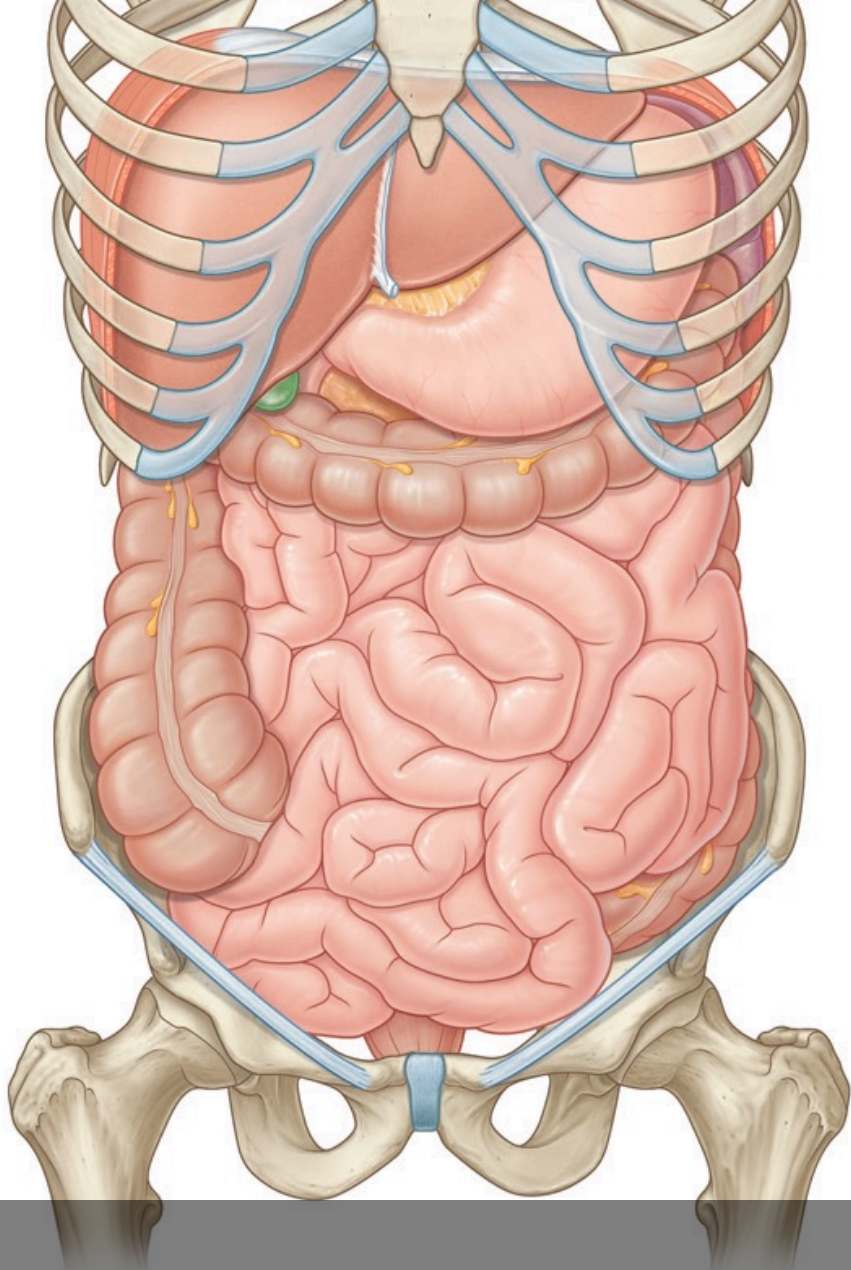


ABDOMEN 2

Prof. MUDr. Jiří Ferda, Ph.D.



♦ **Oesophagus - pars abdominalis**

♦ **Ventriculus**

- ♦ Cardia
- ♦ Corpus
- ♦ Fundus
- ♦ Pylorus

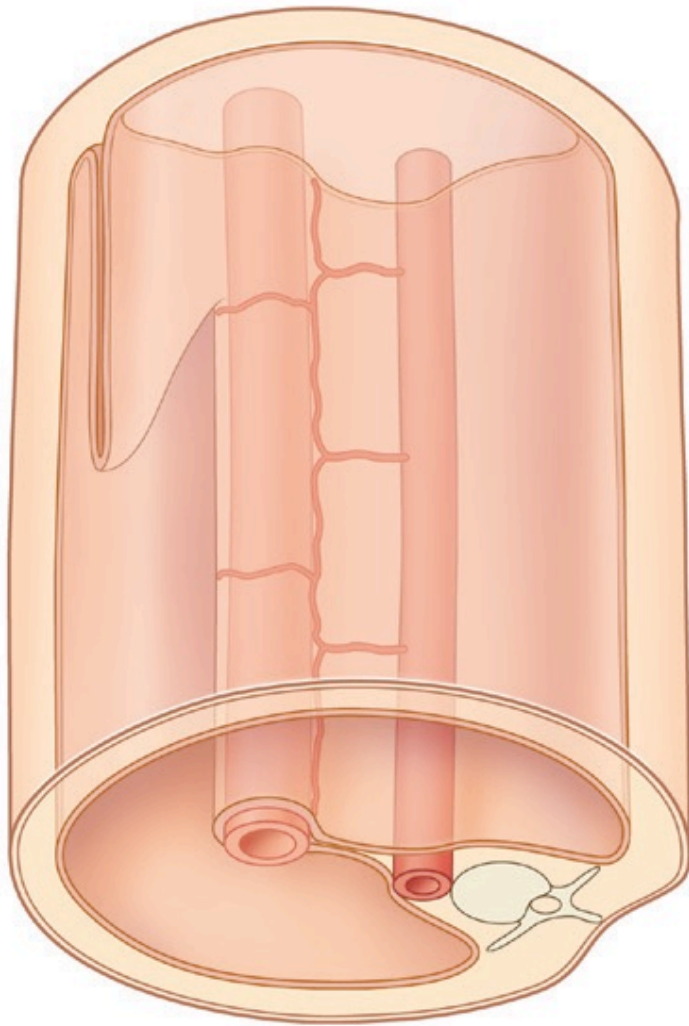
♦ **Intestinum tenue 3 - 5 m**

- ♦ Duodenum
- ♦ Jejunum
- ♦ Ileum

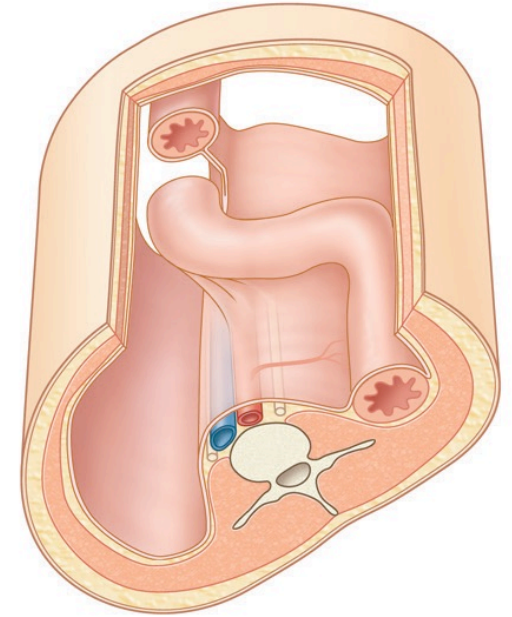
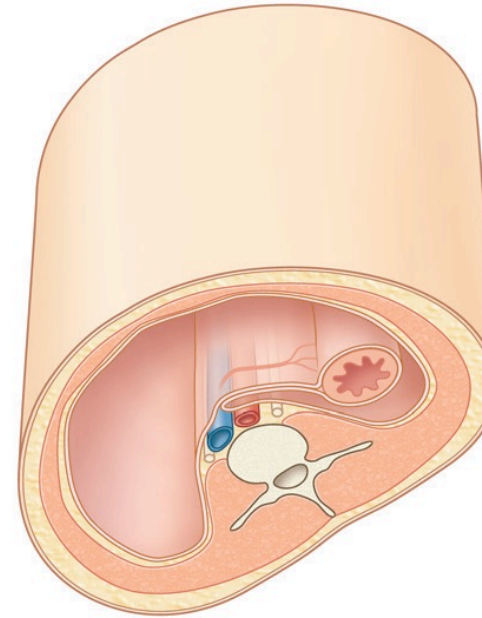
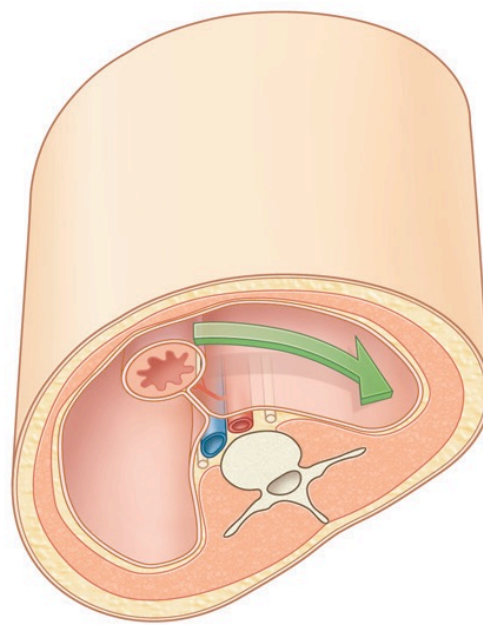
♦ **Intestinum crassum 1,5 m**

- ♦ Caecum, appendix vermicularis
- ♦ Colon ascendes
- ♦ Colon transversum
- ♦ Colon descendens
- ♦ Colon sigmoideum, rectum

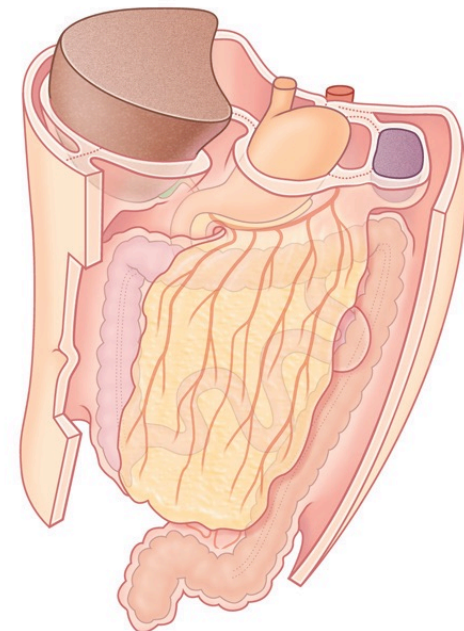
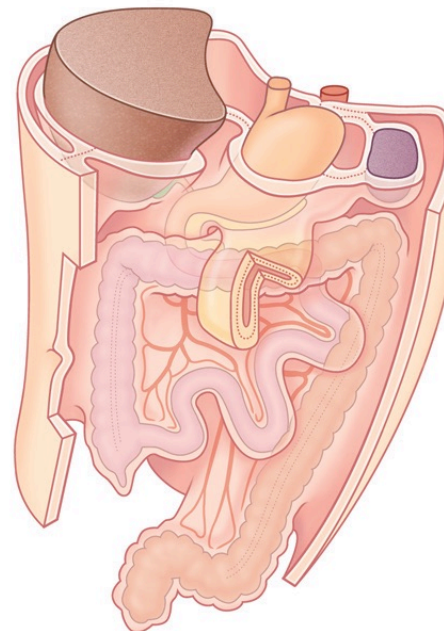
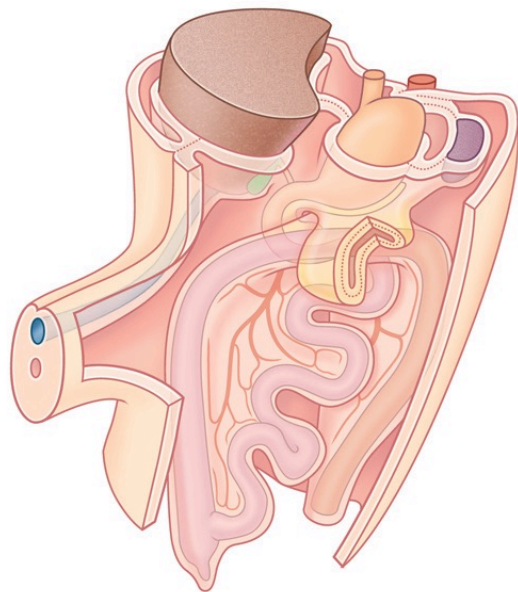
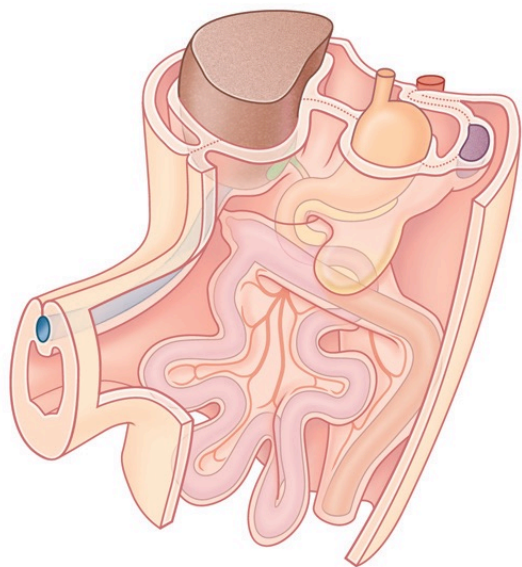
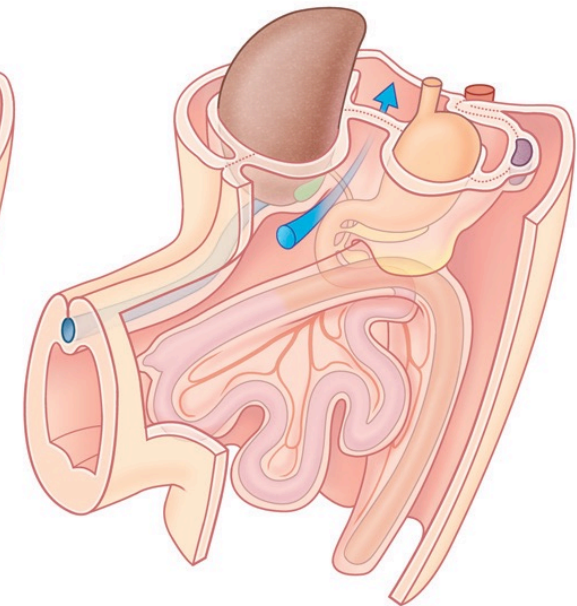
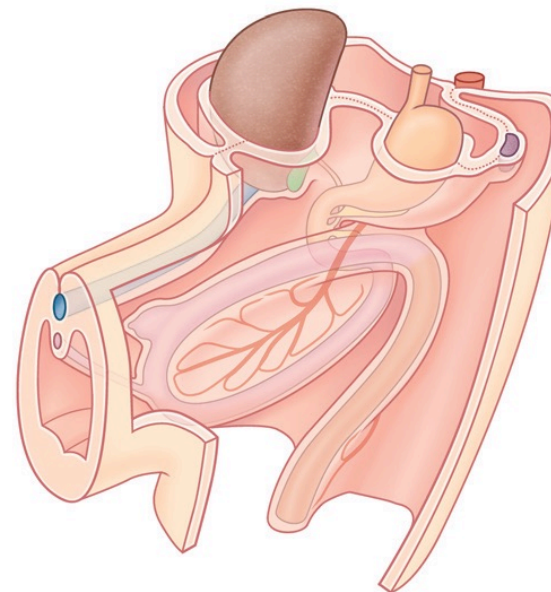
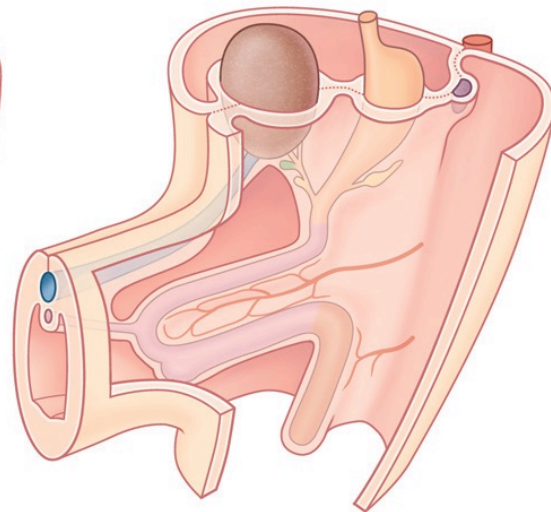
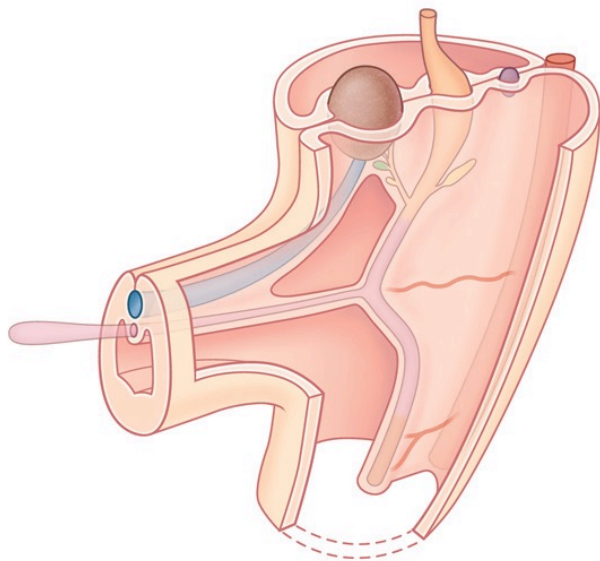
VENTRICULUS, INTESTINUM

