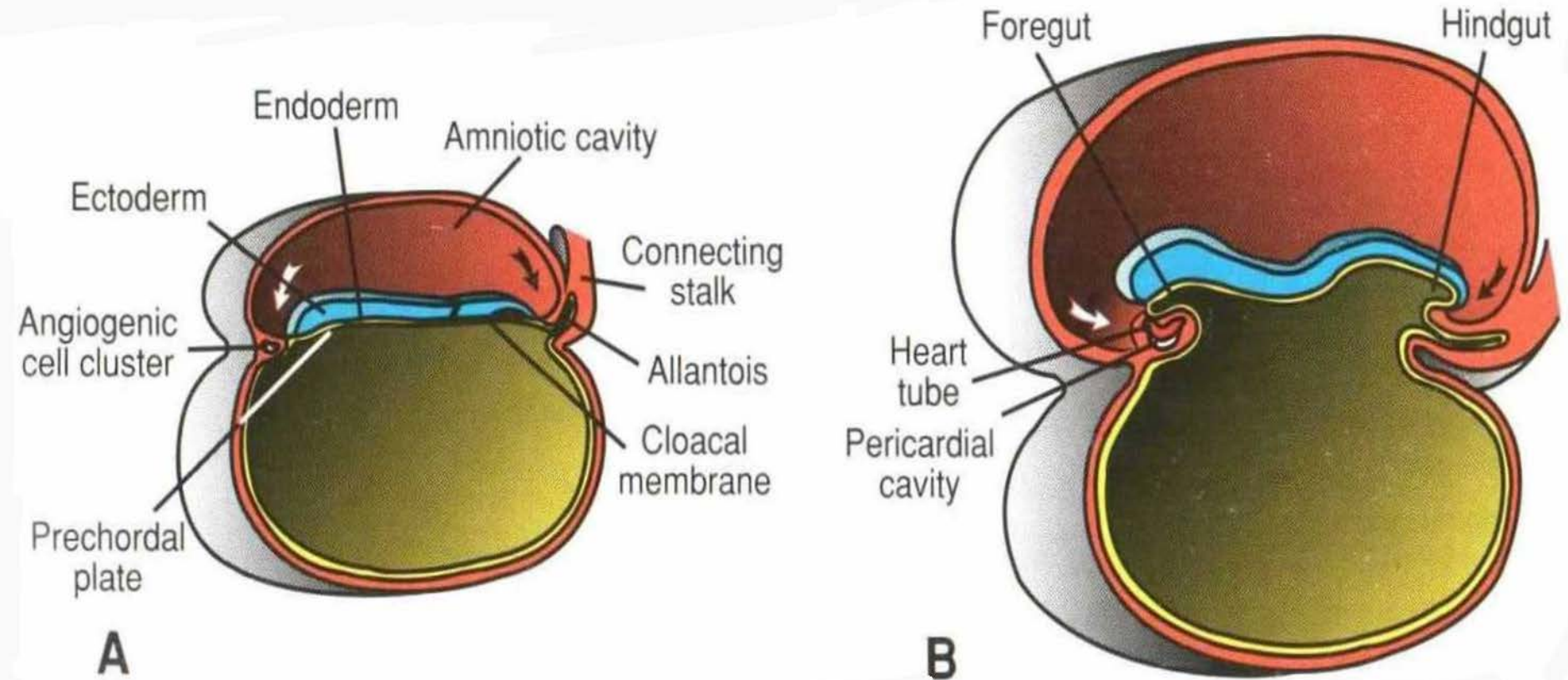


# EMBRYOLOGY:

## GASTRO-INTESTINAL TRACT

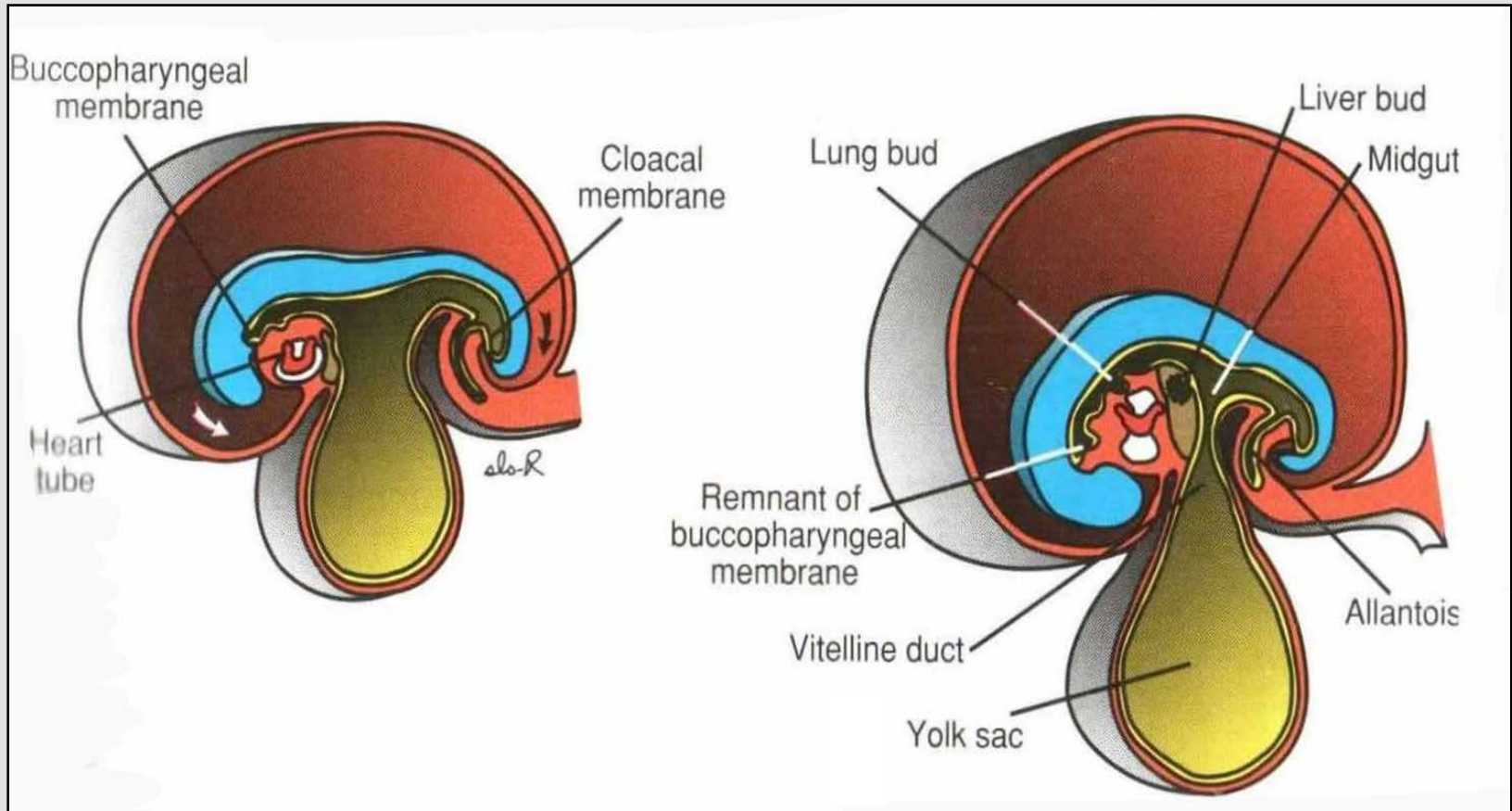


# This picture shows the lateral folding of the embryo during the embryonic formation of the primitive gut



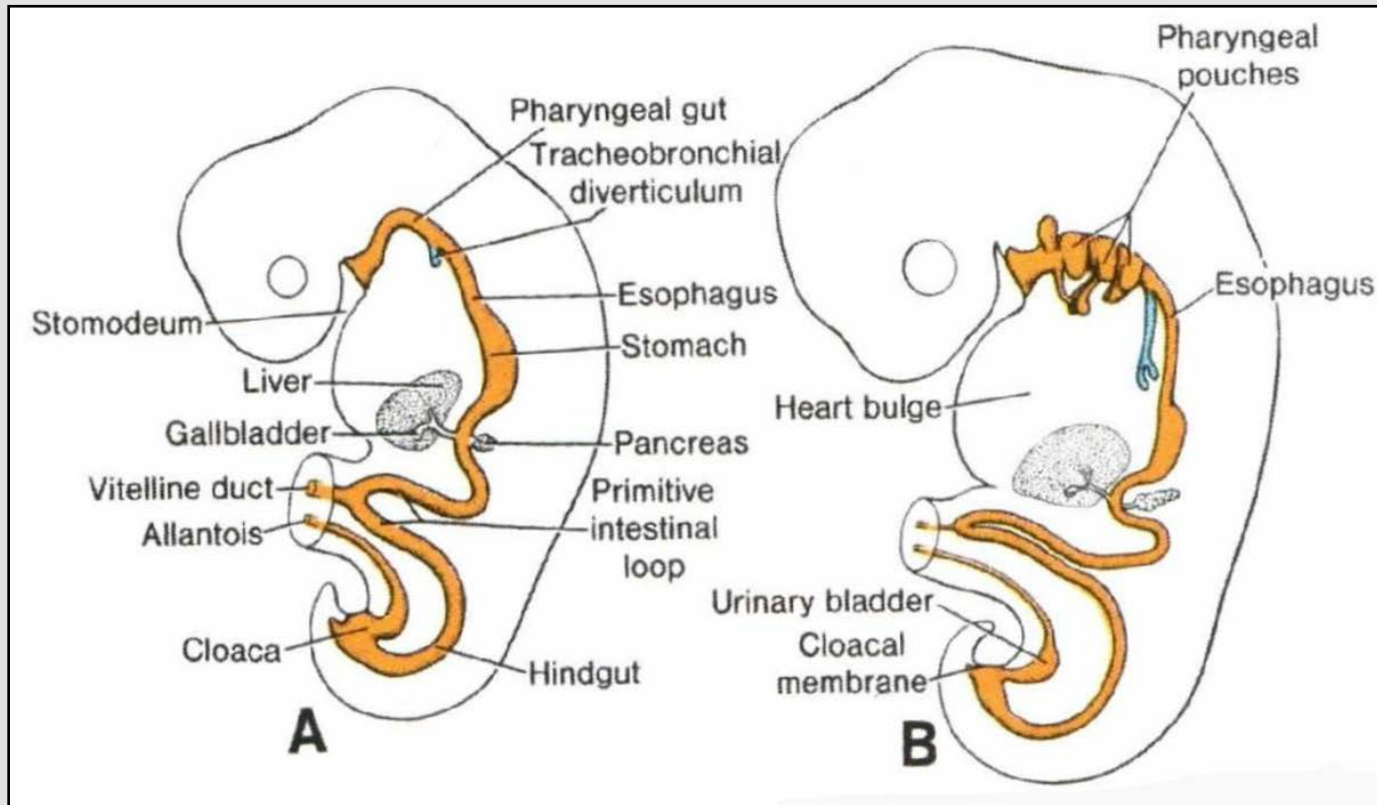
- Which germ layer result in the formation of the primitive gut?
