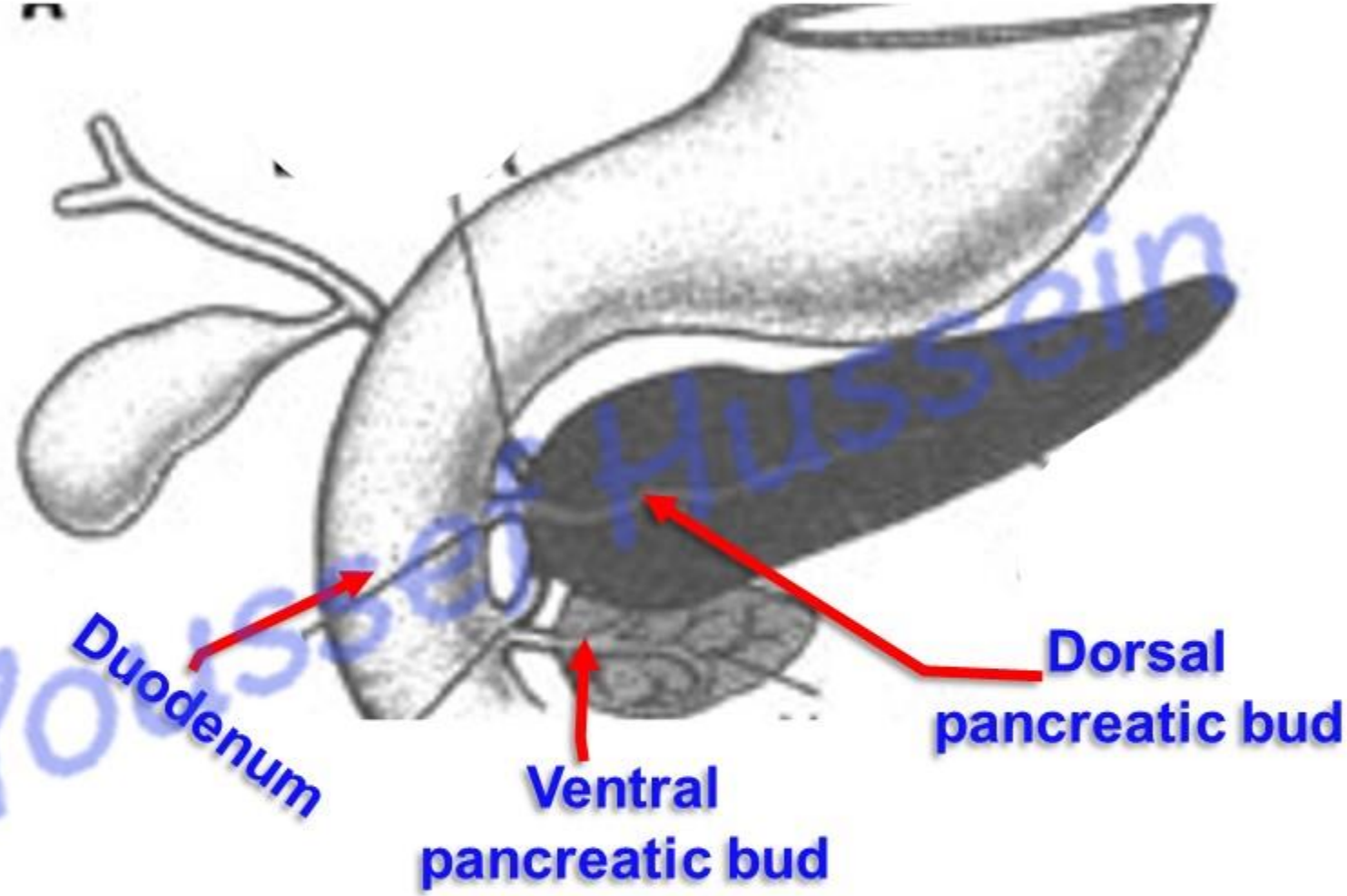
* The pancreas develops from 2 buds:

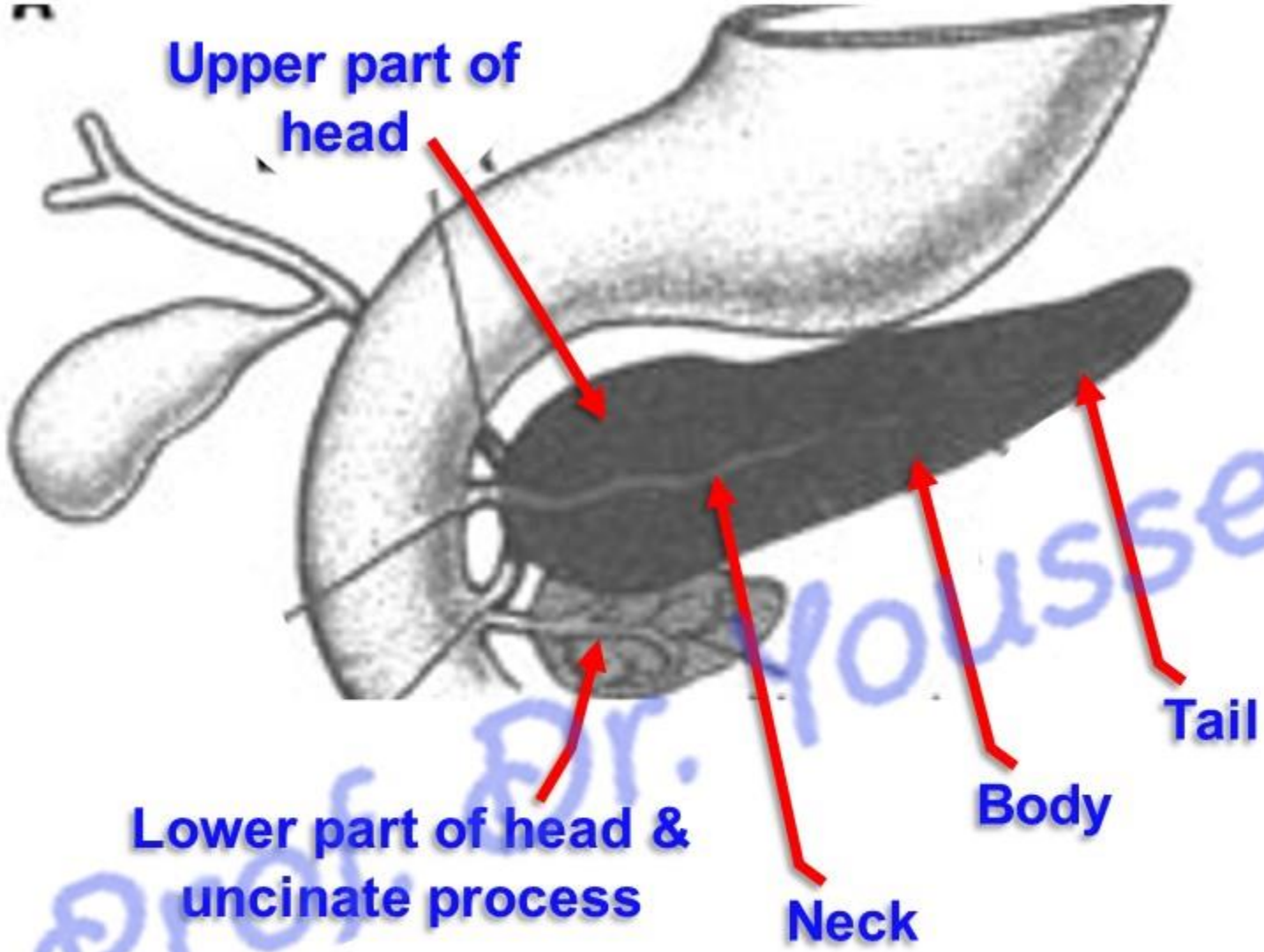
A- Ventral pancreatic bud arises from the proximal part of the **hepatic diverticulum** and extends between the 2 layers of the **ventral mesogastrium**.

B- Dorsal pancreatic bud arises from the **dorsal wall** of the duodenum **cranial to the hepatic diverticulum** and extends into the **dorsal mesogastrium.**



- **As a results of unequal growth of the wall of the duodenum and Rotation of the stomach 90° (clockwise);**
  - Movement of the ventral pancreatic bud to become with the dorsal bud in the concavity of the duodenum.





- **Dorsal pancreatic bud** gives rise to the upper part of the head, neck, body and tail.
- **Ventral pancreatic bud** forms the lower part of the head and its uncinate process.