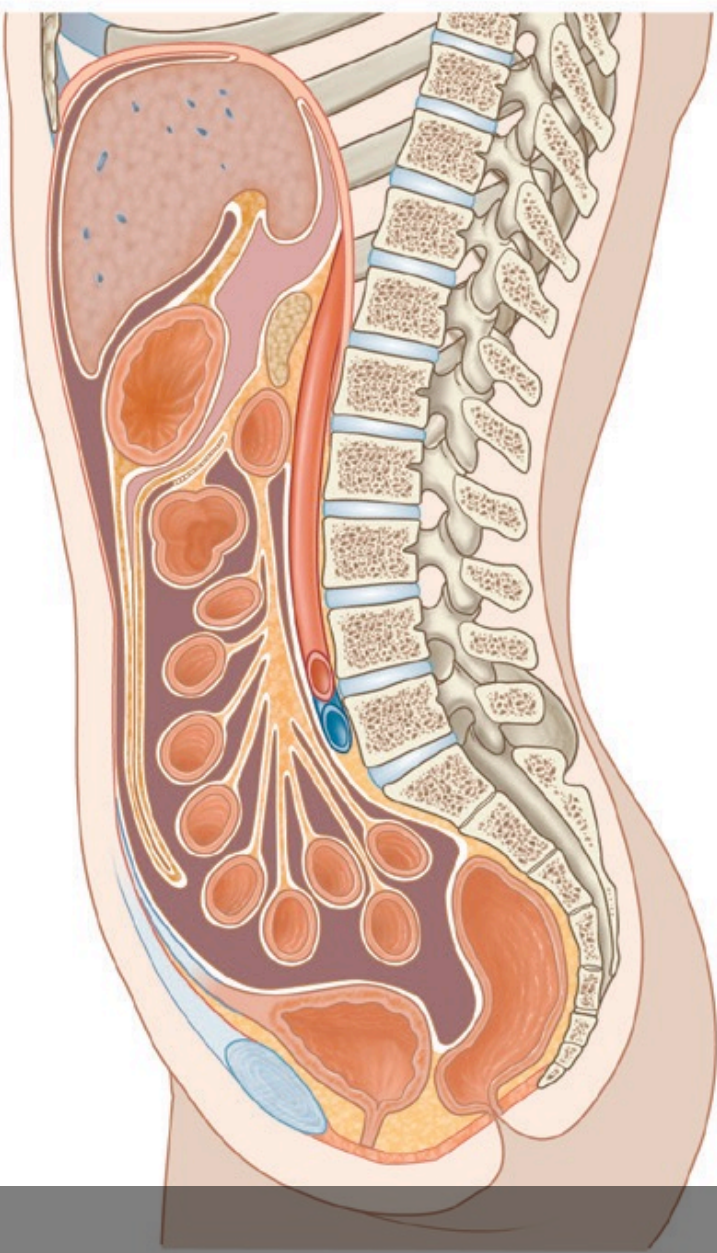


- Hanging of the bowel
- Peritonea duplicature
- Mesenterium ventrale
- Mesenterium dorsale

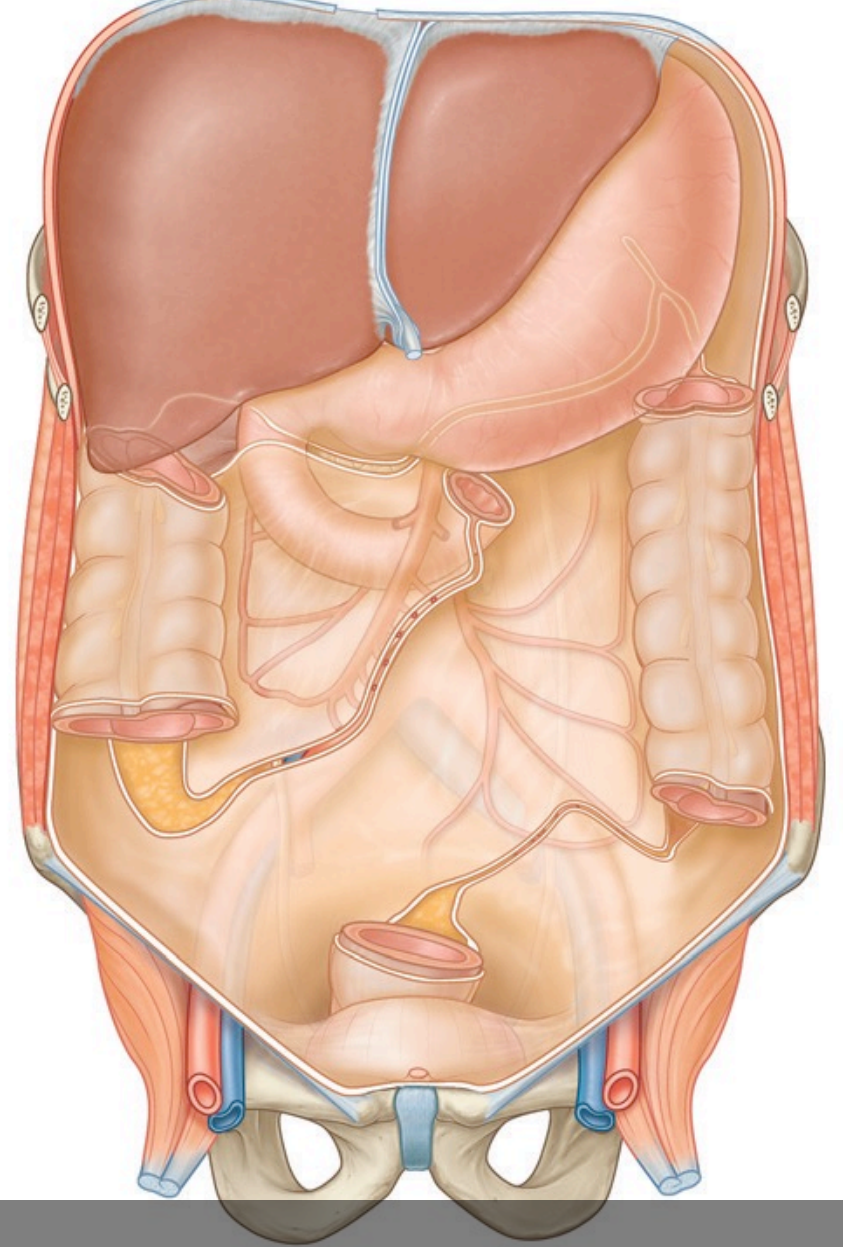
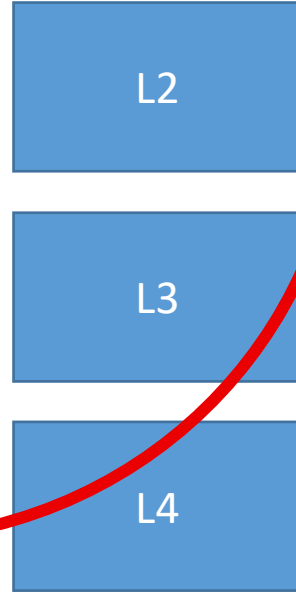
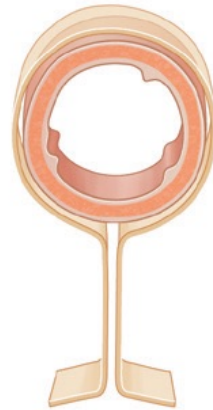


MESENTERIUM



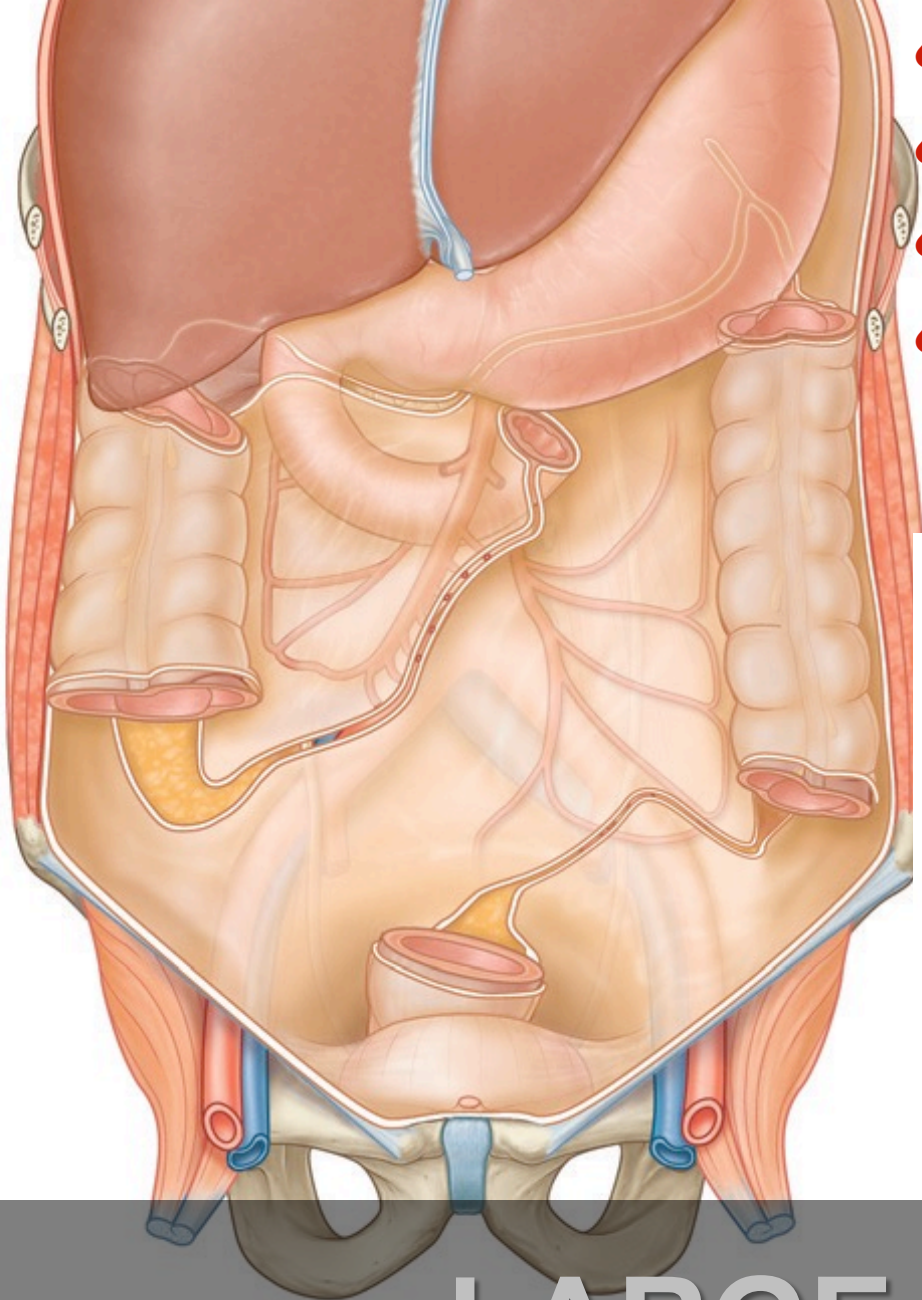


- **Radix mesenterii**
- **Left margin of L2**
- **Crossing L3**
- **Right margin of L4**