- What is the fate of the yolk sac?

# This picture shows the lateral folding of the embryo during the embryonic formation of the primitive gut



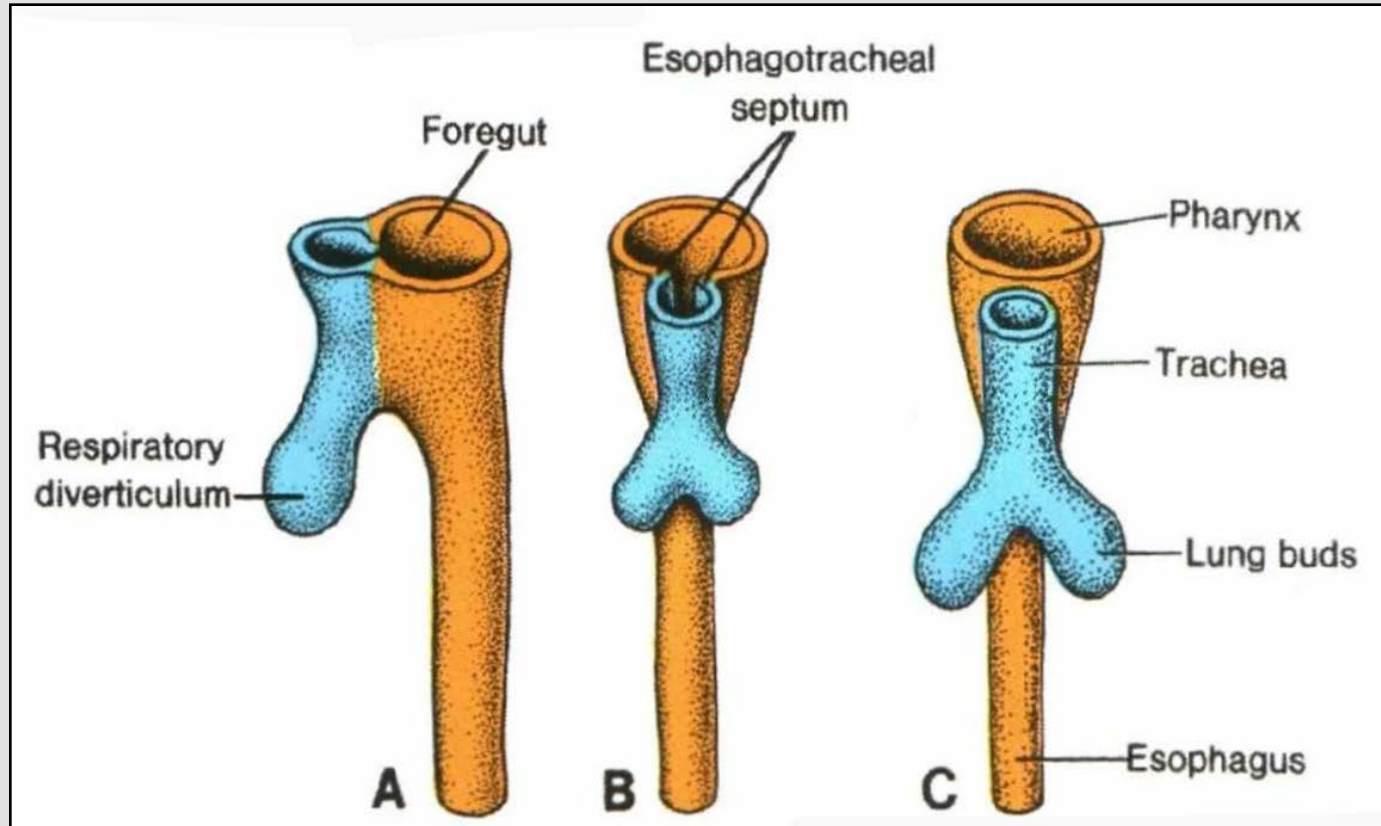
- What is the significance of the cranio-caudal folding of the embryo?
- When does this folding take place?