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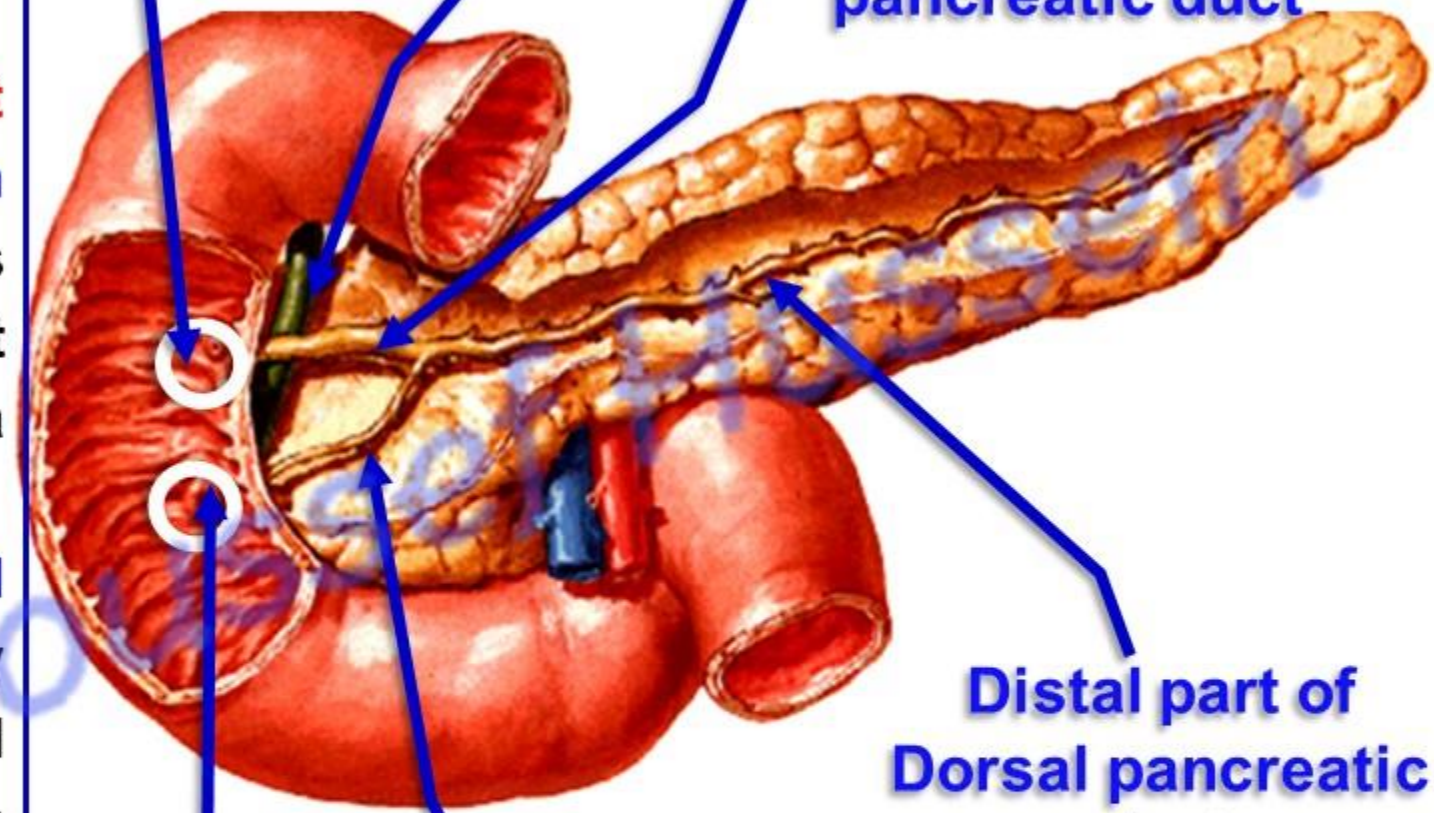
** **Development of pancreatic ducts:**

a- Distal part of dorsal pancreatic duct unites with **ventral duct** and forms **main pancreatic duct (duct of Wirsung)**, joins CBD and forms **hepatopancreatic duct** which opens at **major duodenal papilla (Vater)**.

b- Proximal part of the dorsal pancreatic duct form **accessory pancreatic duct (Santorini's Duct)** and opens at the minor duodenal papilla (one inch above).



- Some acini becomes solidified and separated to form **islets of Langerhans that** secrete insulin.