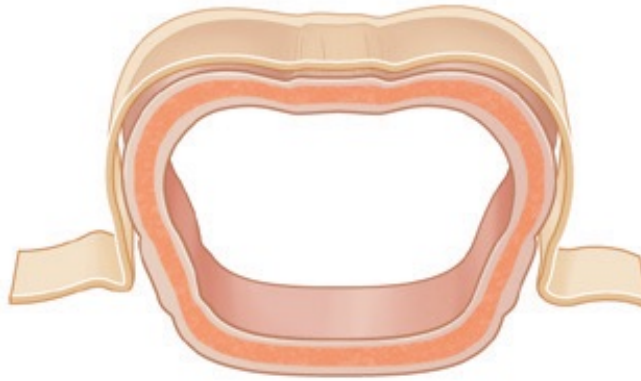


SMALL BOWEL MESENTERY

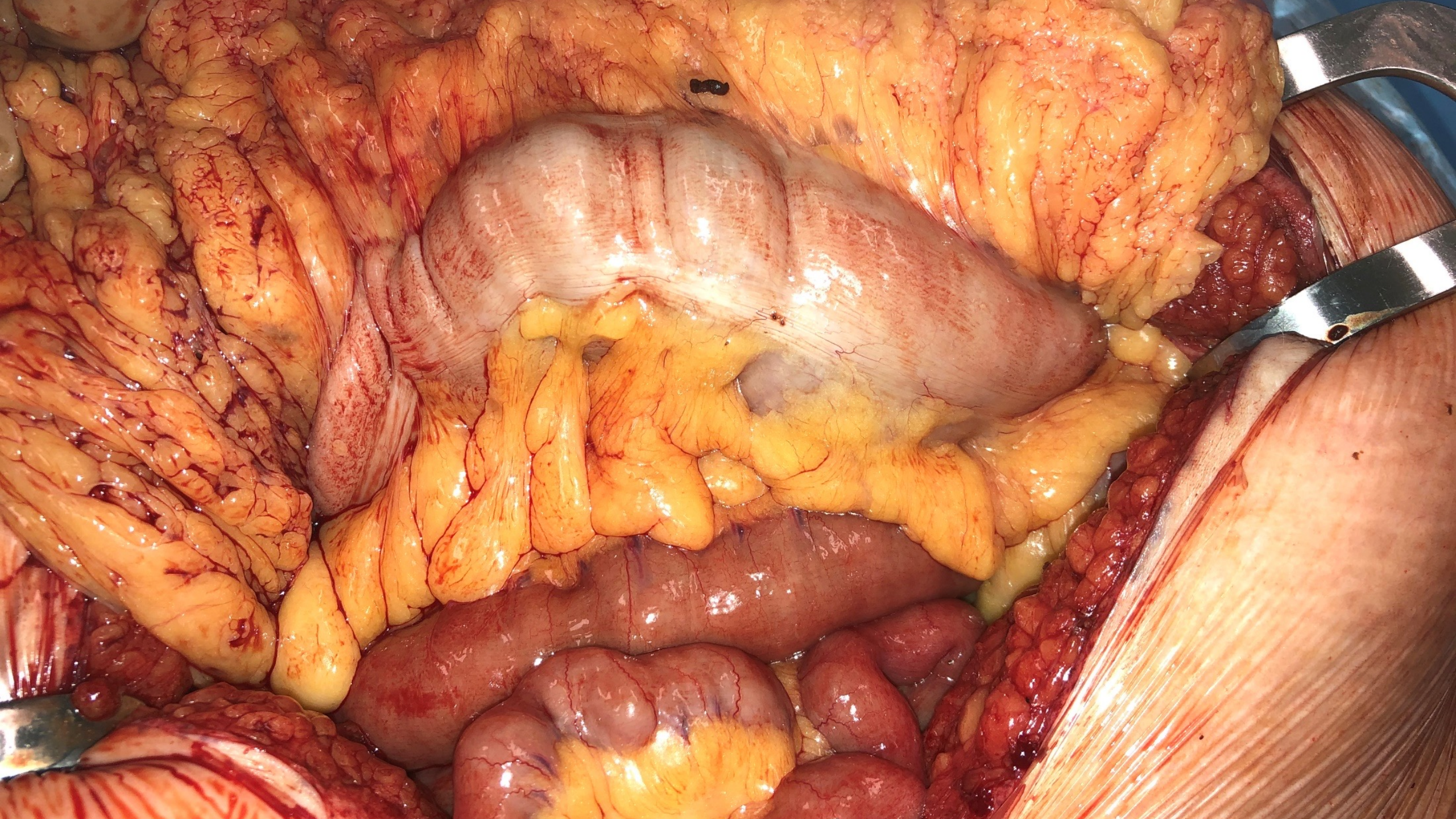


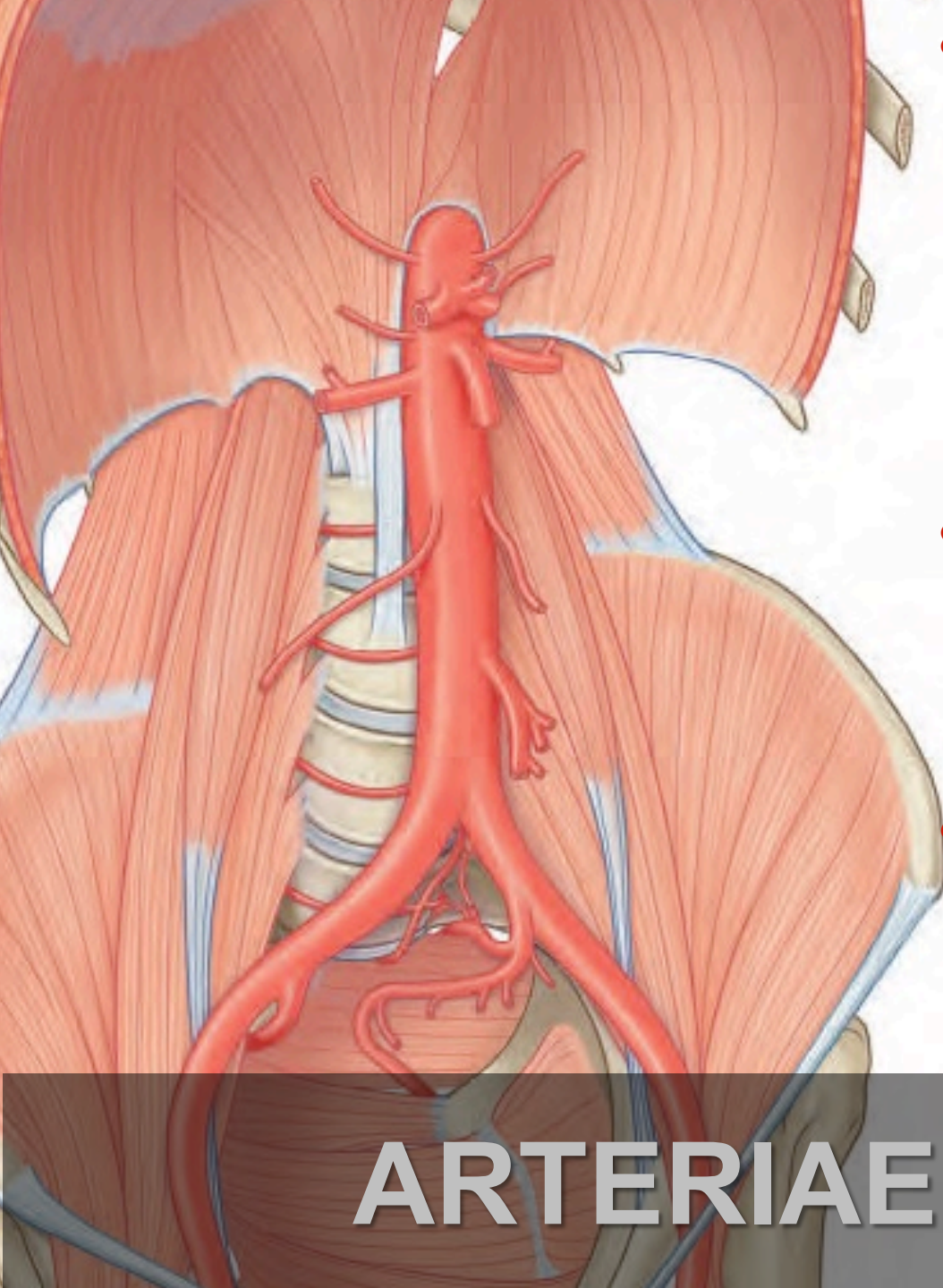


- Mesenterium appedicis
- Mesocaecum
- Mesocolon transversum
- Mesosigmoideum



LARGE BOWEL HANGING





♦ Truncus coeliacus

♦ A. gastrica sinistra

♦ A. hepatica communis

♦ A. gastrica dextra

♦ A. pancreatoduodenalis

♦ A. gastromentalis dextra

♦ A. lienalis

♦ A. gastromentalis sinistra

♦ A. mesenterica superior

♦ Rami jejunales et. ileales

♦ A. ileocolica

♦ A. colica dextra

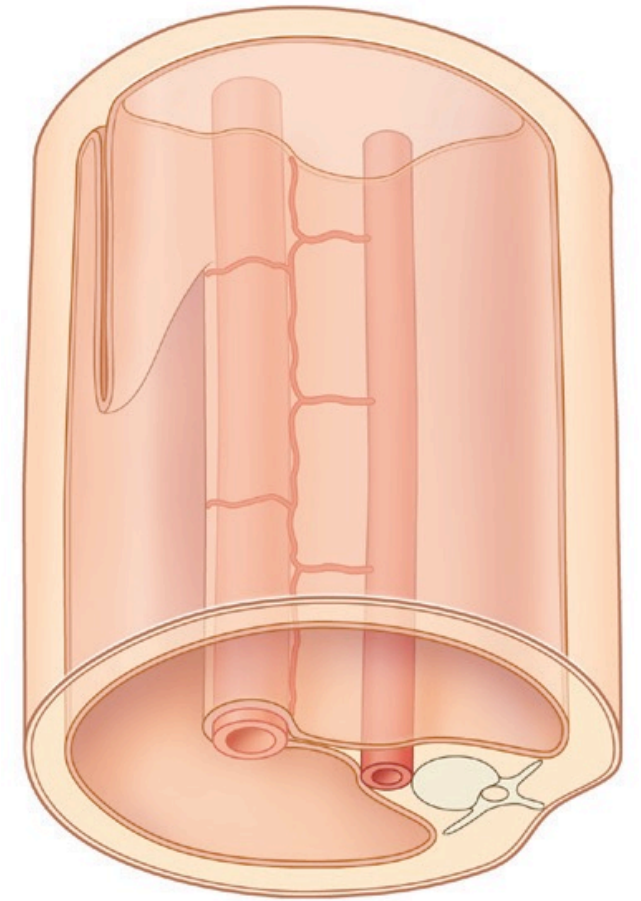
♦ A. colica media

♦ A. mesenterica inferior

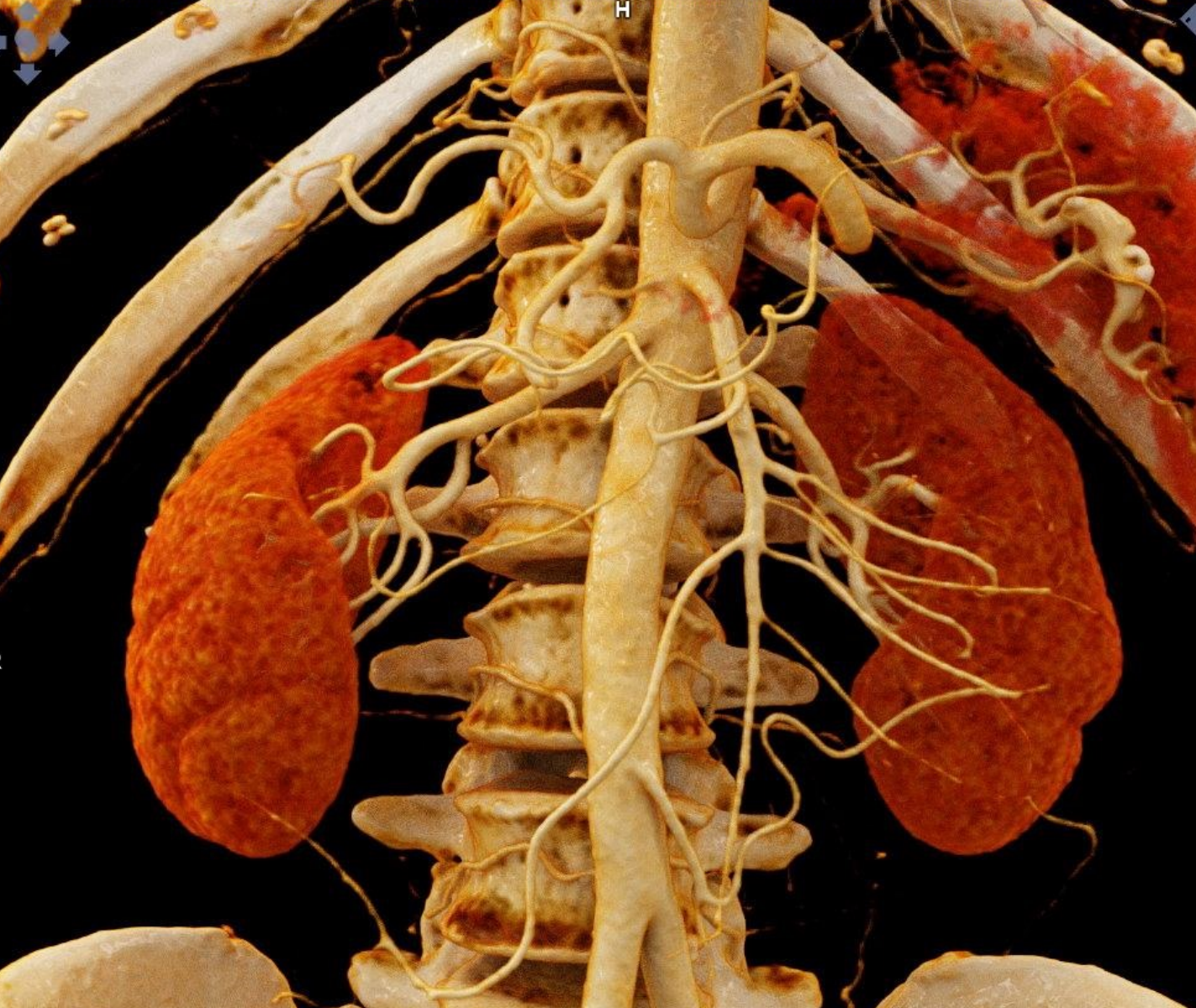
♦ A. colica sinistra

♦ A. sigmoidea

♦ A. rectalis superior



ARTERIAE MESENTERIALES



ARTERIAE MESENTERIALES

♦ Truncus coeliacus

♦ A. gastrica sinistra

♦ A. hepatica communis

♦ A. gastrica dextra

♦ A. pancreatoduodenalis

♦ A. gastromentalis dextra

♦ A. lienalis

♦ A. gastromentalis sinistra

♦ A. mesenterica superior

♦ Rami jejunaes et. ileales

♦ A. ileocolica

♦ A. colica dextra

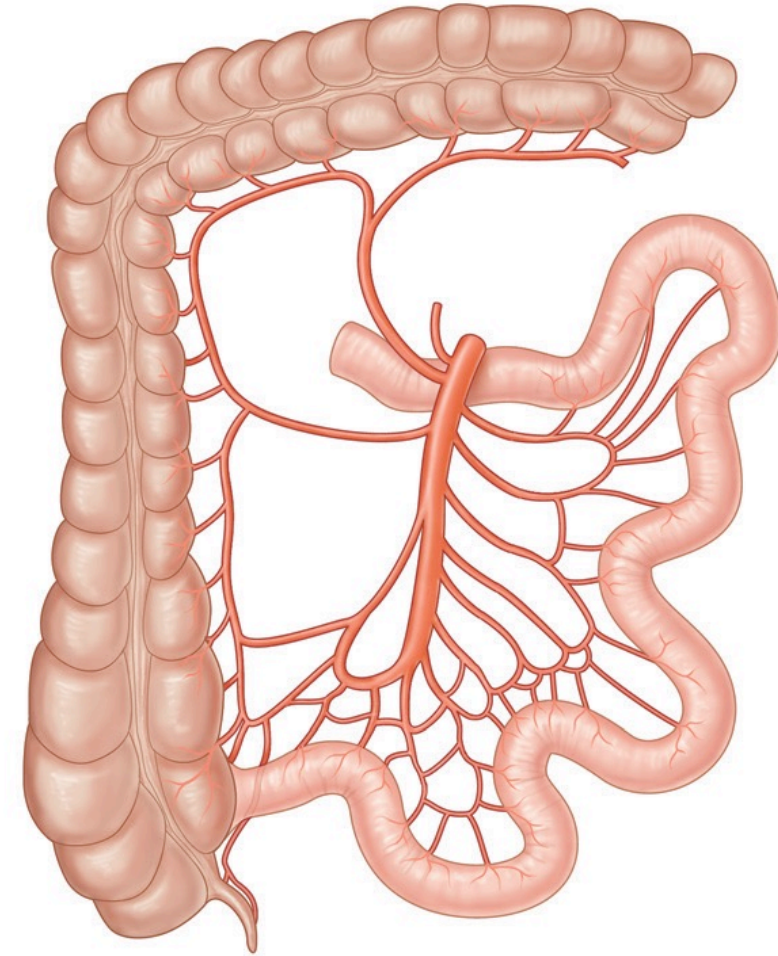
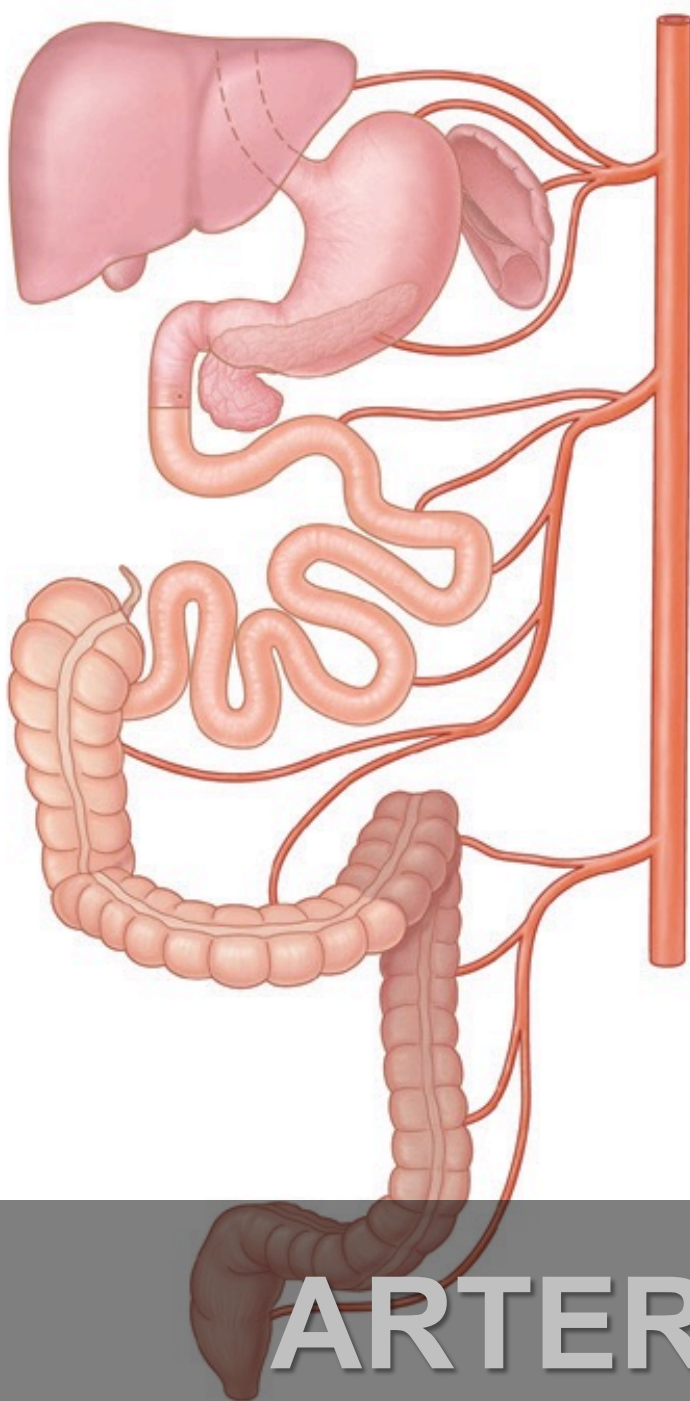
♦ A. colica media

♦ A. mesenterica inferior

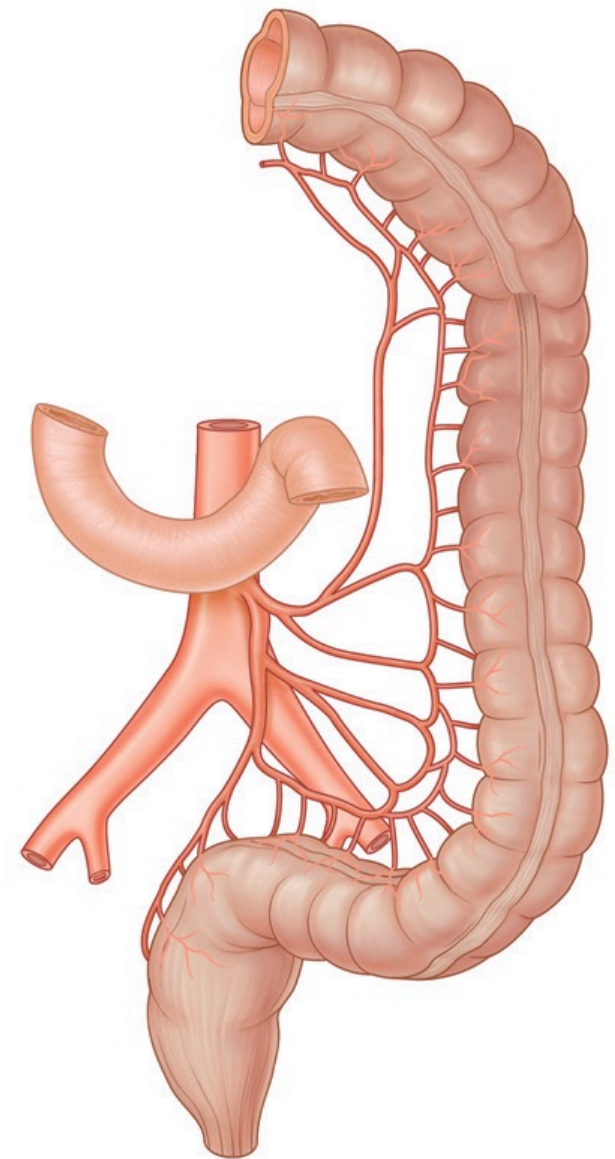
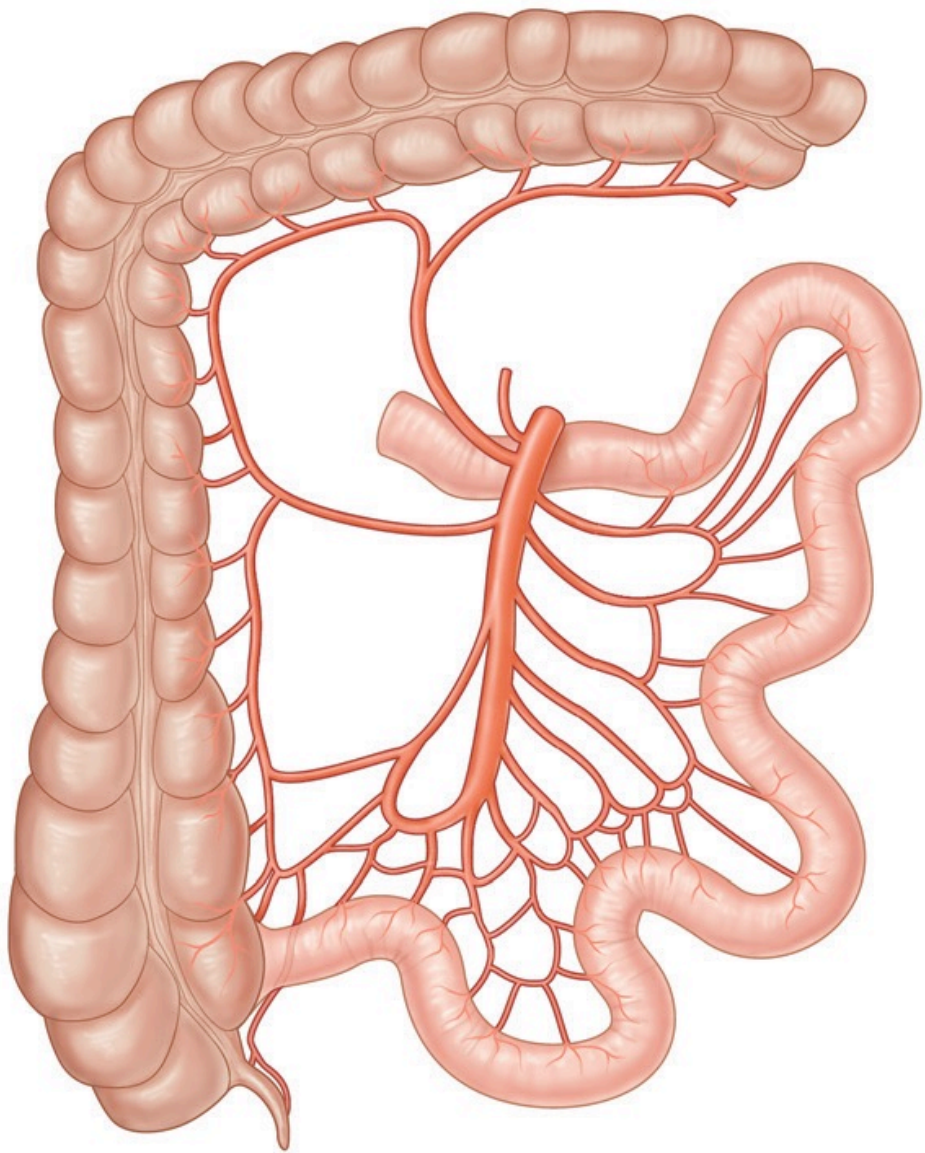
♦ A. colica sinistra