# This picture shows the various derivatives of the foregut

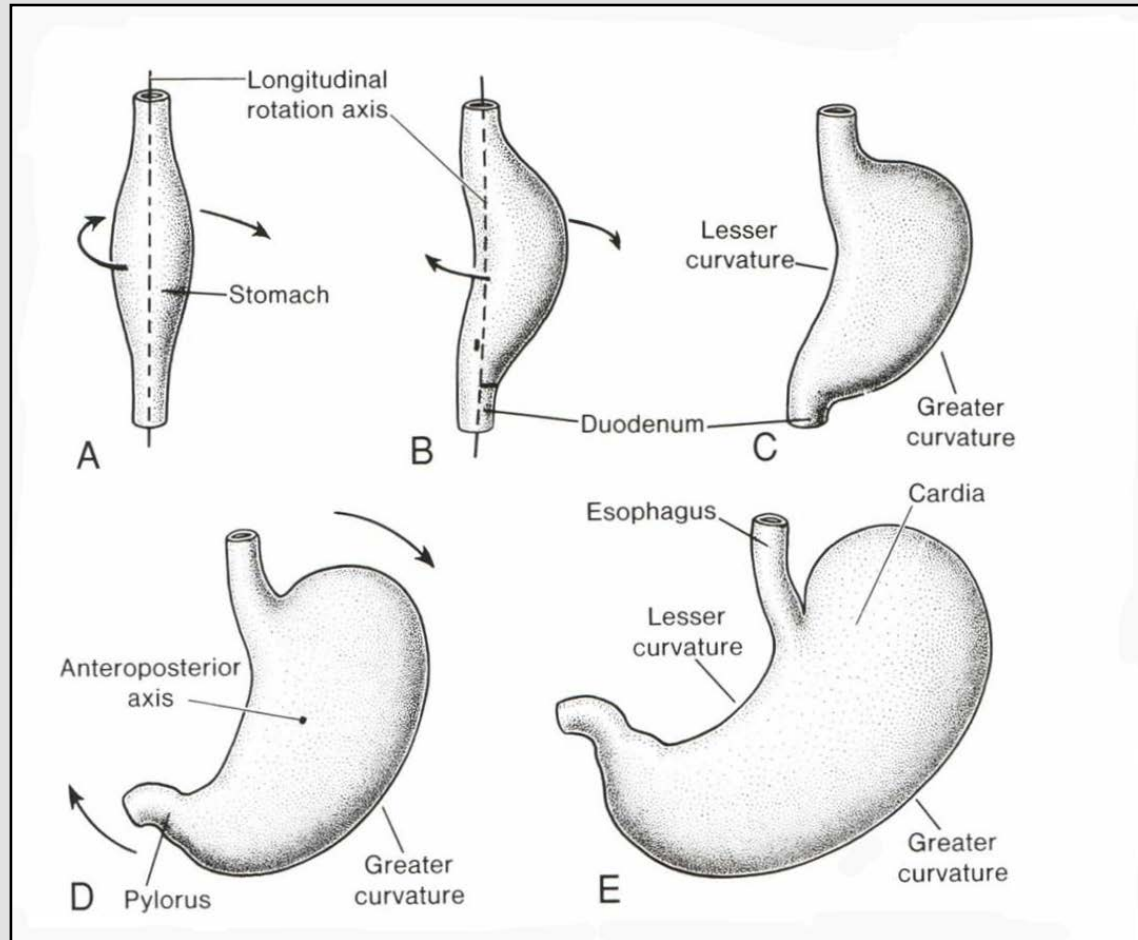


- List the three parts of the primitive gut.
- Where are their demarcations?
- List the derivatives of the foregut.