** Congenital Anomalies of the pancreas

- **Agenesis:** Failure of formation of pancreatic buds is extremely rare
- **Hypogenesis:** incomplete development of the pancreatic buds.
- **F**ailure of formation **islets of Langerhans**
  - **Type I diabetes mellitus (Inadequate of insulin)**

- **Ectopic pancreatic tissue**
- **Pancreatic divisum:** Failure of fusion of ventral pancreatic duct and distal part of dorsal pancreatic ducts together.
  - Upper part of head, body and tail drain in **minor duodenal papilla**
  - Lower part of head drains in **major duodenal papilla**.

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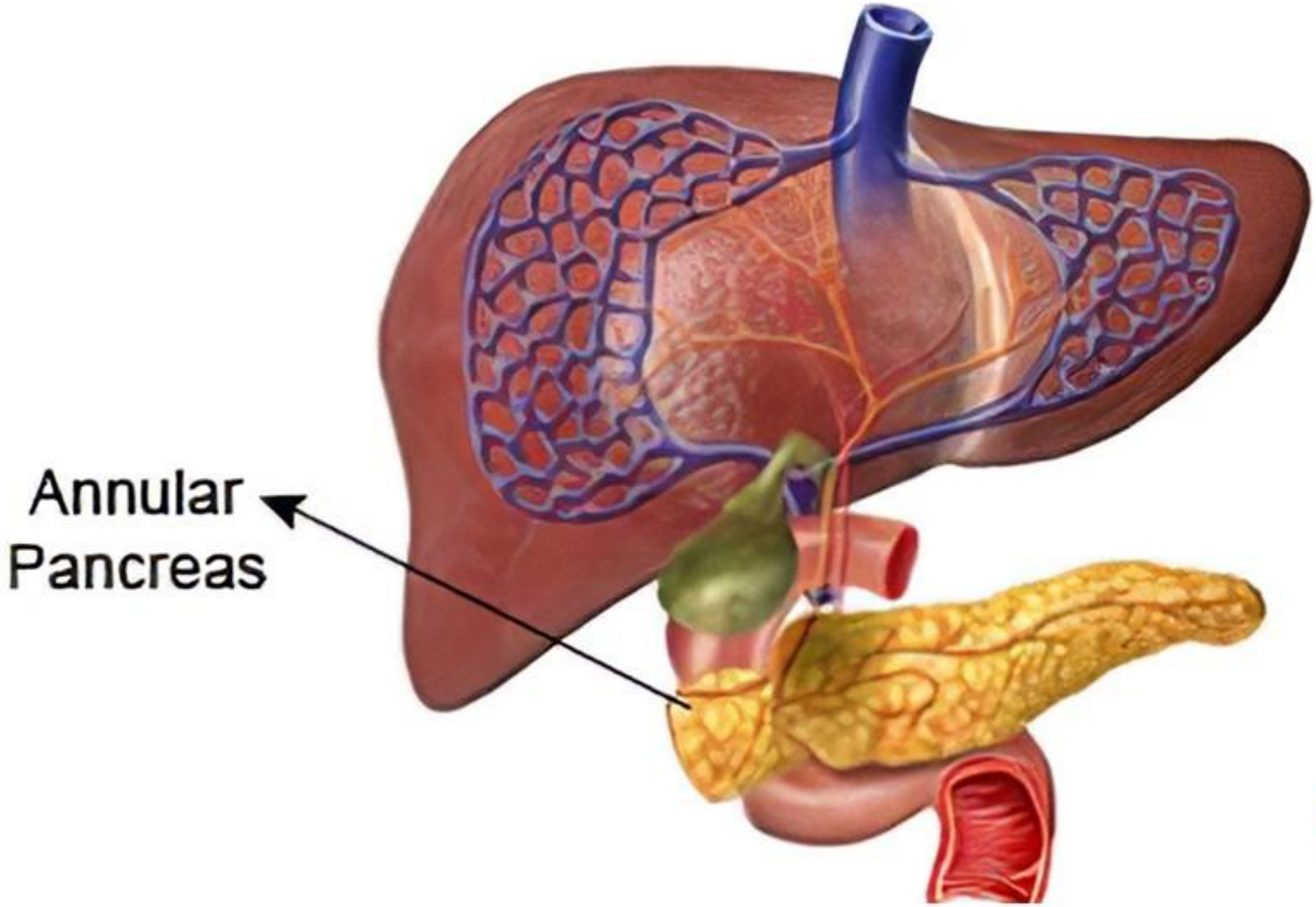

- **Annular pancreas:** a ring of pancreatic tissues surround duodenum due to **failure of rotation of the ventral pancreatic bud**.
- It may constrict the duodenum causing vomiting.

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Thank you

Questions

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