♦ A. sigmoidea

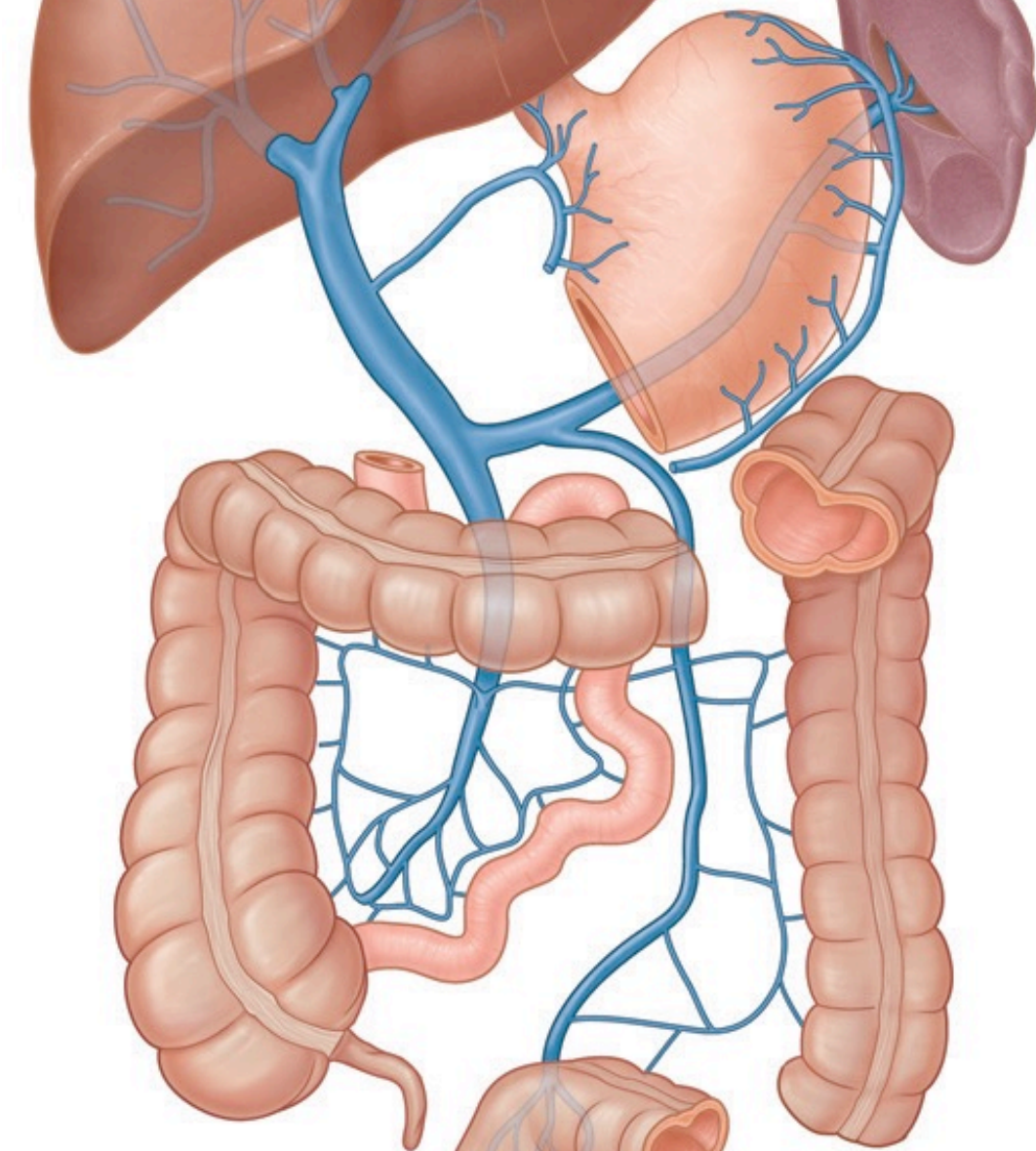
♦ A. rectalis supúerior



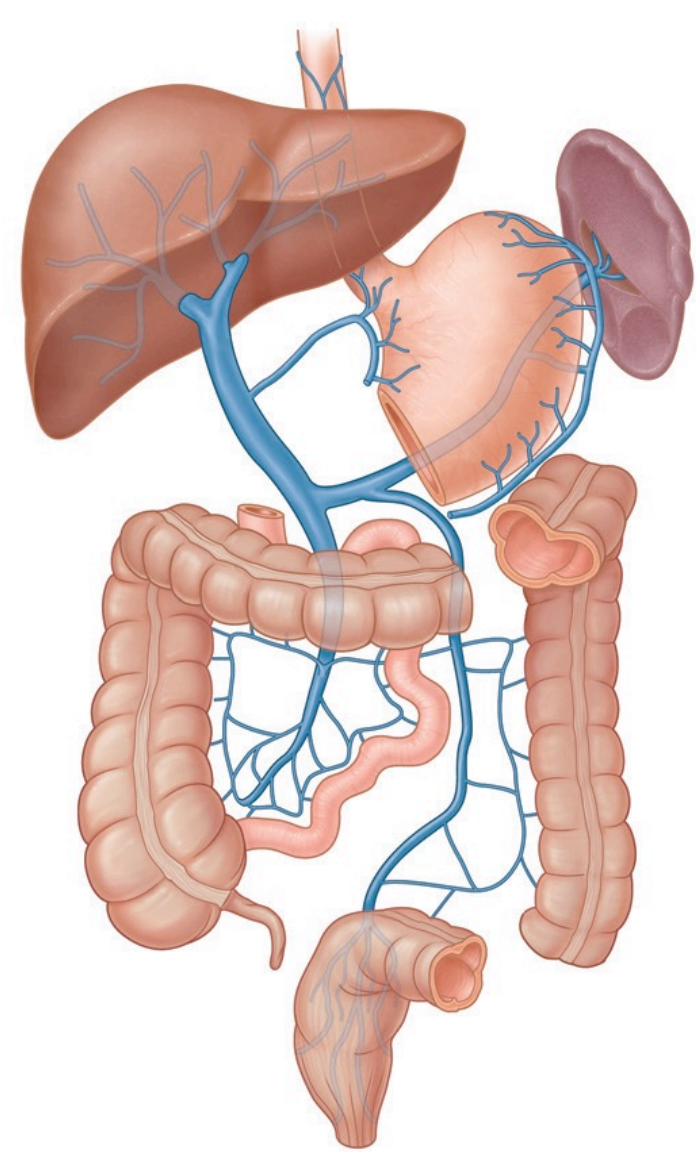
ARTERIAE MESENTERIALES



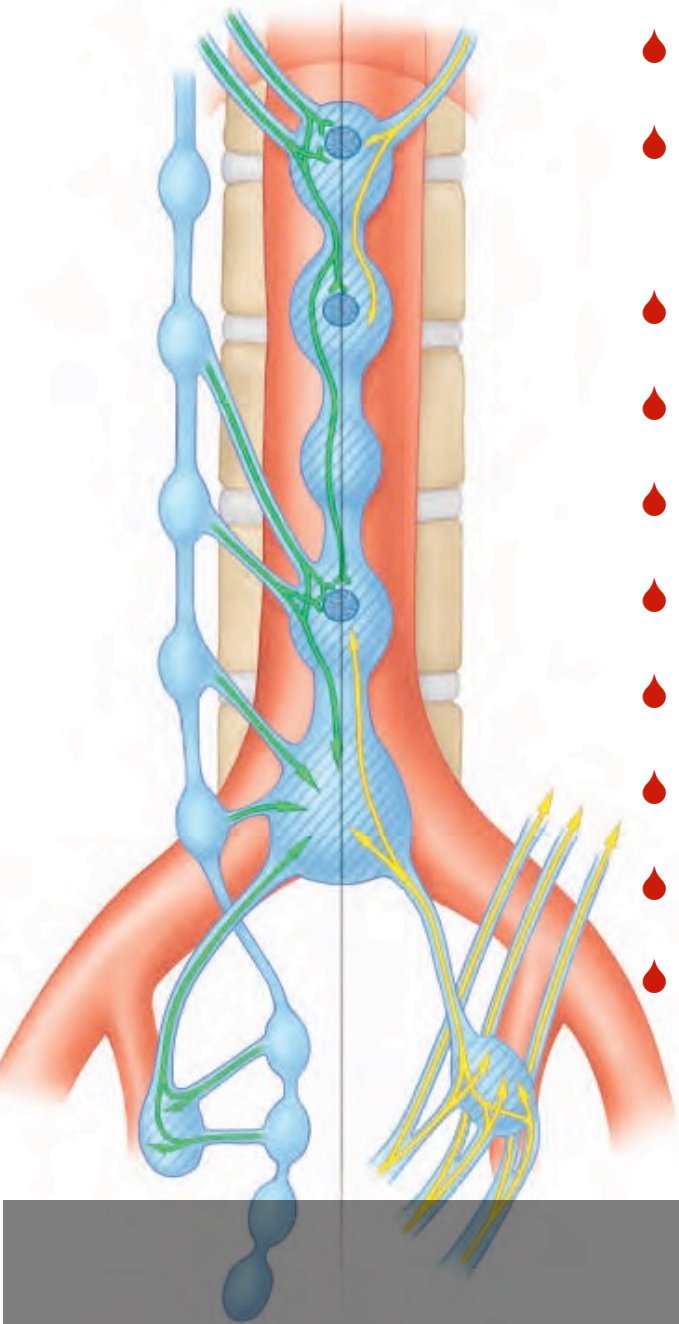
A. MESENTERICA SUP. ET INF.



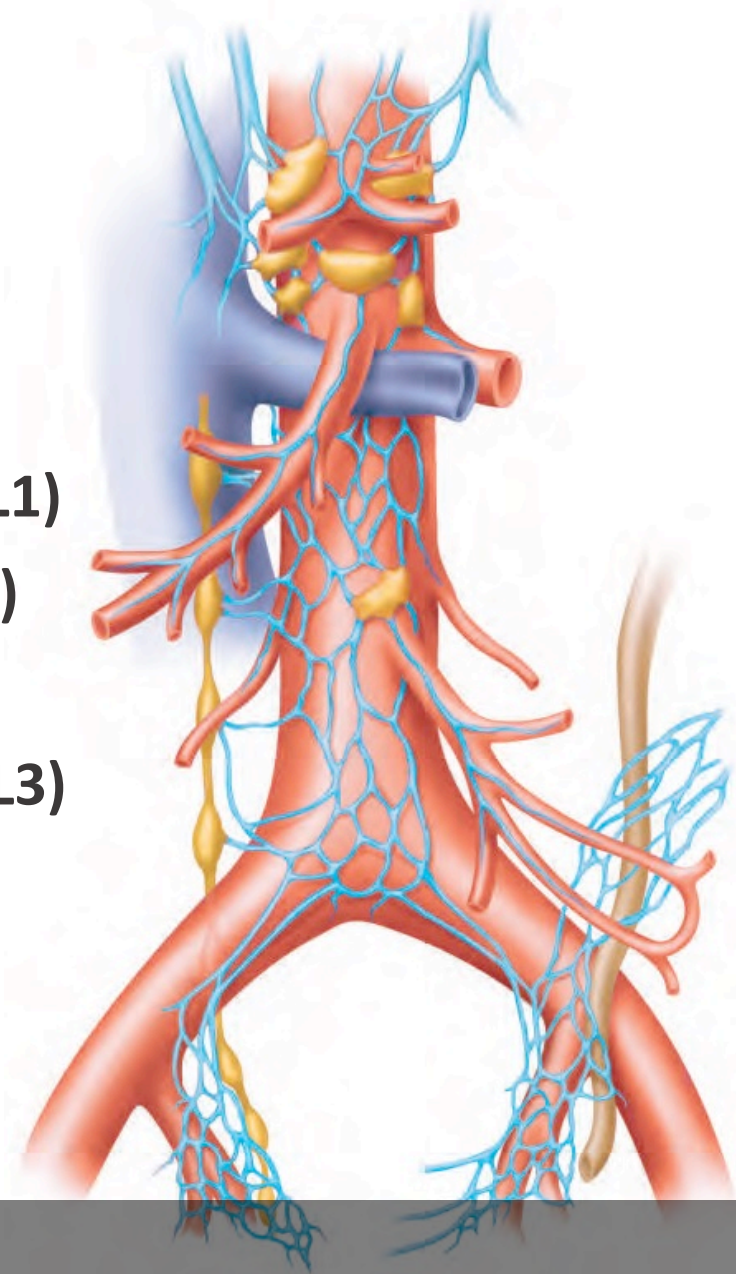
- V. portae hepatis
- V. gastrica dextra
- V. gastrica sinistra
- V. mesenterica superior
- V. mesenterica inferior
- V. lienalis



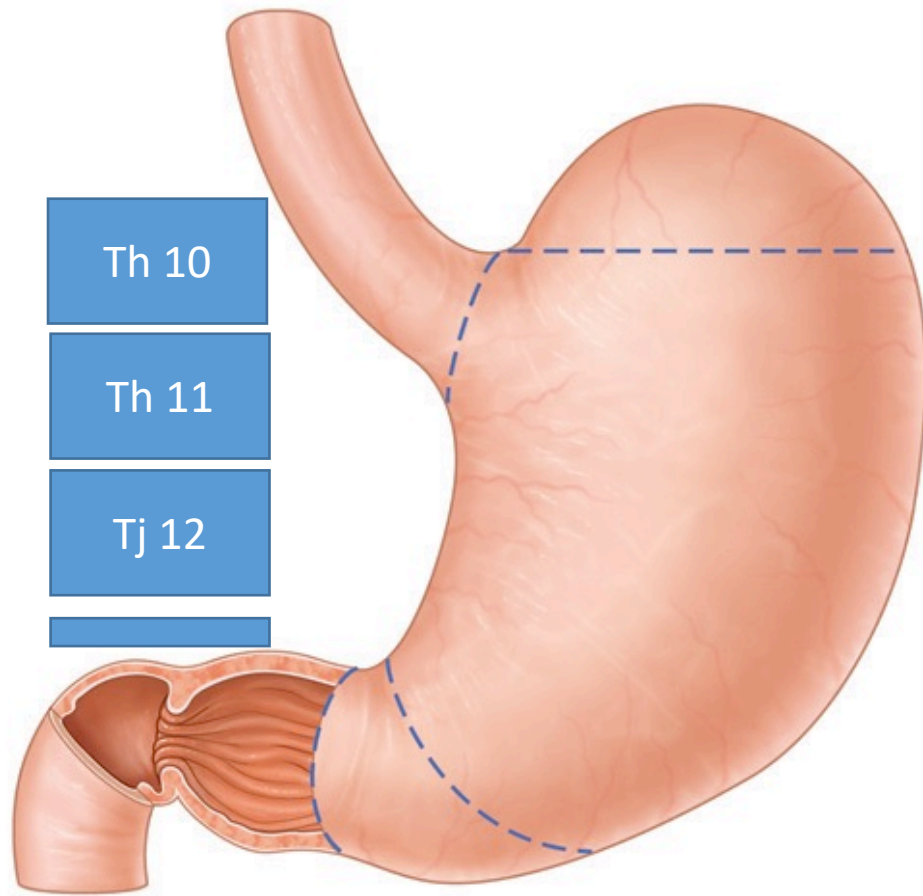
VENAE MESENTERIALES



- ♦ **N. vagus (N. X)**
- ♦ **Ganglion pelvinum (S2-4)**
 - ♦ Difusní ggl., postgangliová vlákna podél cév
- ♦ **N. splanchnicus major (ggl. Th 6 - 9)**
- ♦ **N. splanchnicus minor (ggl. Th 10, 11)**
- ♦ Ggl. coeliaca dx/sin, plexus solaris (Th12/L1)
- ♦ Ggl. mesentericum superius + plexus (L1/2)
- ♦ Plexus aorticus (L2)
- ♦ Ganglion mesentericum inferius + plexus (L3)
- ♦ Plexus hypogastricus superior (L5)
- ♦ Plexus hypogastricus inferior (All)



NERVI INTESTINI



- Cardia
- Incissura cardialis
- Fundus
- Corpus
- Curvatura major
- Curvatura minor
- Angulus
- Antrum pylori
- Canalis pylori

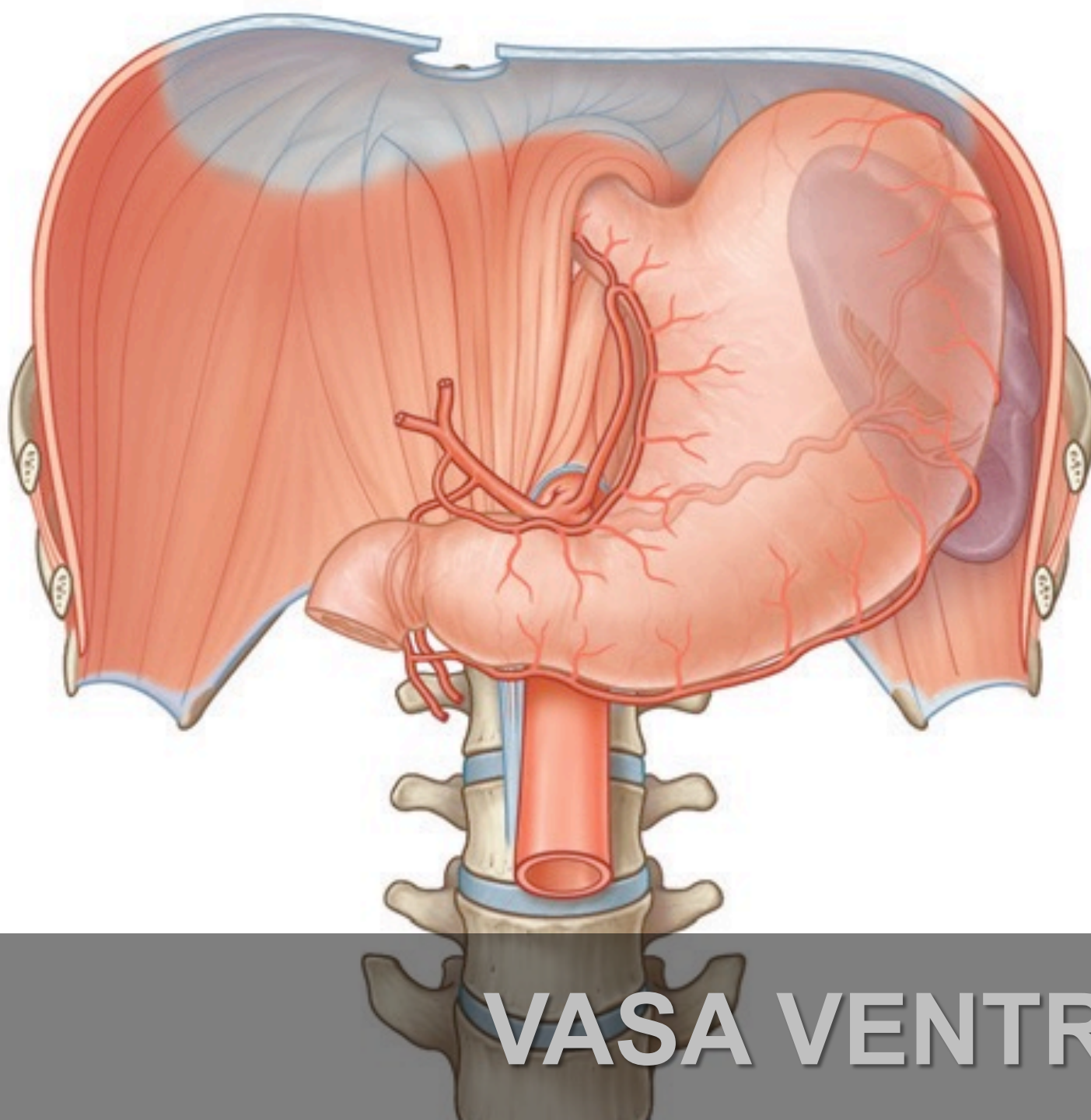
- **Pars digestoria**
 - Saccus cardiacus (fornix)
 - Tubus gastricus (corpus)
- **Pars egestoria**
 - Antrum pylori
 - Canalis pylori