# This photomicrograph shows the development of the lungs and the oesophagus

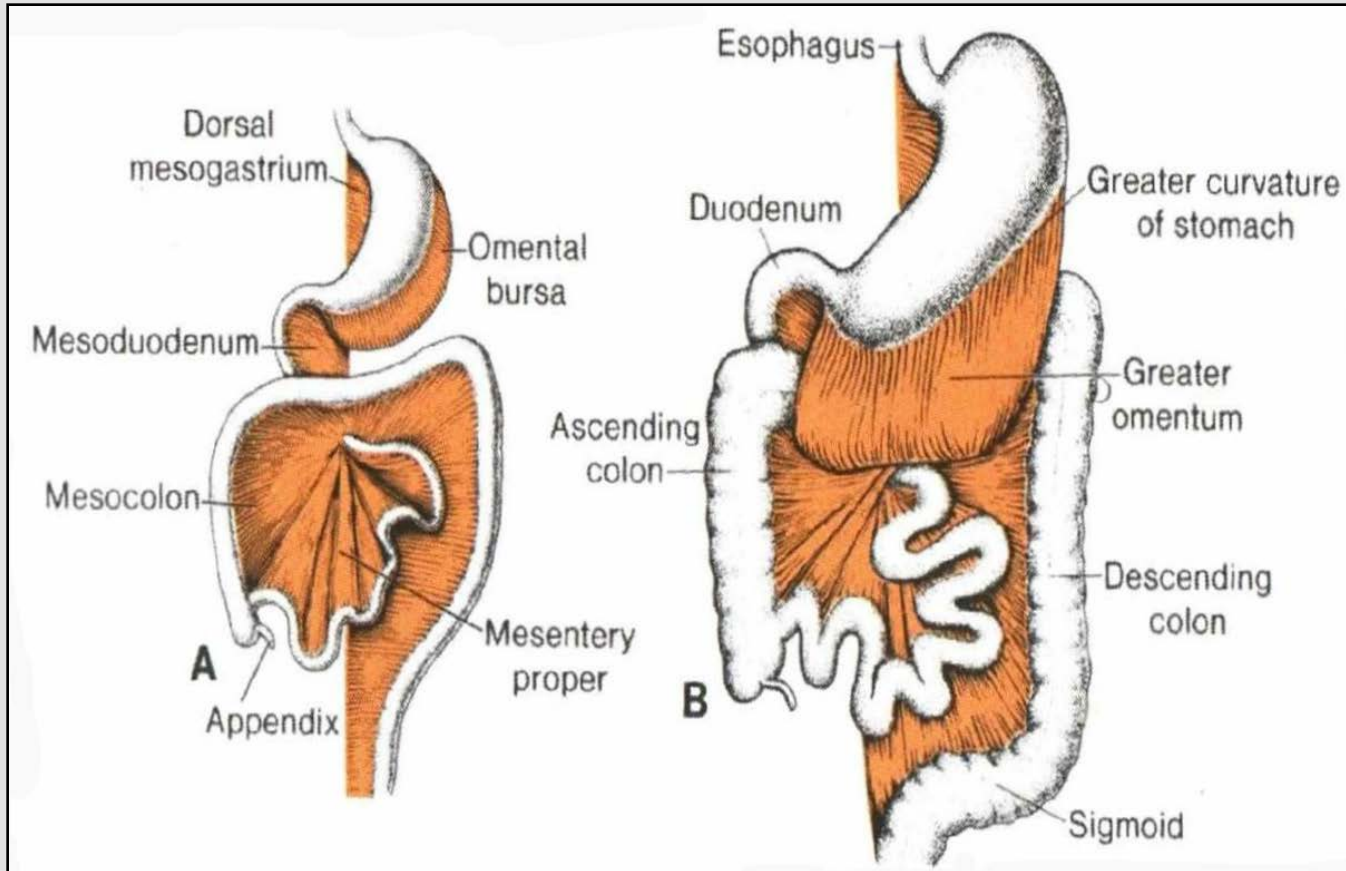


- Which septal defects are likely to occur during this development?



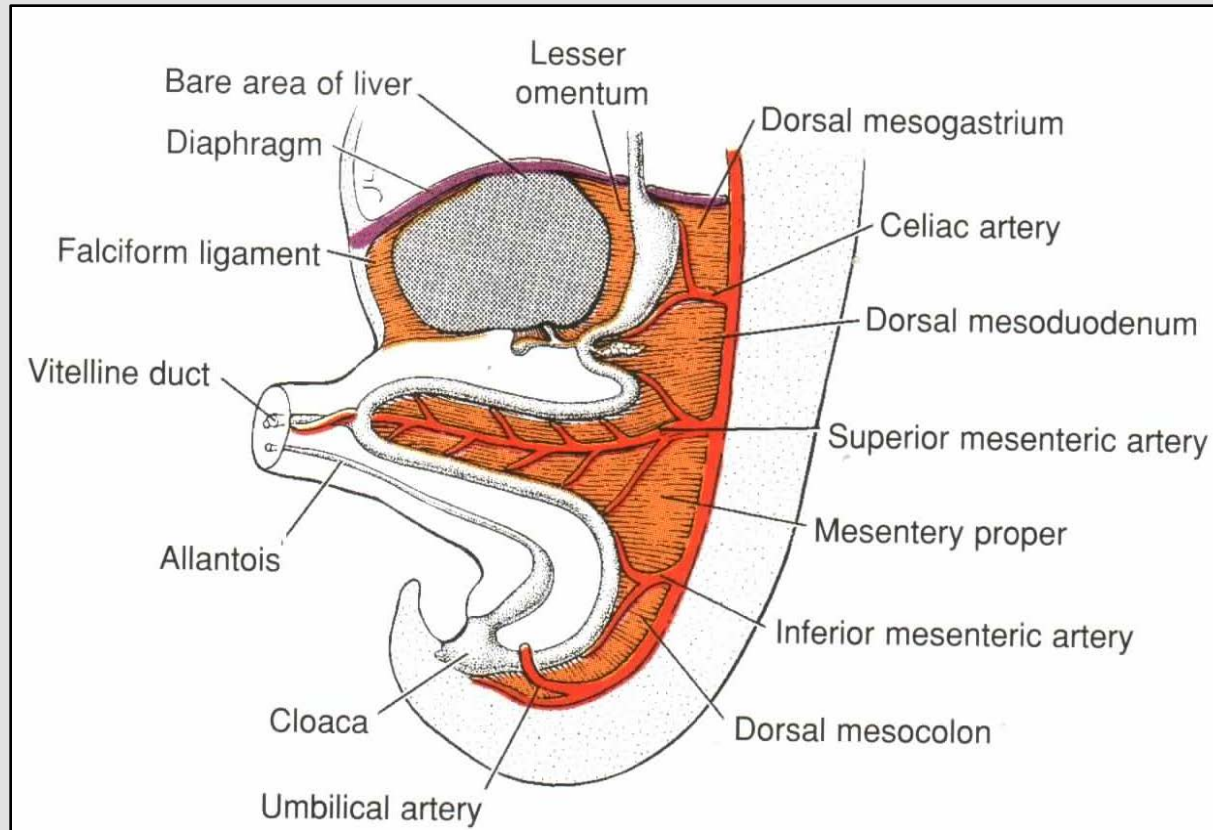
- Describe the rotation and the final position of the stomach.
- What results in the formation of the greater and lesser curvatures?

# This picture shows the derivatives of the dorsal mesentery at the end of the third month of development



- What is a mesentery?
- What leads to the formation of the omental bursa and the greater omentum?

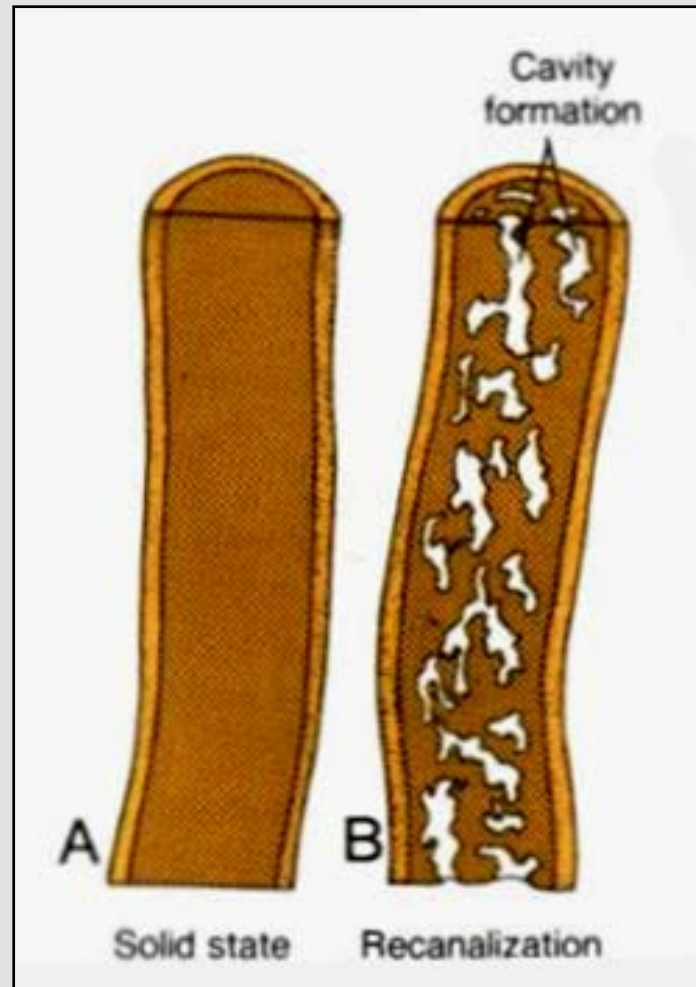
# This picture show the embryonic formation of the liver



- How do the lesser omentum and the falciform ligament form?
- How does the liver form?

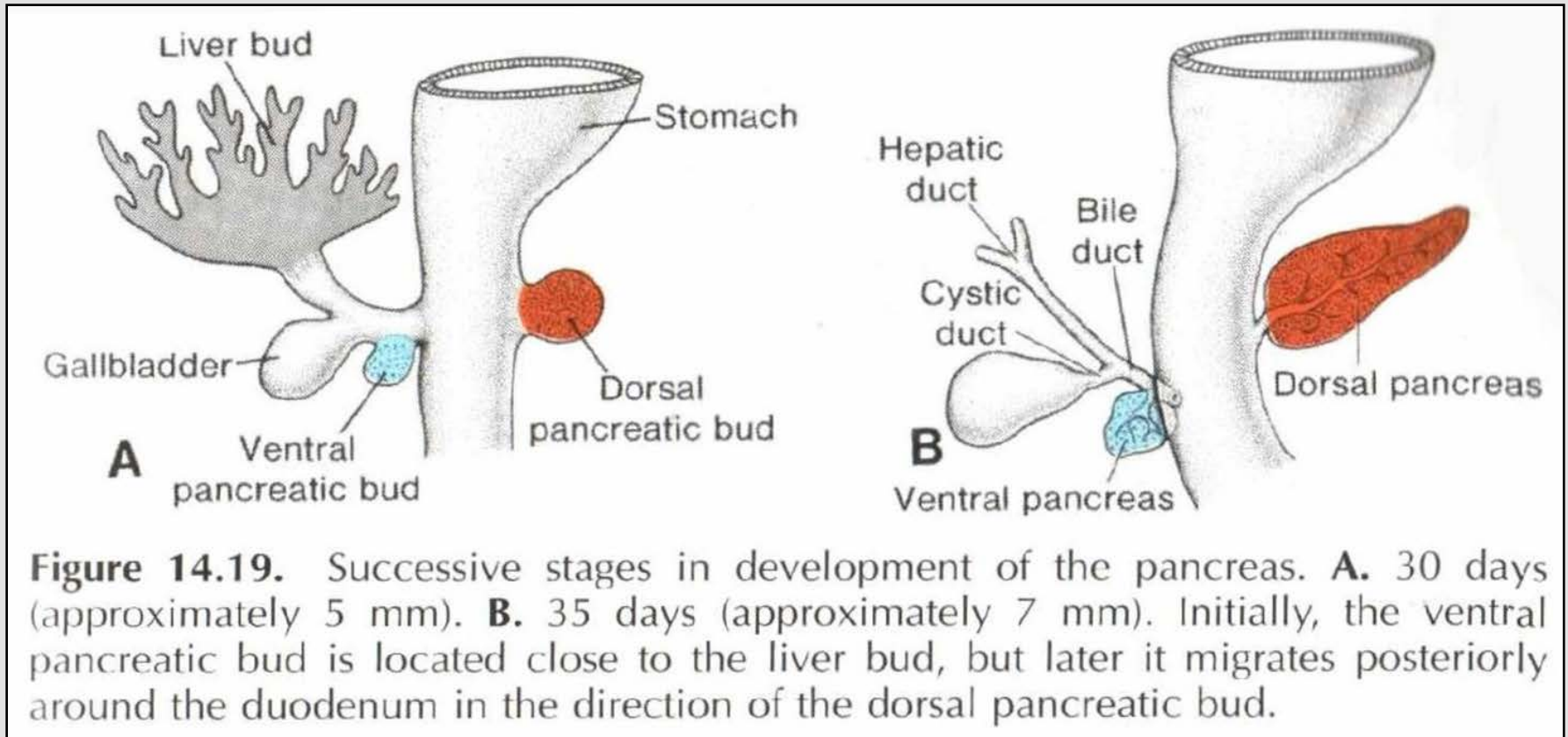


This picture show the embryonic formation of the duodenum

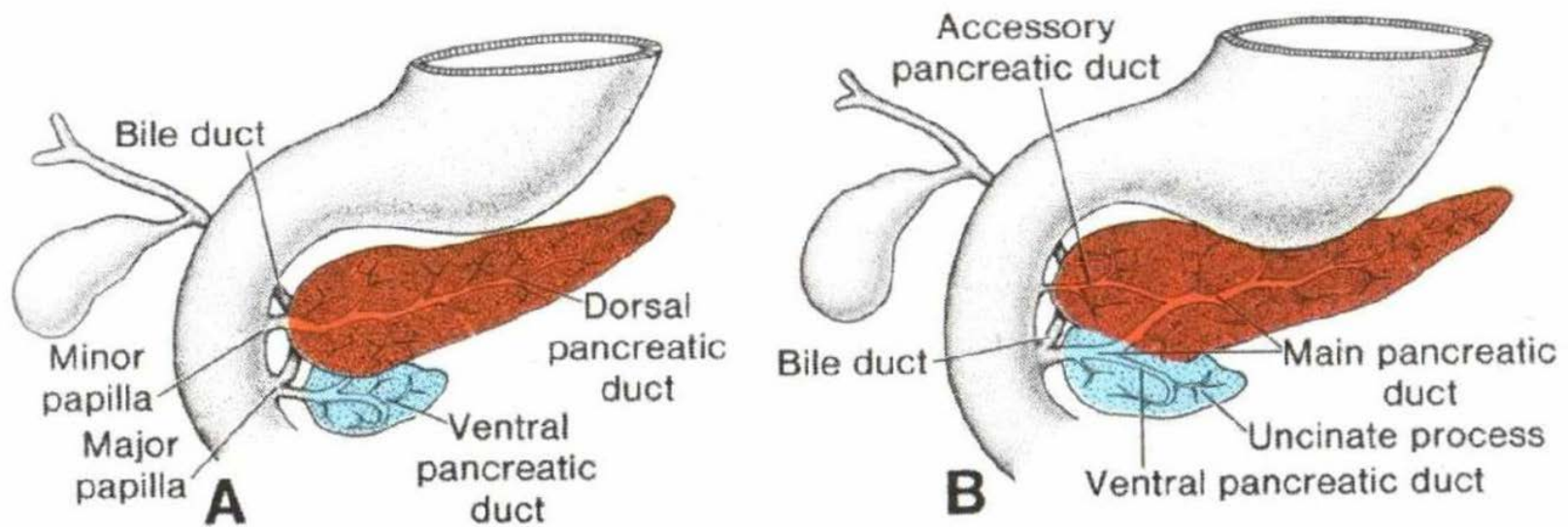


- Where is the duodenum derived from?
- Where is its blood supply derived from?