VENTRICULUS



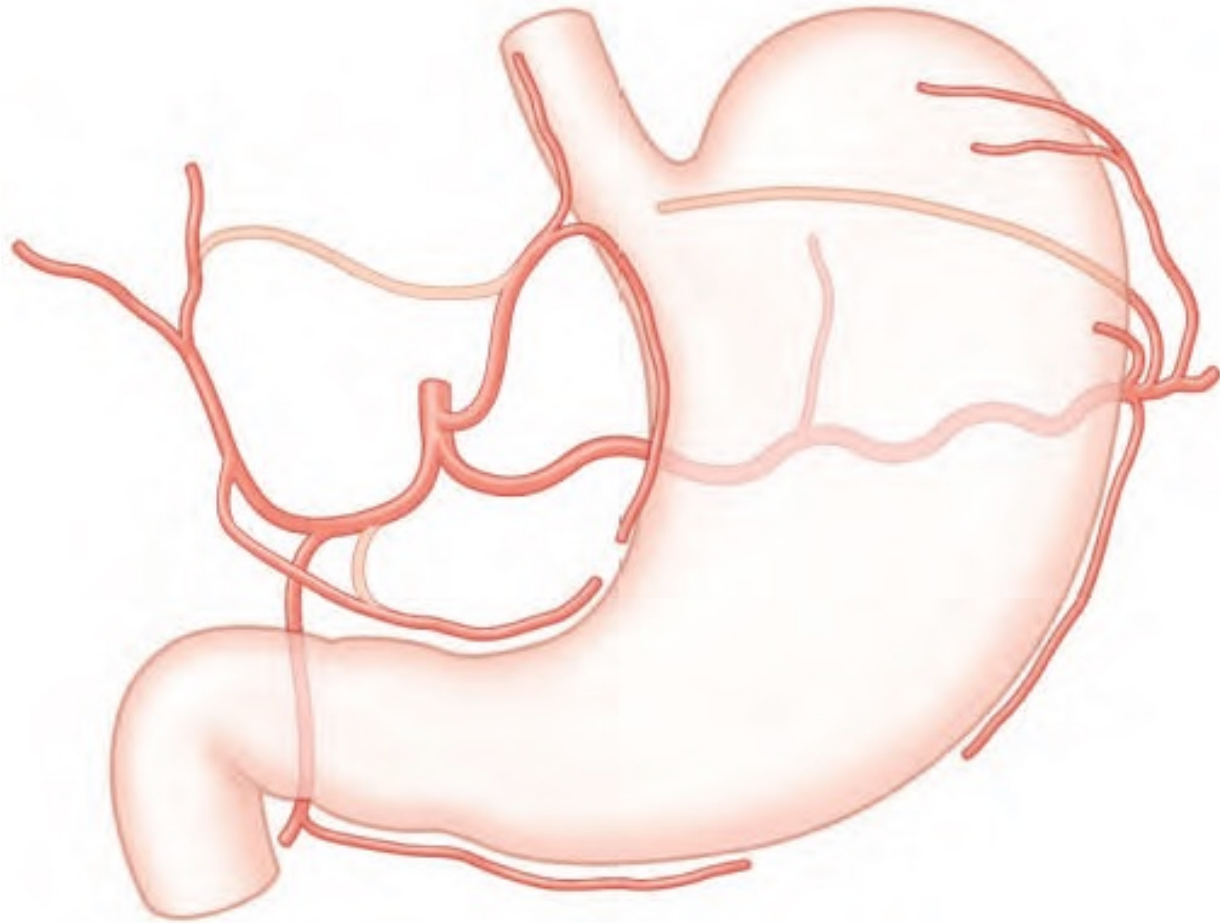
- Cardia
- Incissura cardialis
- Fundus
- Corpus
- Curvatura major
- Curvatura minor
- Angulus
- Antrum pylori
- Canalis pylori

VENTRICULUS



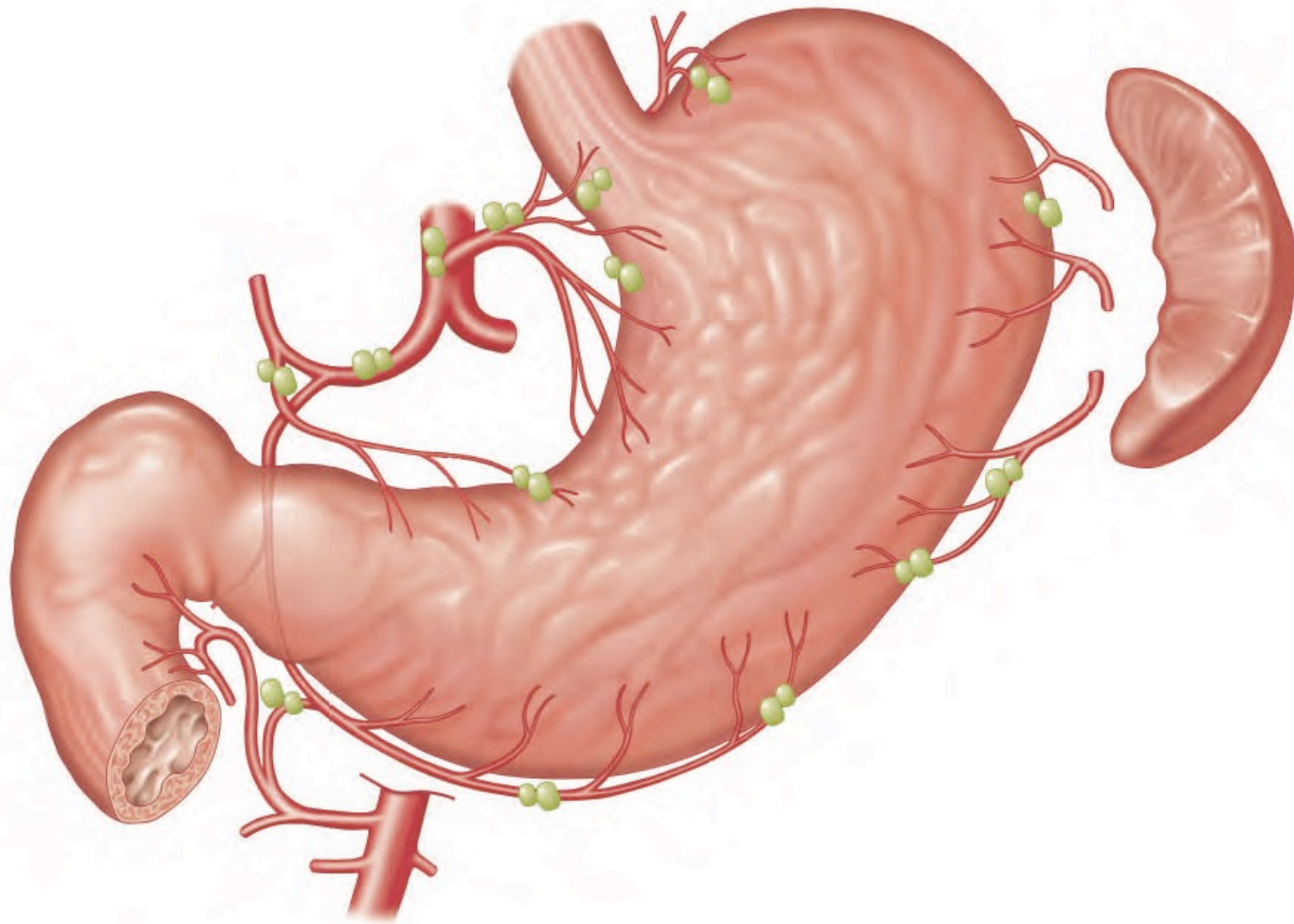
- ♦ **A. gastrica sinistra**
- ♦ **A. gastrica dextra**
- ♦ **A. gastromentalis dextra**
- ♦ **A. gastromentalis sinistra**
- ♦ **A. gastriace breves**
- ♦ **V. gastrica sinistra**
- ♦ **V. gastrica dextra**
- ♦ **V. gastromentalis dextra**
- ♦ **V. gastromentalis sinistra**
- ♦ **V. gastriace breves**

VASA VENTRICULI



- ♦ **A. gastrica sinistra**
- ♦ **A. gastrica dextra**
- ♦ **A. gastroomentalis dextra**
- ♦ **A. gastroomentalis sinistra**
- ♦ **A. gastriace breves**
- ♦ **V. gastrica sinistra**
- ♦ **V. gastrica dextra**
- ♦ **V. gastroomentalis dextra**
- ♦ **V. gastroomentalis sinistra**
- ♦ **V. gastriace breves**

VASA VENTRICULI



- ♦ **Nodi paracardiales dx., sin.**
- ♦ **Nodi curvaturae minoris**
- ♦ **Nodi suprapylorici**
- ♦ **Nodi hepatici communes**
- ♦ **Nodi coeliaci**
- ♦ **Nodi gastromentales**
 - ♦ gastroepiploici
 - ♦ Sin., dx.
- ♦ **Nodi infrapylorici**

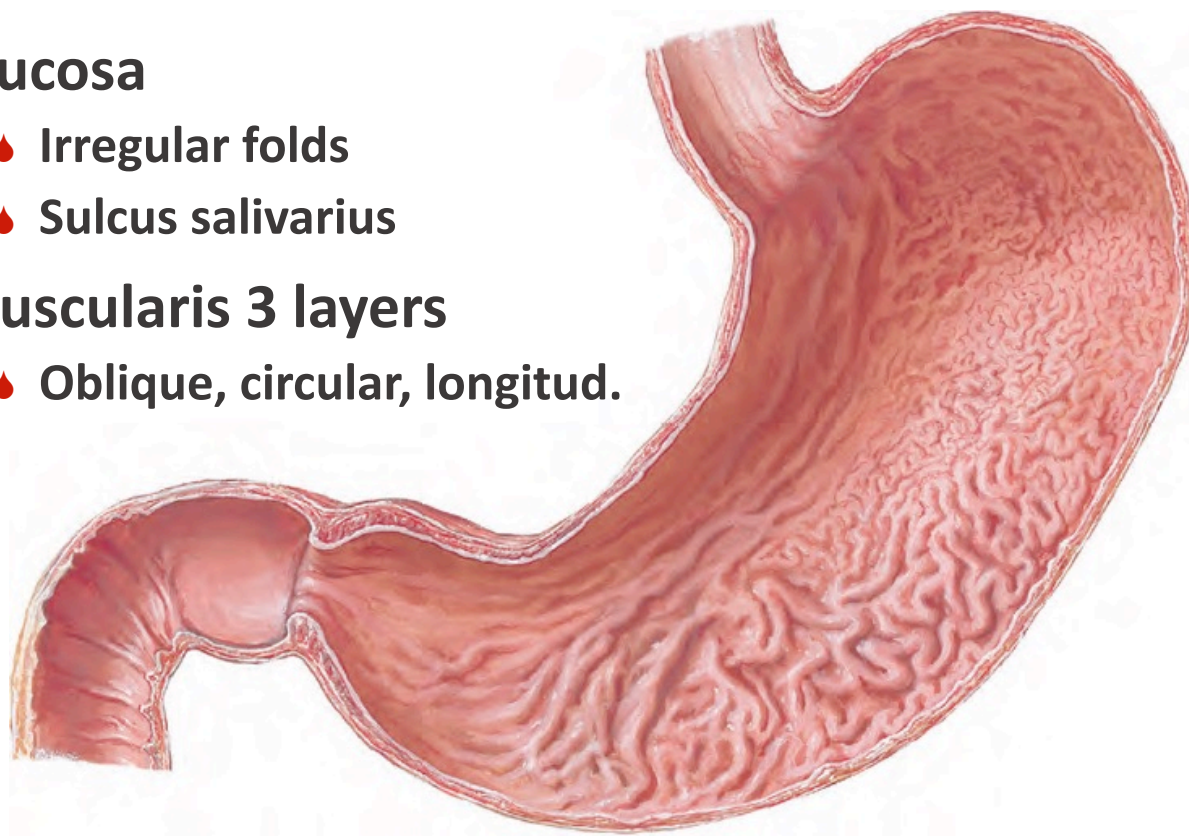
NODI LYMPHATICI VENTRICULI

- ♦ **mucosa**

- ♦ Irregular folds
- ♦ Sulcus salivarius

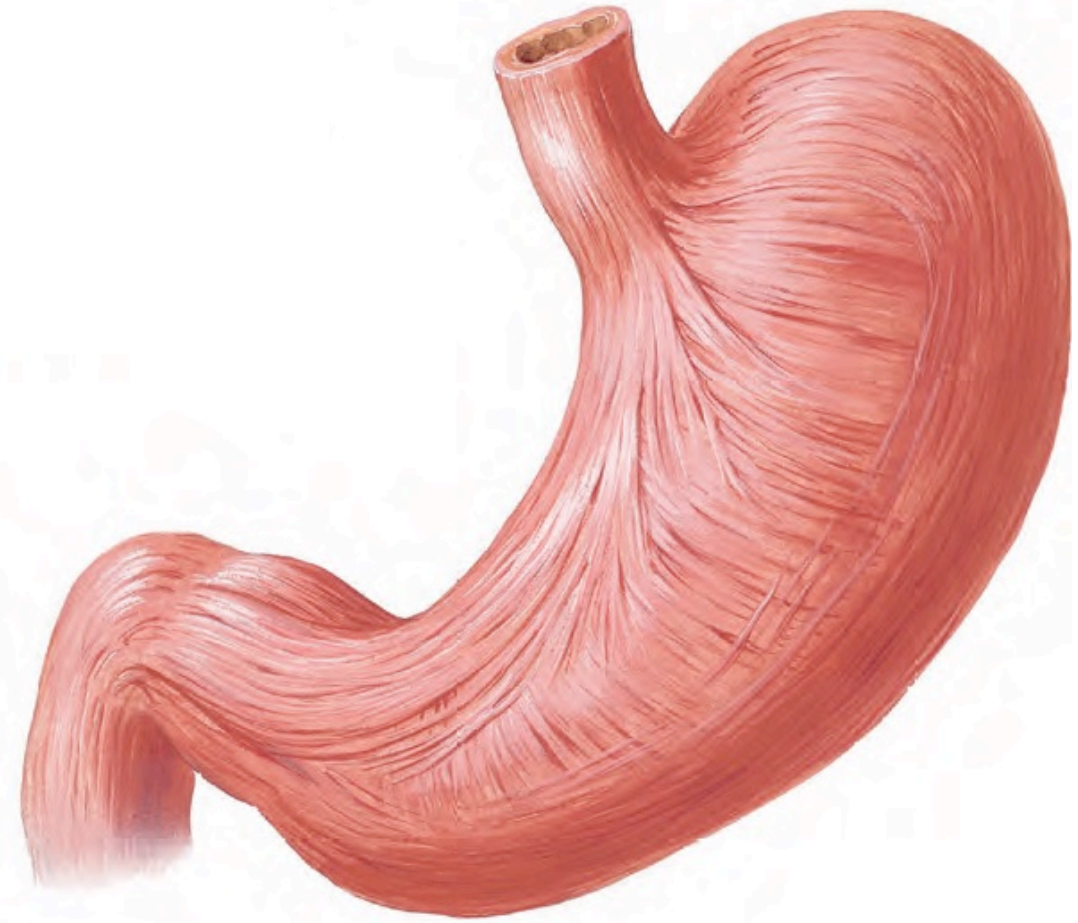
- ♦ **Muscularis 3 layers**

- ♦ Oblique, circular, longitud.