# This picture show the embryonic formation of the pancreas

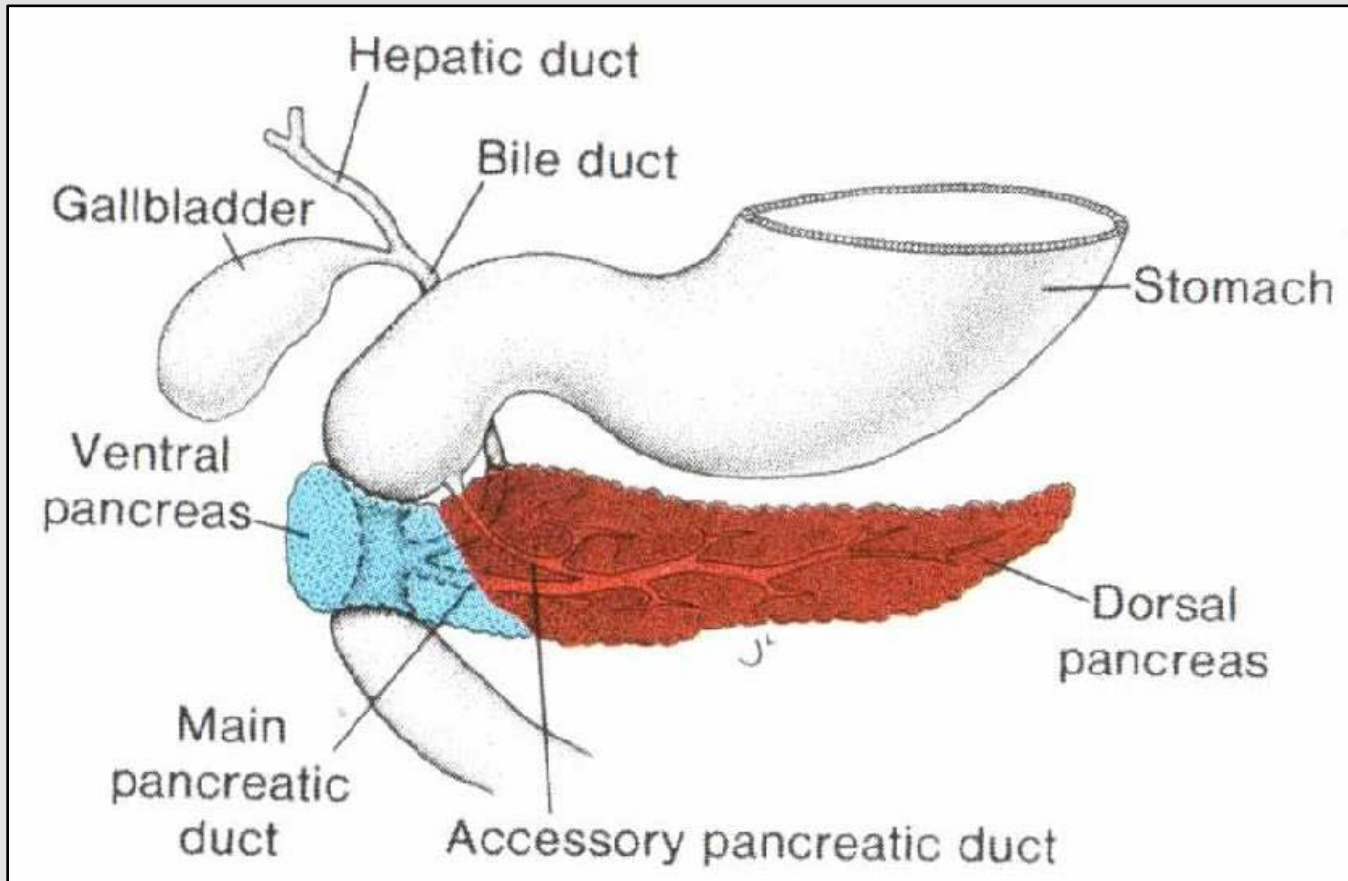


- Where are the ventral and dorsal pancreatic buds derived from?
- Which structures result in the formation of the main pancreatic duct?



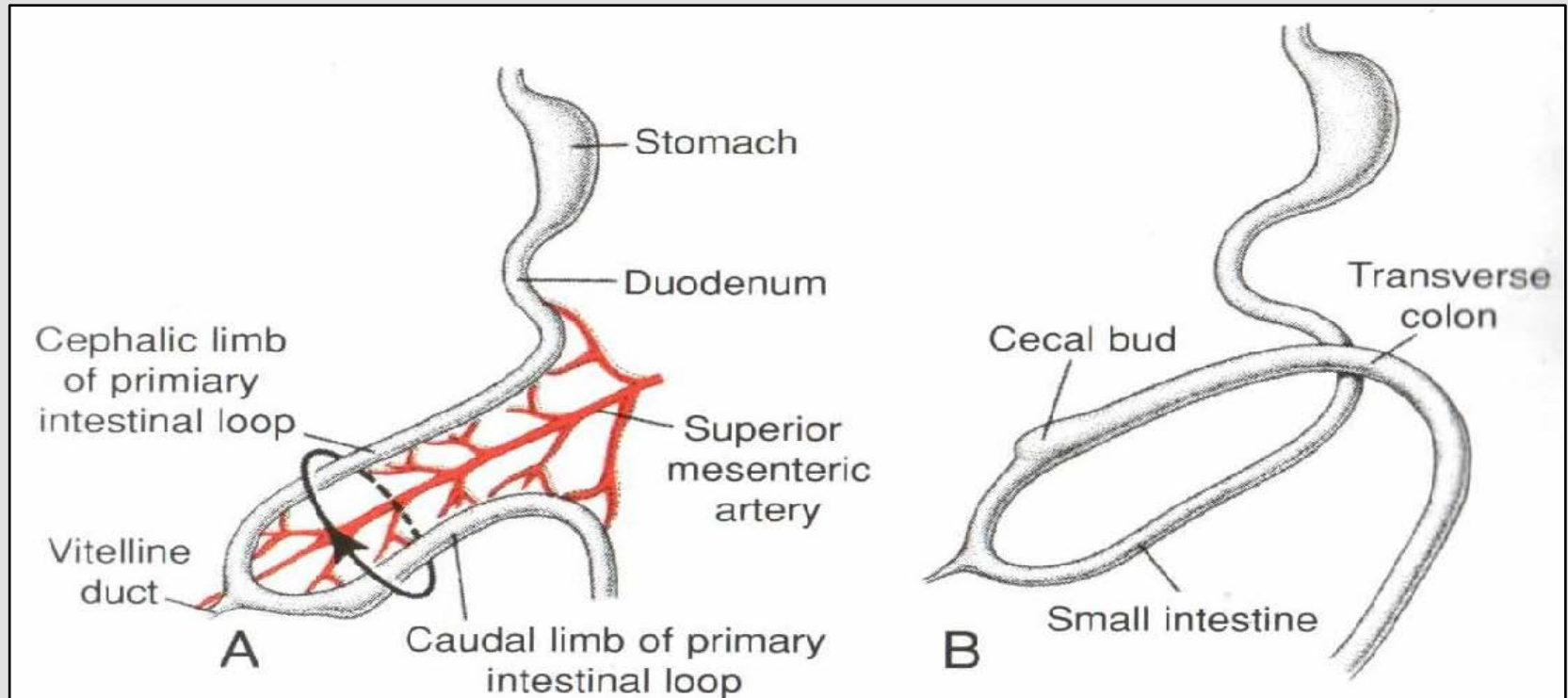
**Figure 14.20.** **A.** Pancreas during the 6th week of development. The ventral pancreatic bud is in close contact with the dorsal pancreatic bud. **B.** Drawing showing fusion of the pancreatic ducts. The main pancreatic duct enters the duodenum in combination with the bile duct at the major papilla. The accessory pancreatic duct (when present) enters the duodenum at the minor papilla.

- What causes the ventral pancreatic duct to rotate towards the dorsal pancreatic duct?
- Which structure results in the formation of the uncinus process?



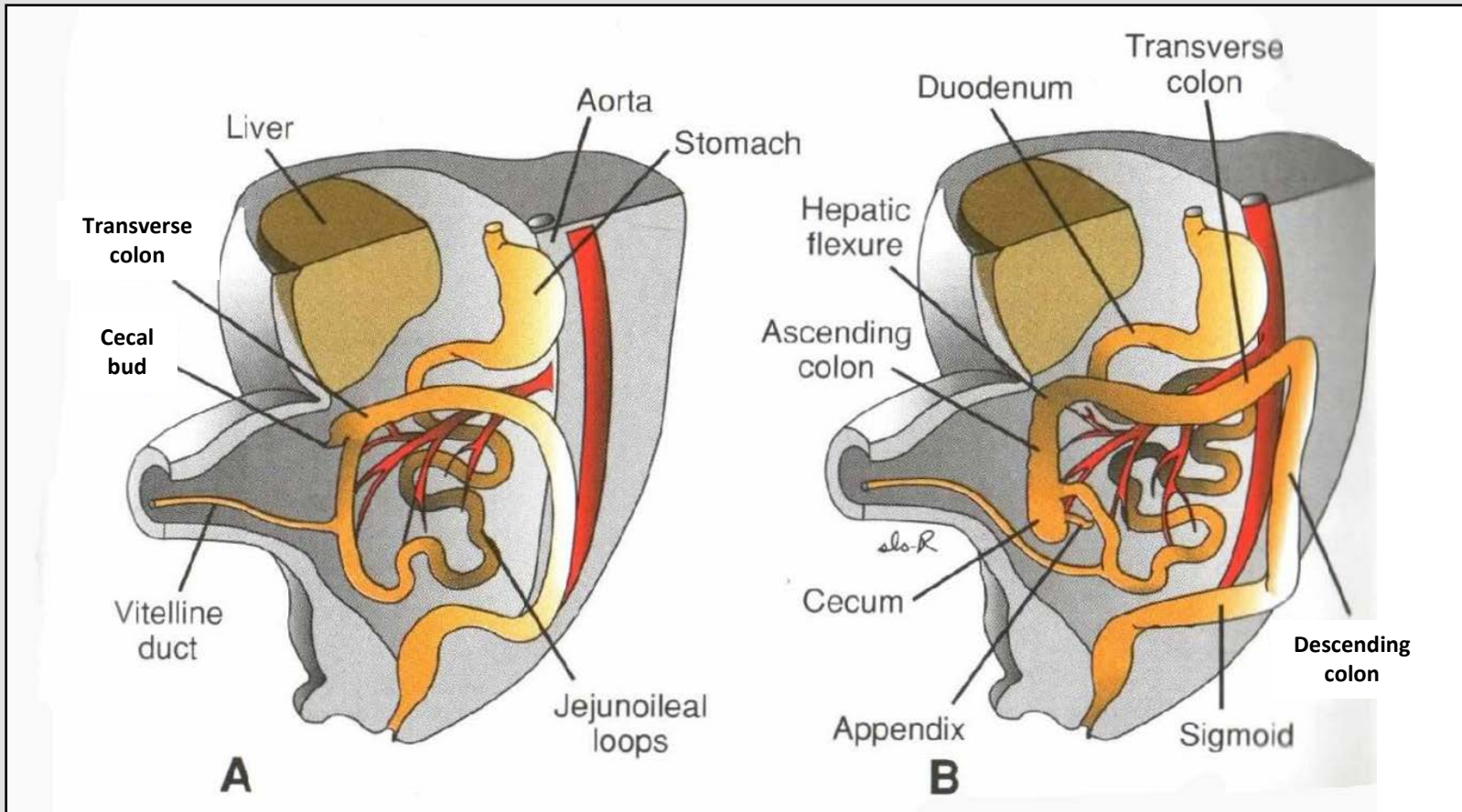
- Identify the abnormality shown in this picture.
- What is the functional consequence of this abnormality?