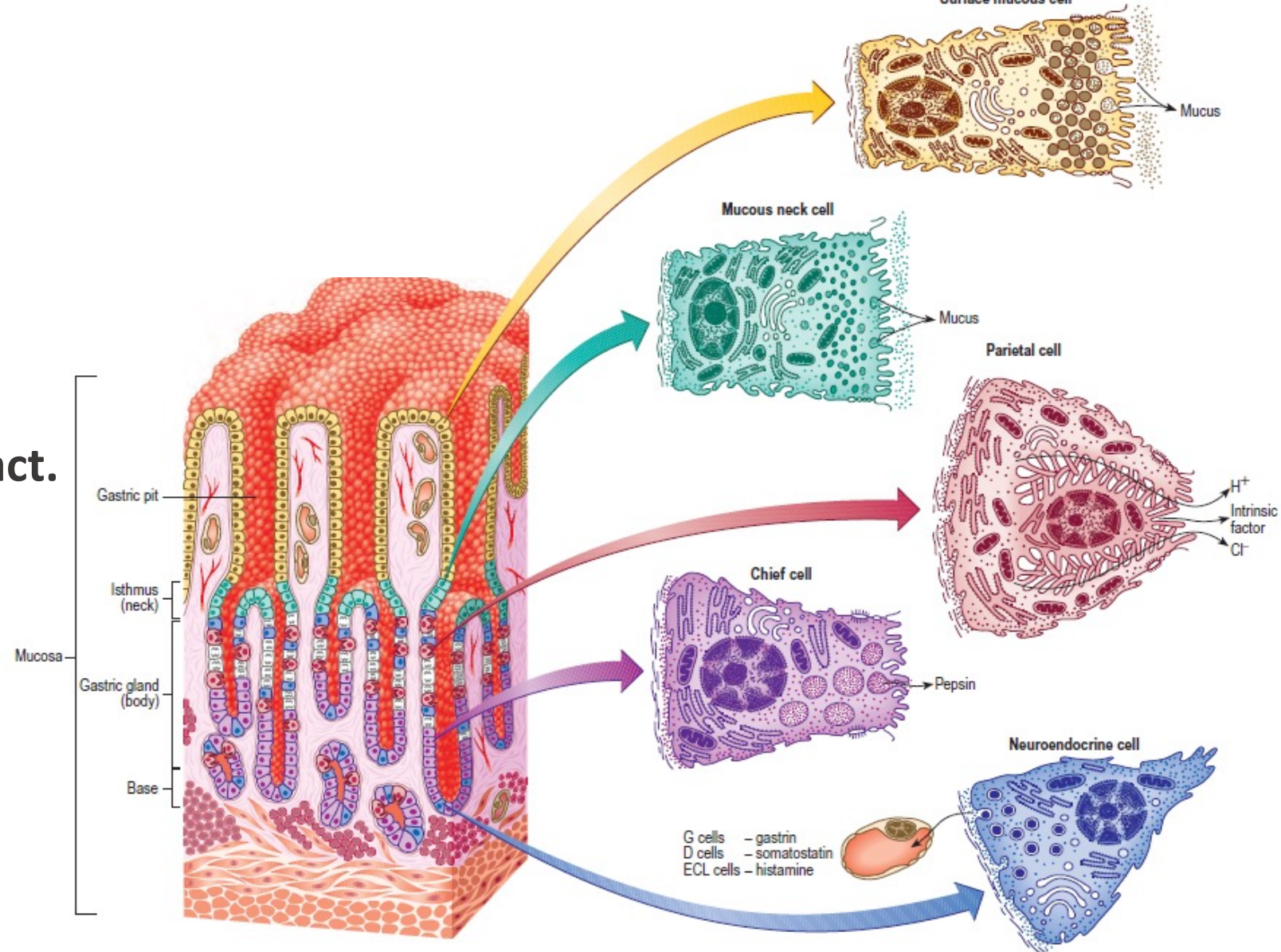
- ♦ **Serosa**

- ♦ Peritoneum viscerale
- ♦ Anterior and posterior sheath of peritoneum

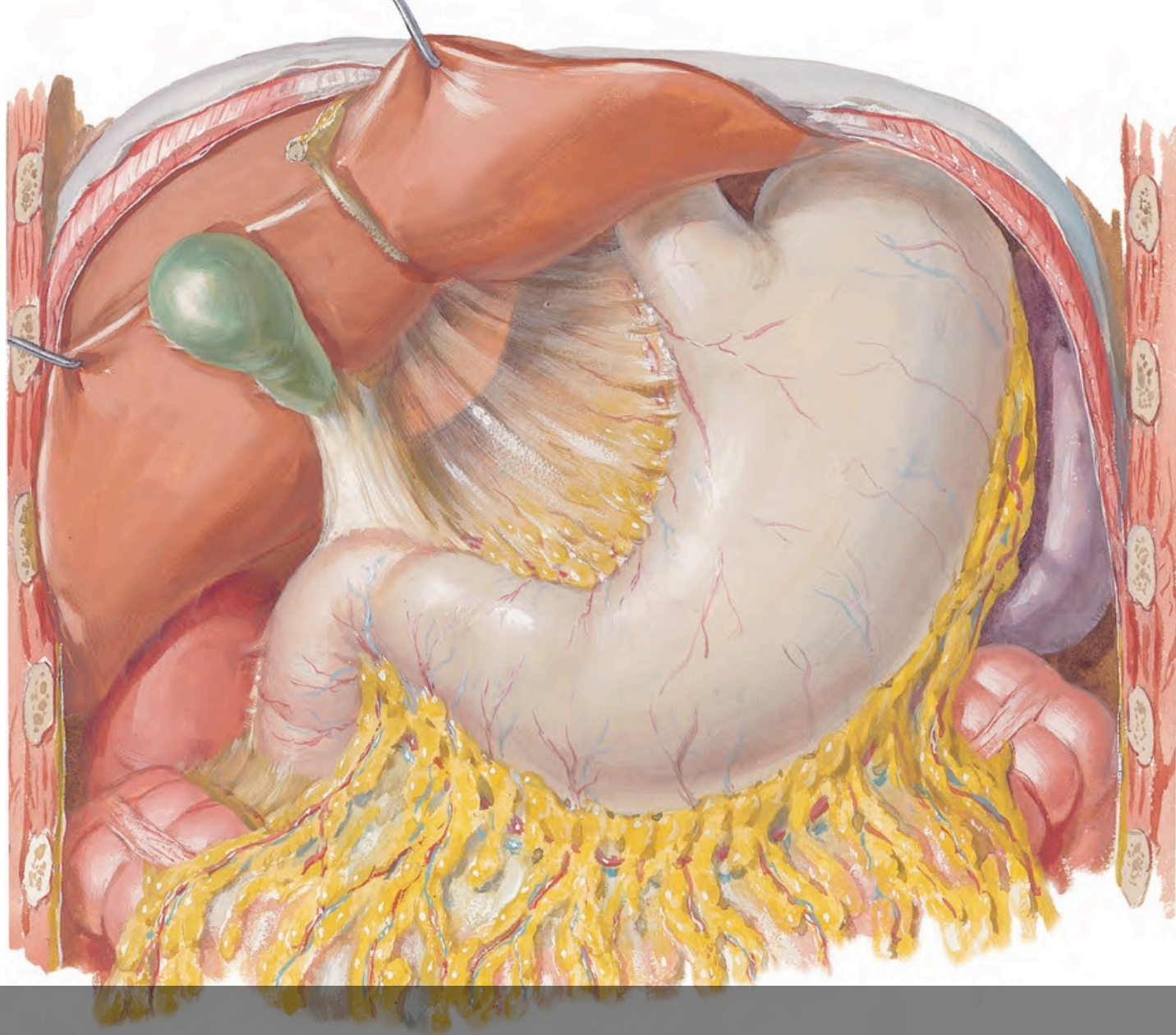


WALL OF THE VENTRICLE

- Cylindric epithelium
- Foveola
- Mucinous cells- mucin
 - superficial
 - In neck localized
- Chief cells- pepsinogen
- Parietal cells - HCl + intrinsic fact.
- Neuroendocrine
 - D - somatostatin
 - G - gastrin
 - ECL - histamin



FOVEOLA GASTRICA



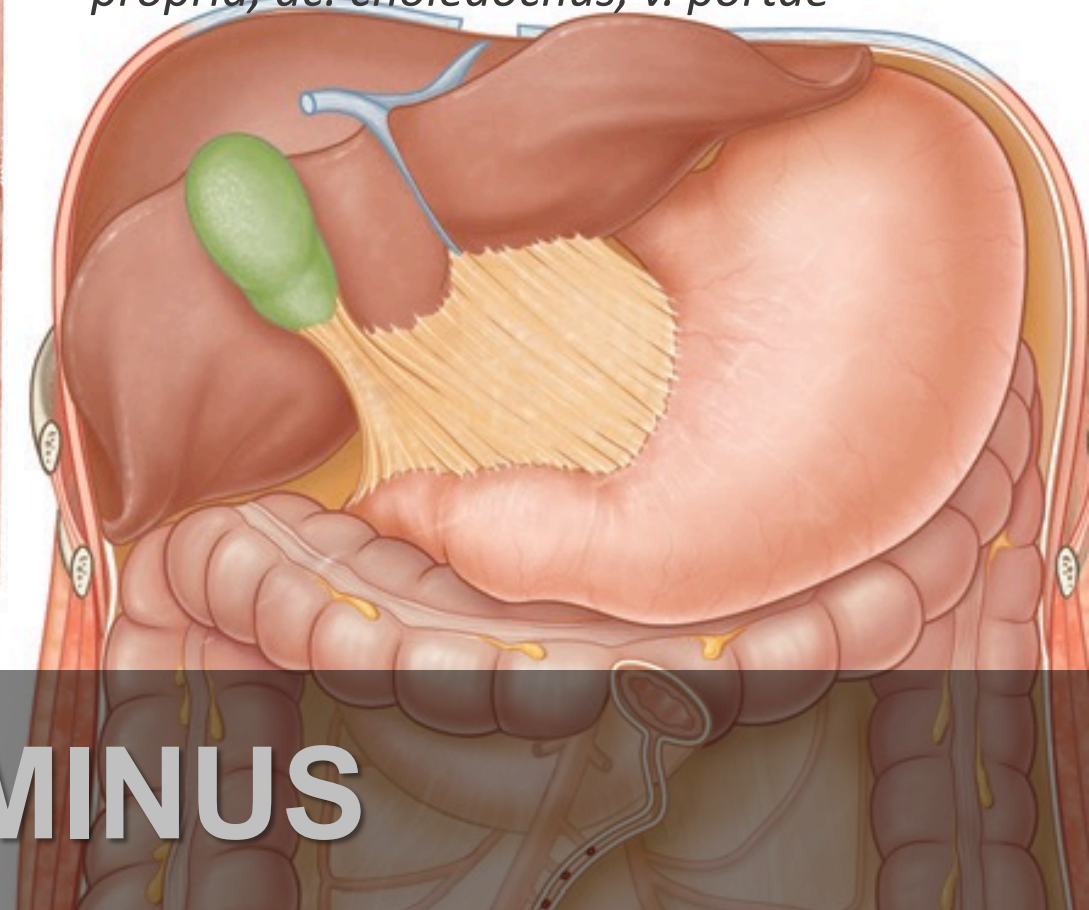
♦ **Pars hepatooesophagica**

♦ **Pars hepatogastrica**

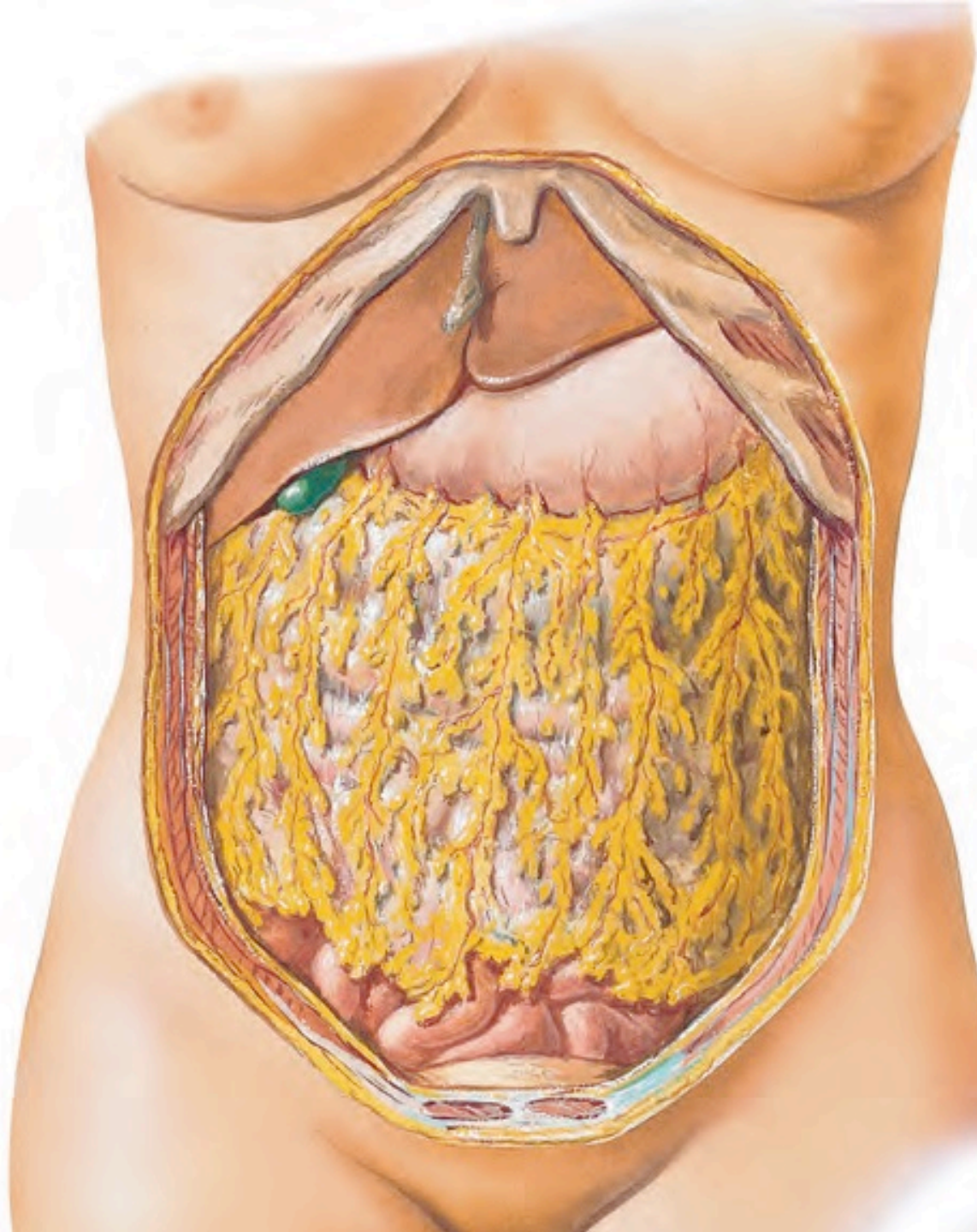
♦ *lig. hepatogastricum - a. gastrica dx. et sinistra, v. gastrica dx. et sinistra*

♦ **Pars hepatoduodenalis**

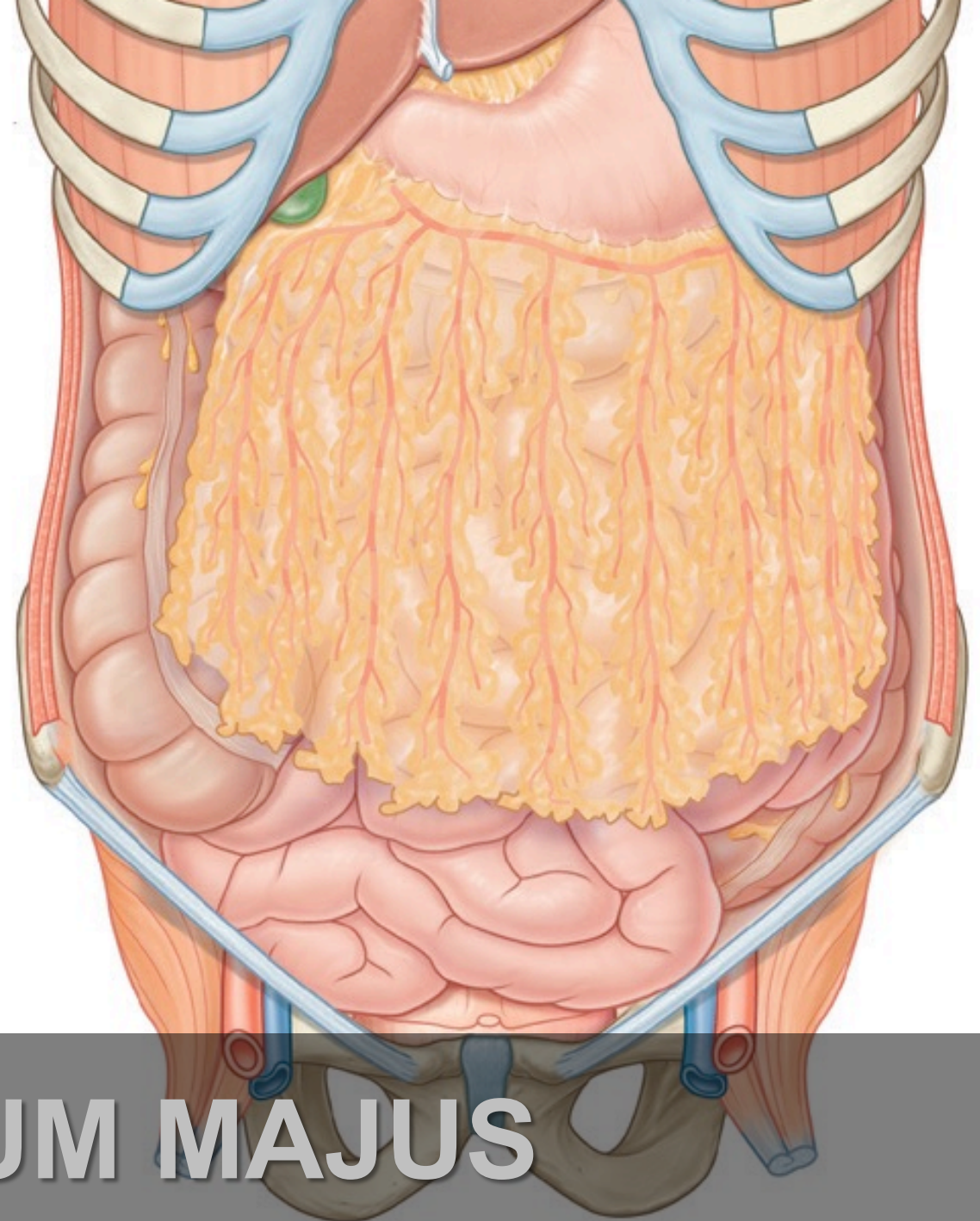
♦ *lig. hepatoduodenale: a. hepatica propria, dc. choledochus, v. portae*



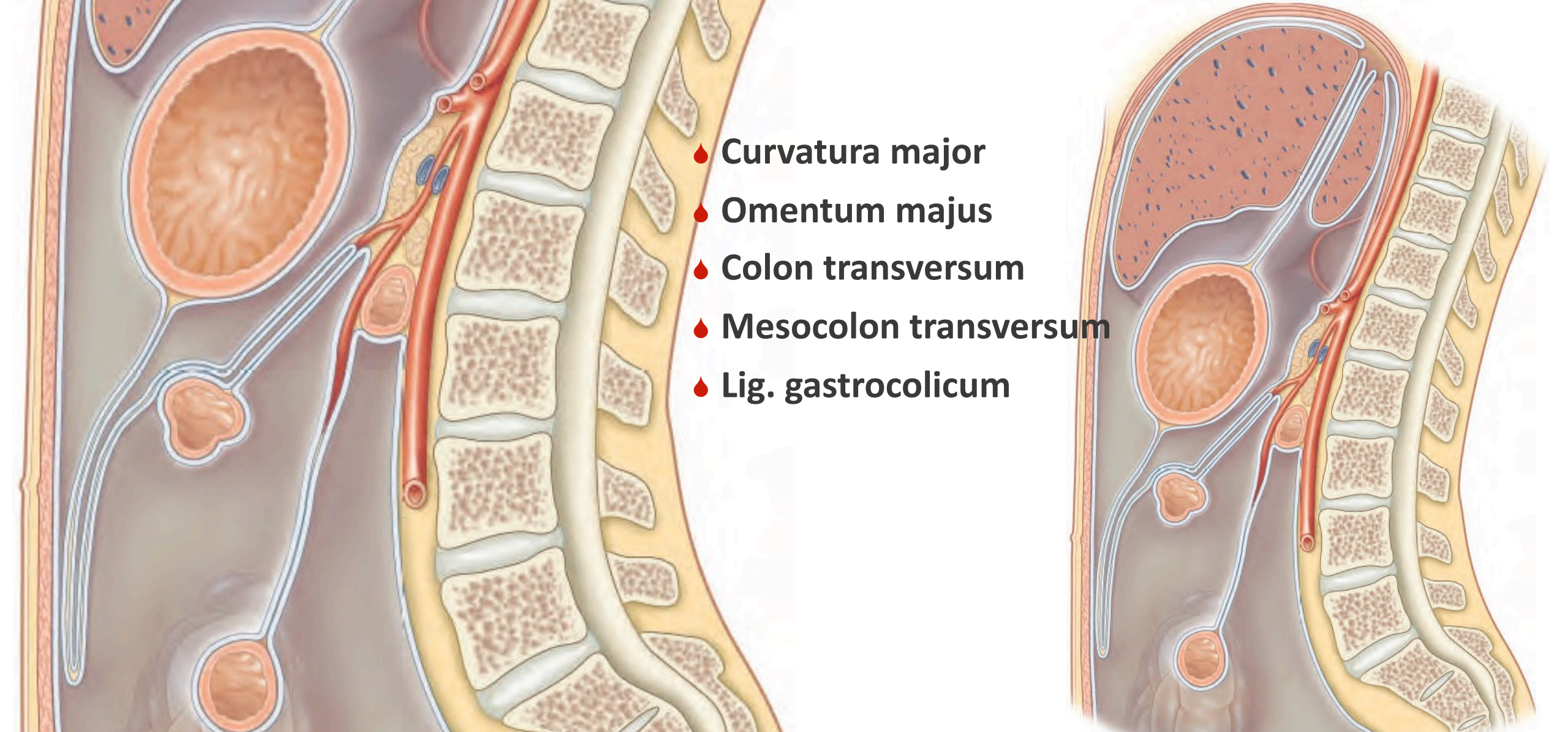
OMENTUM MINUS



- Double-layered peritoneal duplicature
- Ventral and dorsal sheath
- Omental vessels
- Faty tissue
- Curvatura major
- Mesocolon transversum



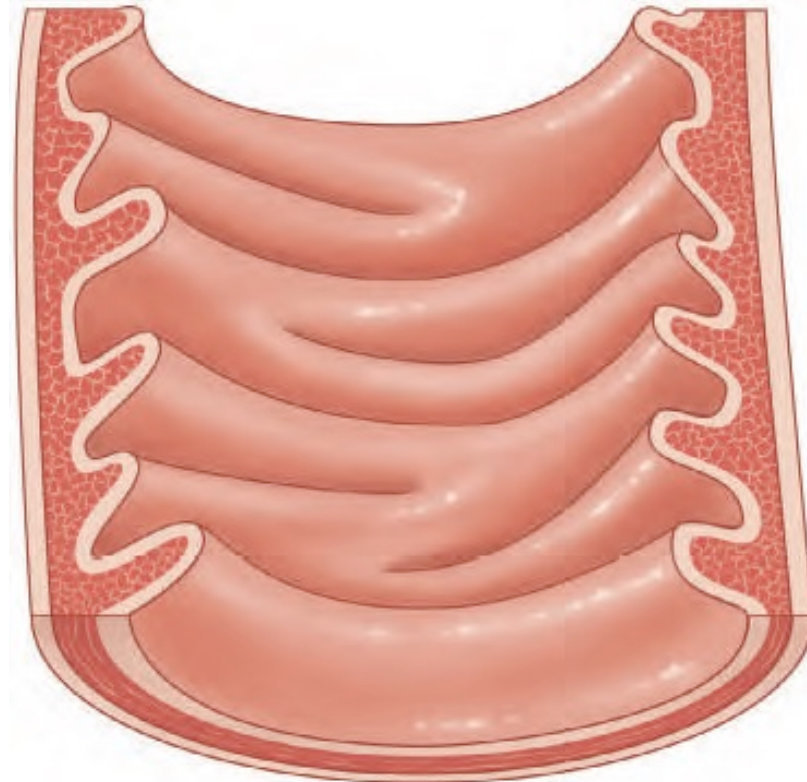
OMENTUM MAJUS

- 
- Two anatomical diagrams of the abdominal cavity in a sagittal view. The left diagram shows the greater omentum (Omentum majus) as a large, apron-like structure hanging from the greater curvature of the stomach. The right diagram shows the transverse colon (Colon transversum) and its associated mesocolon (Mesocolon transversum) and ligament (Lig. gastrocolicum). The diagrams illustrate the relationship between these structures and the underlying vertebral column and abdominal organs.
- ♦ **Curvatura major**
 - ♦ **Omentum majus**
 - ♦ **Colon transversum**
 - ♦ **Mesocolon transversum**
 - ♦ **Lig. gastrocolicum**

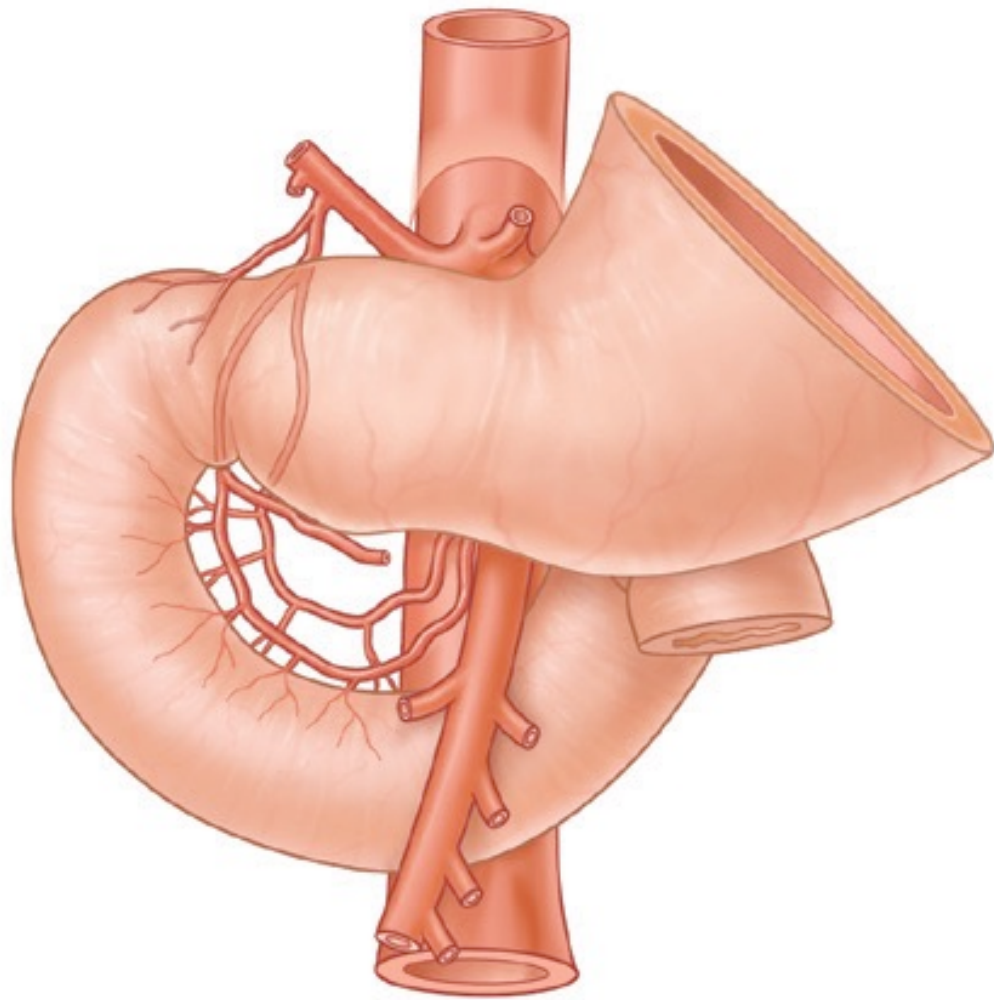
OMENTUM MAJUS



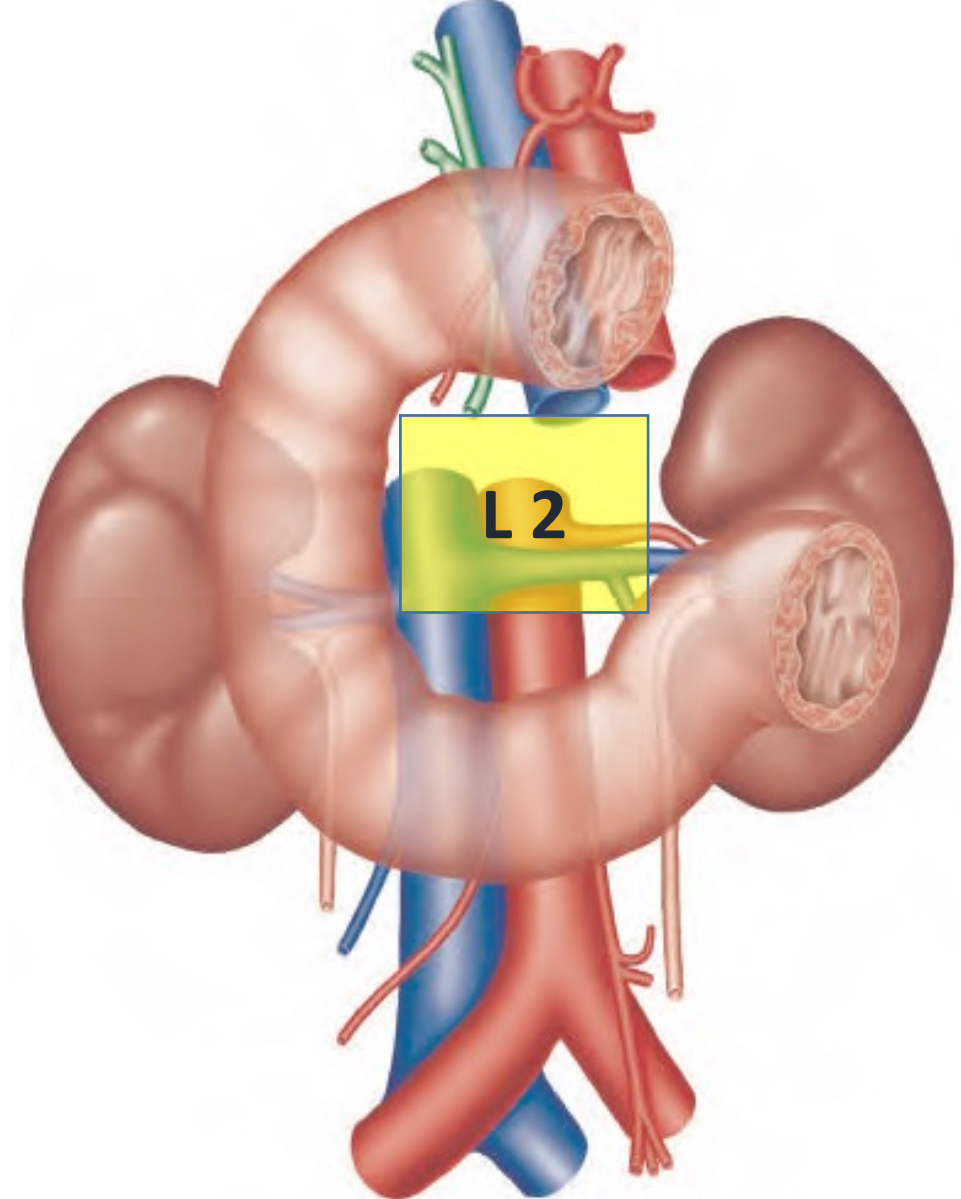
- ♦ Duodenum - dvanáctník - 30 cm (12 inches)
 - ♦ Secondary in retroperitoneumv retroperitoneu
- ♦ Jejunum - lačník - 3/5
- ♦ Ileum - kyčelník - 2/5



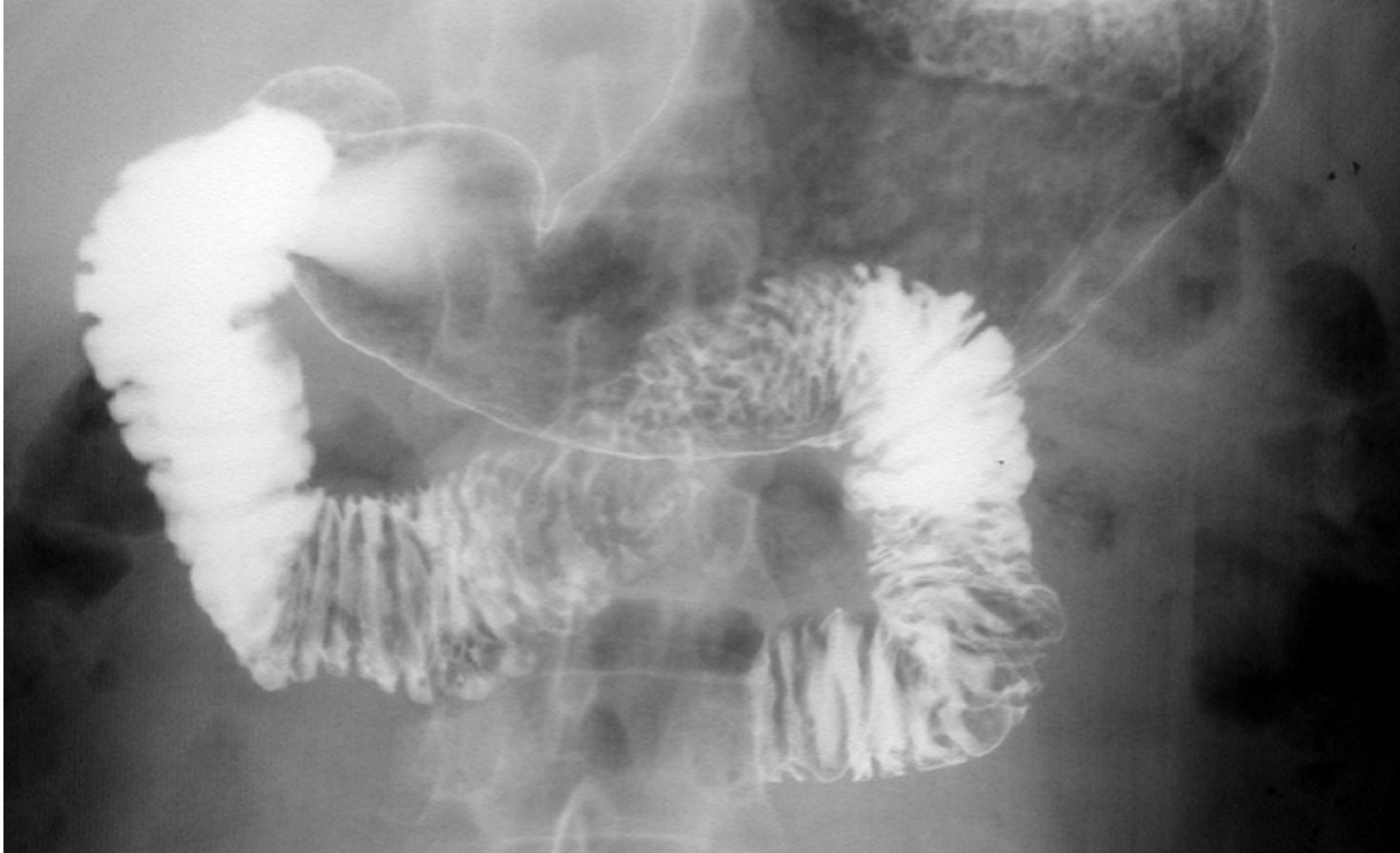
INTESTINUM TENUE



- ♦ *vertebra L2*
- ♦ **Pars superior**
 - ♦ bulbus
- ♦ **Pars descendens**
 - ♦ Papilla major
 - ♦ Papilla minor
- ♦ **Pars inferior**
 - ♦ horizontalis
- ♦ **Pars ascendens**