# This picture show the embryonic formation of the midgut loop

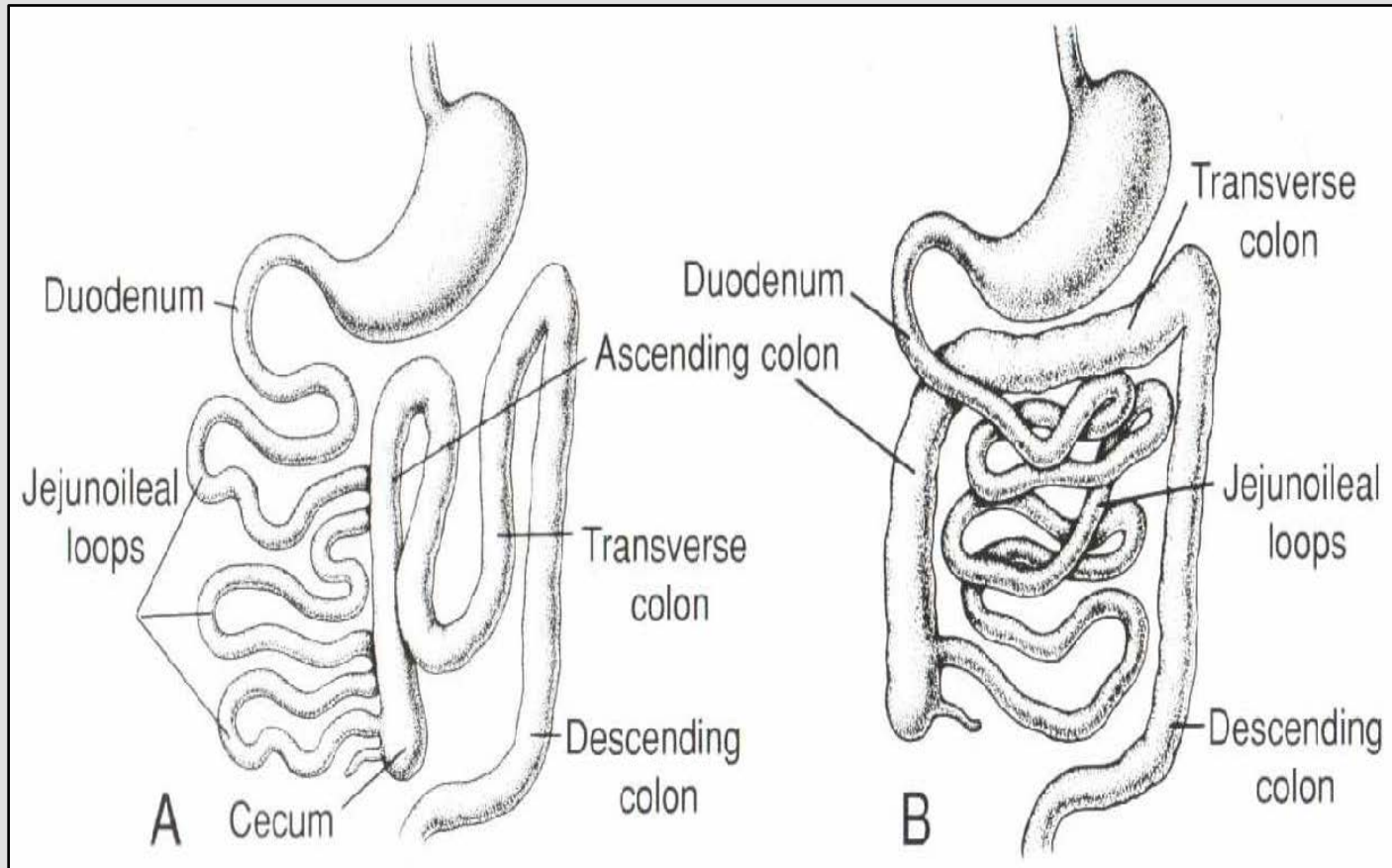


- What is a primary intestinal loop?
- What are the derivatives of the midgut?
- What is the blood supply of the midgut?





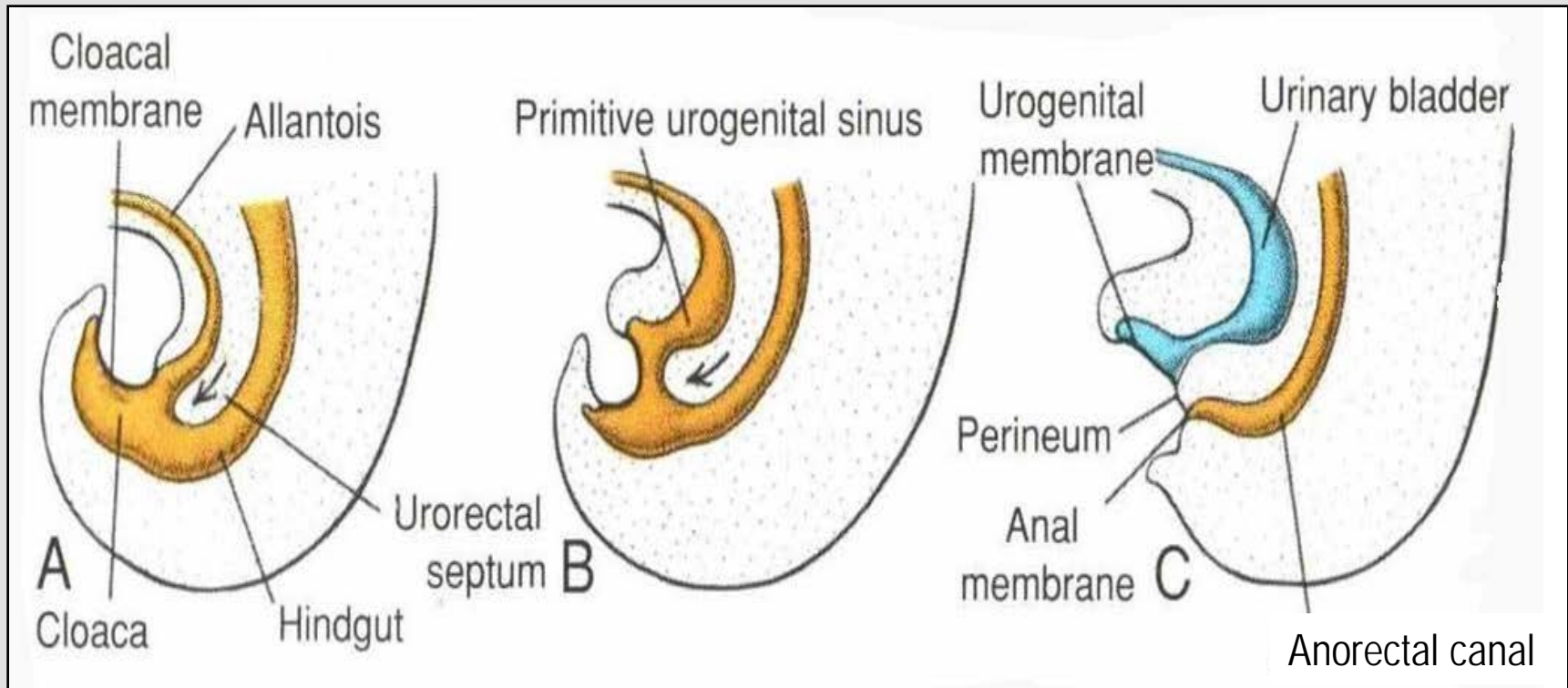
- Describe the rotation of the midgut loop.



- Identify the abnormalities labelled A and B.
- What are the consequences of these abnormalities?



## This picture show the embryonic formation of the hindgut



- What are the derivatives of the hindgut?
- What are the possible abnormalities associated with the embryonic development of the hindgut?

## Short essay questions

- Describe the embryonic development of the stomach. (8 marks)
- Describe the embryonic formation of the midgut. Include in your answer its derivatives. (10 marks)
- Describe the embryonic formation of the pancreas. (8 marks)

## Multiple choice questions

- **The following structures/organs are the derivatives of the foregut**
  - a) The entire duodenum.
  - b) The esophagus.
  - c) The caecum.
  - d) The ascending colon.
  - e) The stomach.
  
- **The stomach**
  - a) Undergoes umbilical herniation.
  - b) Rotates in an anti-clockwise direction when viewed ventrally.
  - c) Is innervated by the vagus nerve.
  - d) Appears in the fourth week of development.
  - e) Is derived from mesoderm.