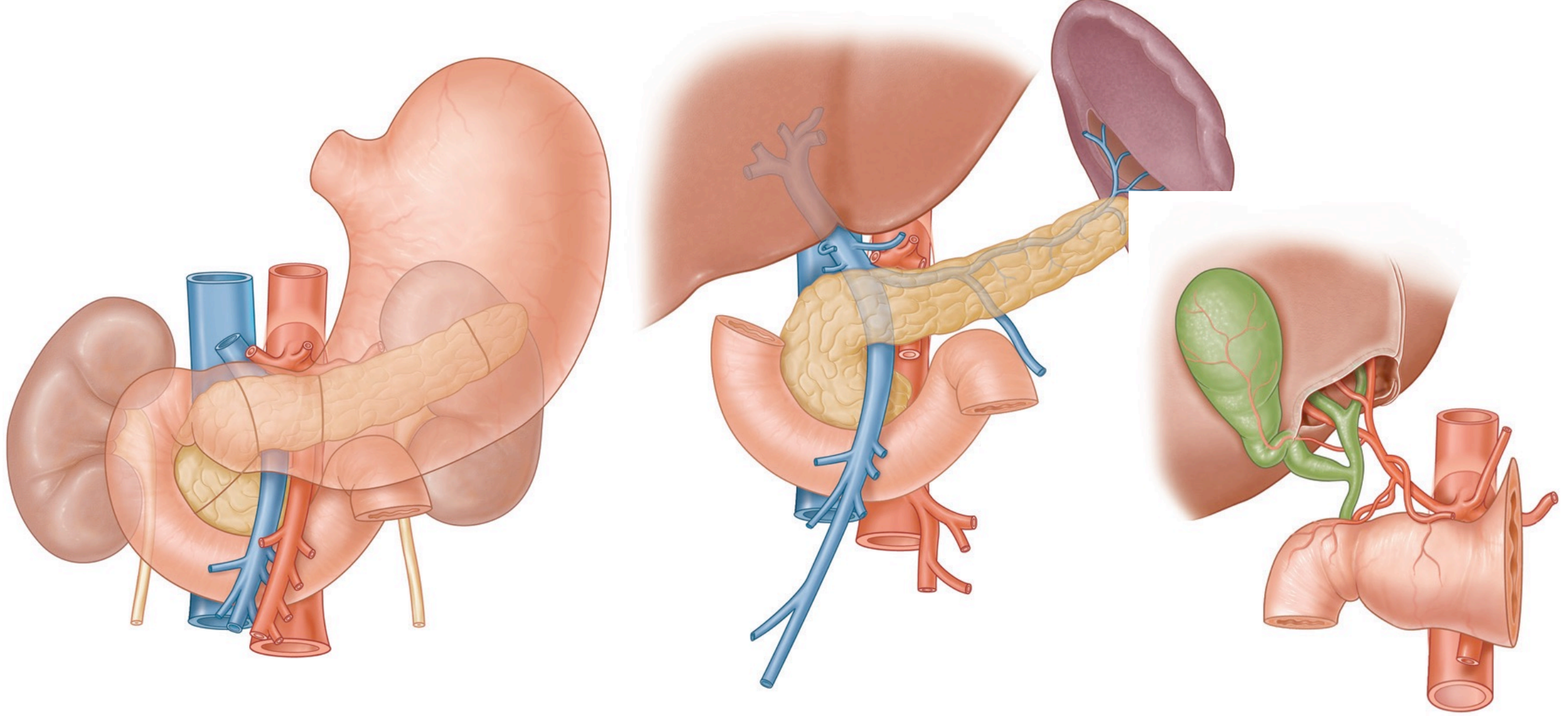


DUODENUM

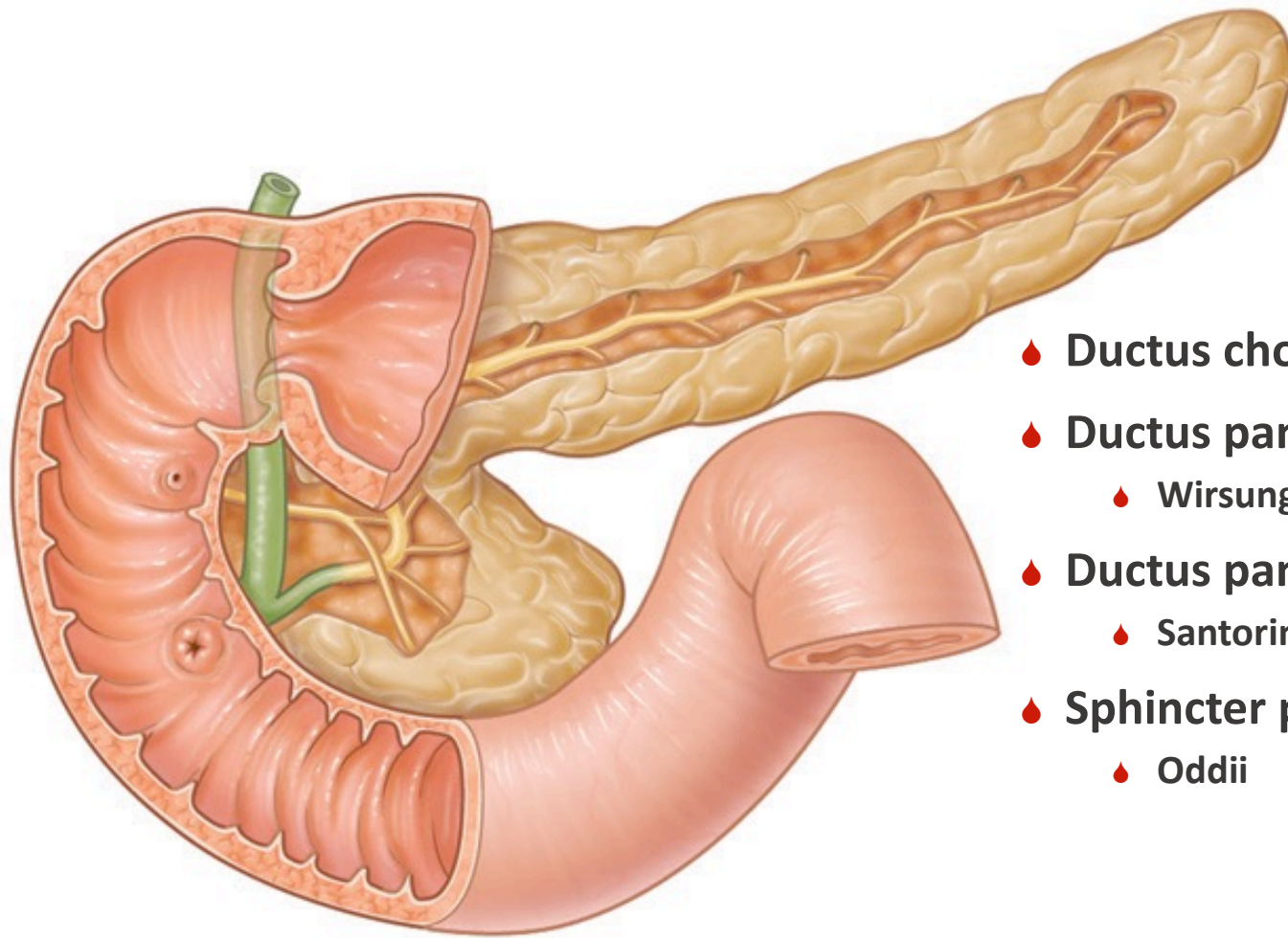


- *vertebra L2*
- **Pars superior**
 - bulbus
- **Pars descendens**
 - Papilla major
 - Papilla minor
- **Pars inferior**
 - horizontalis
- **Pars ascendens**

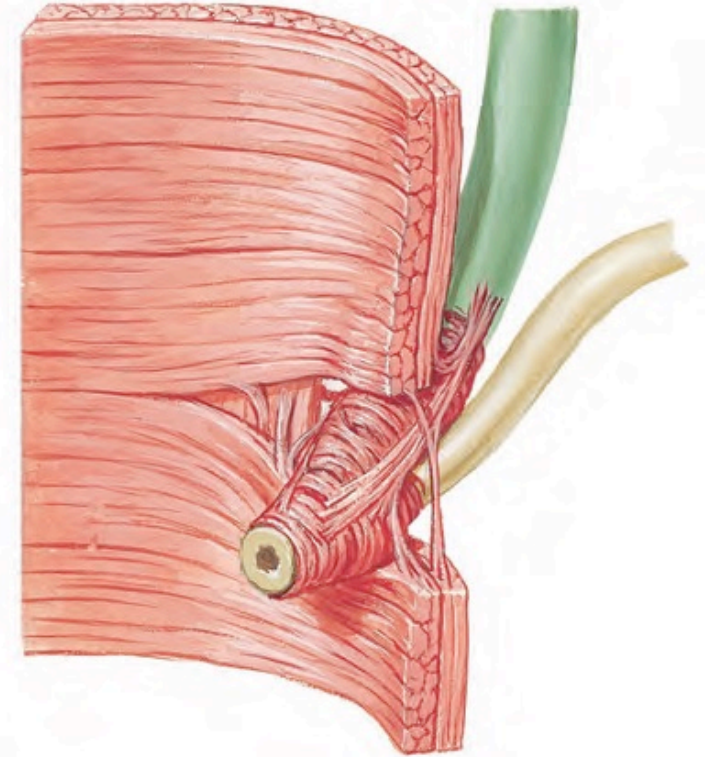
DUODENUM



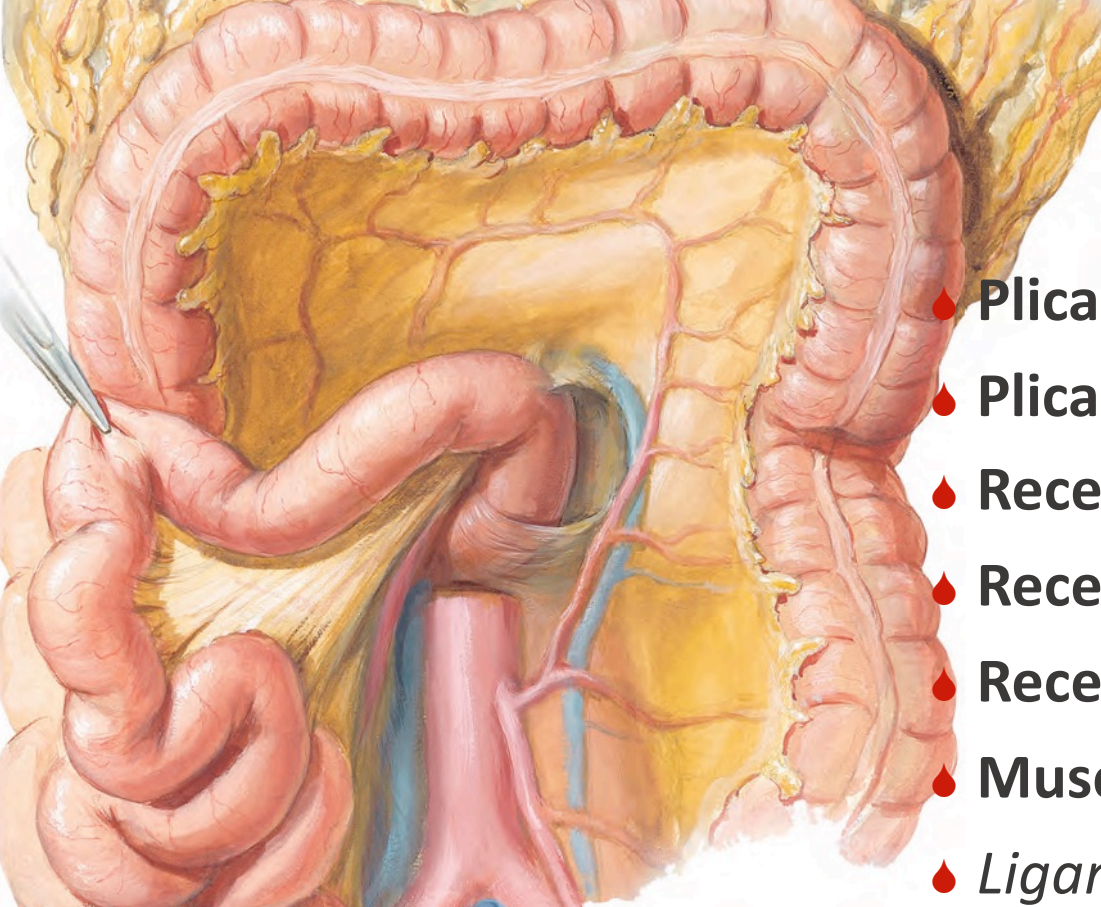
DUODENUM AND SURROUNDINGS



- ♦ **Ductus choledochus**
- ♦ **Ductus pancreaticus major**
 - ♦ Wirsungi
- ♦ **Ductus pancreaticus minor**
 - ♦ Santorini
- ♦ **Sphincter papillae**
 - ♦ Oddii



PAPILLA DUODENI



- ♦ **Plica duodenalis superior**
- ♦ **Plica duodenalis inferior**
- ♦ **Recessus duodenalis superior**
- ♦ **Recessus duodenalis inferior**
- ♦ **Recessus paraduodenalis**
- ♦ **Musculus suspensorius duodeni**
- ♦ *Ligamentum Treitzi*



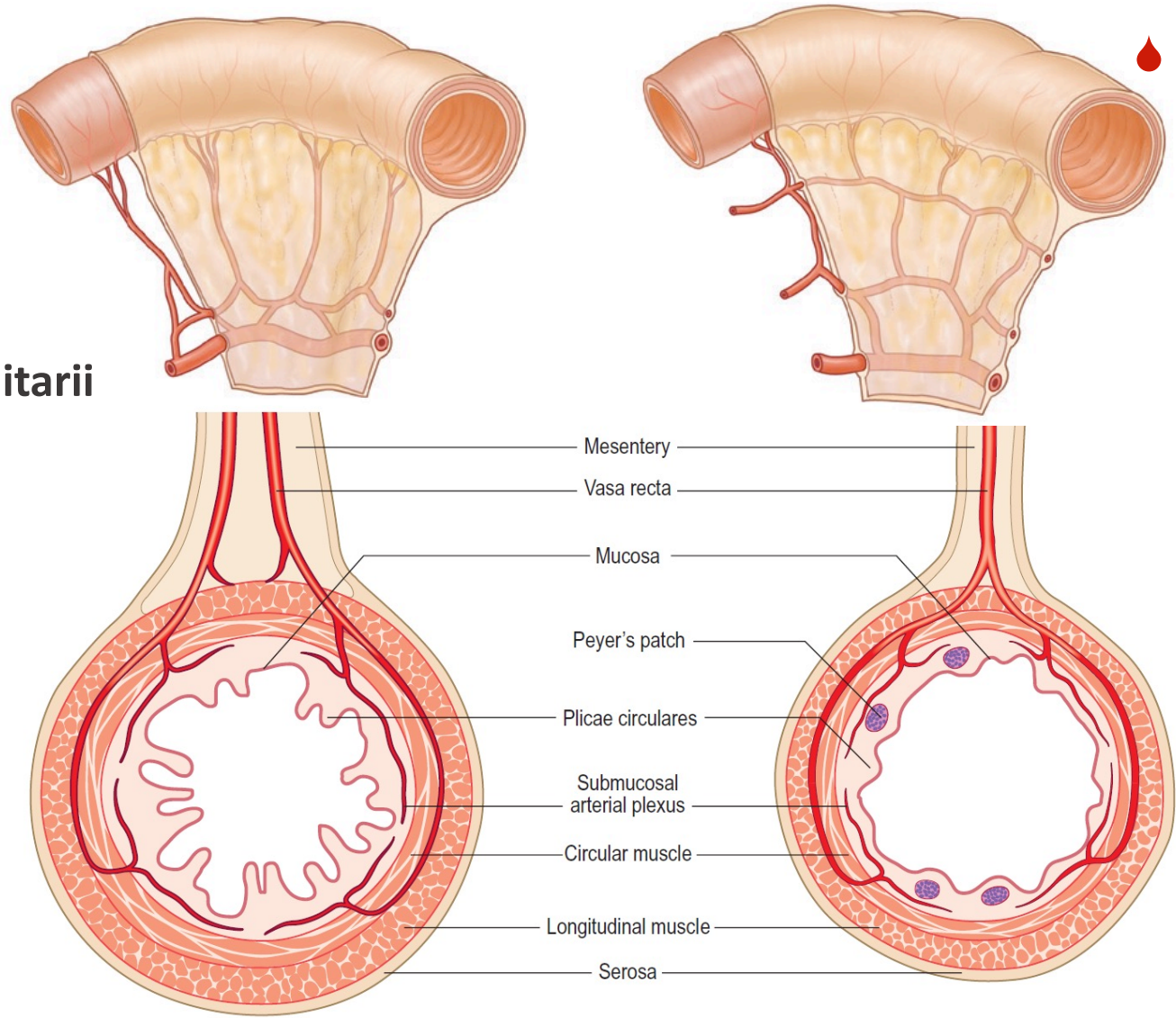
DUODENUM/JEJUNUM

Jejunum

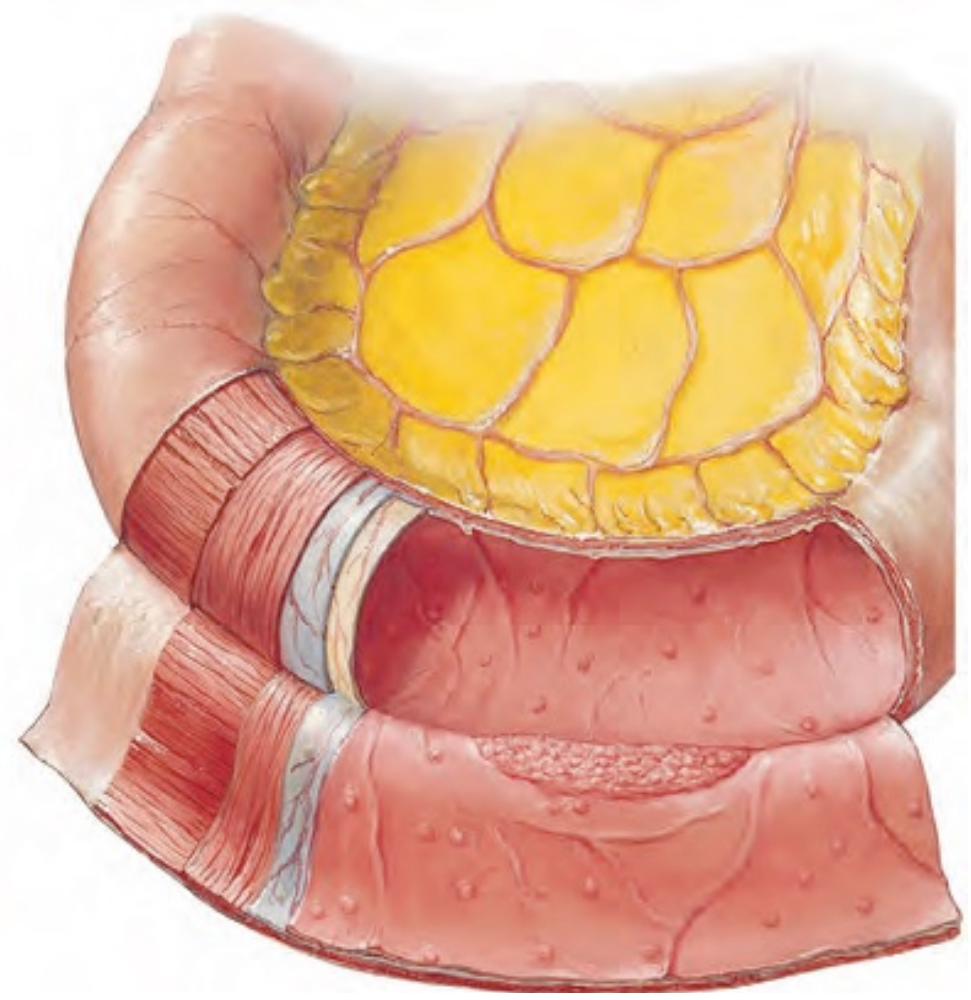
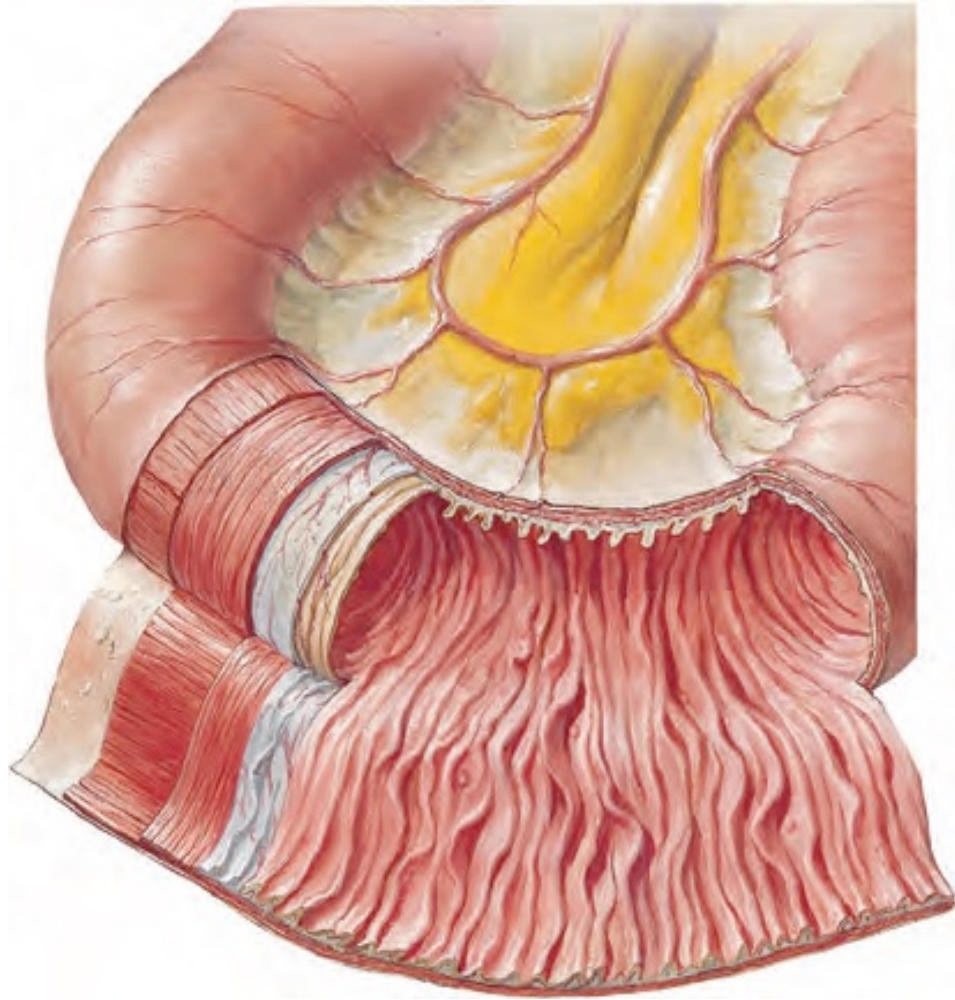
- Left upper
- Wider, more pinky
- Thicker wall
- Frequent folds
- Folliculu lymph. solitarii
- 1 - 2 arcades
- Aa. rectae cca 5 cm
- doubled

Ileum

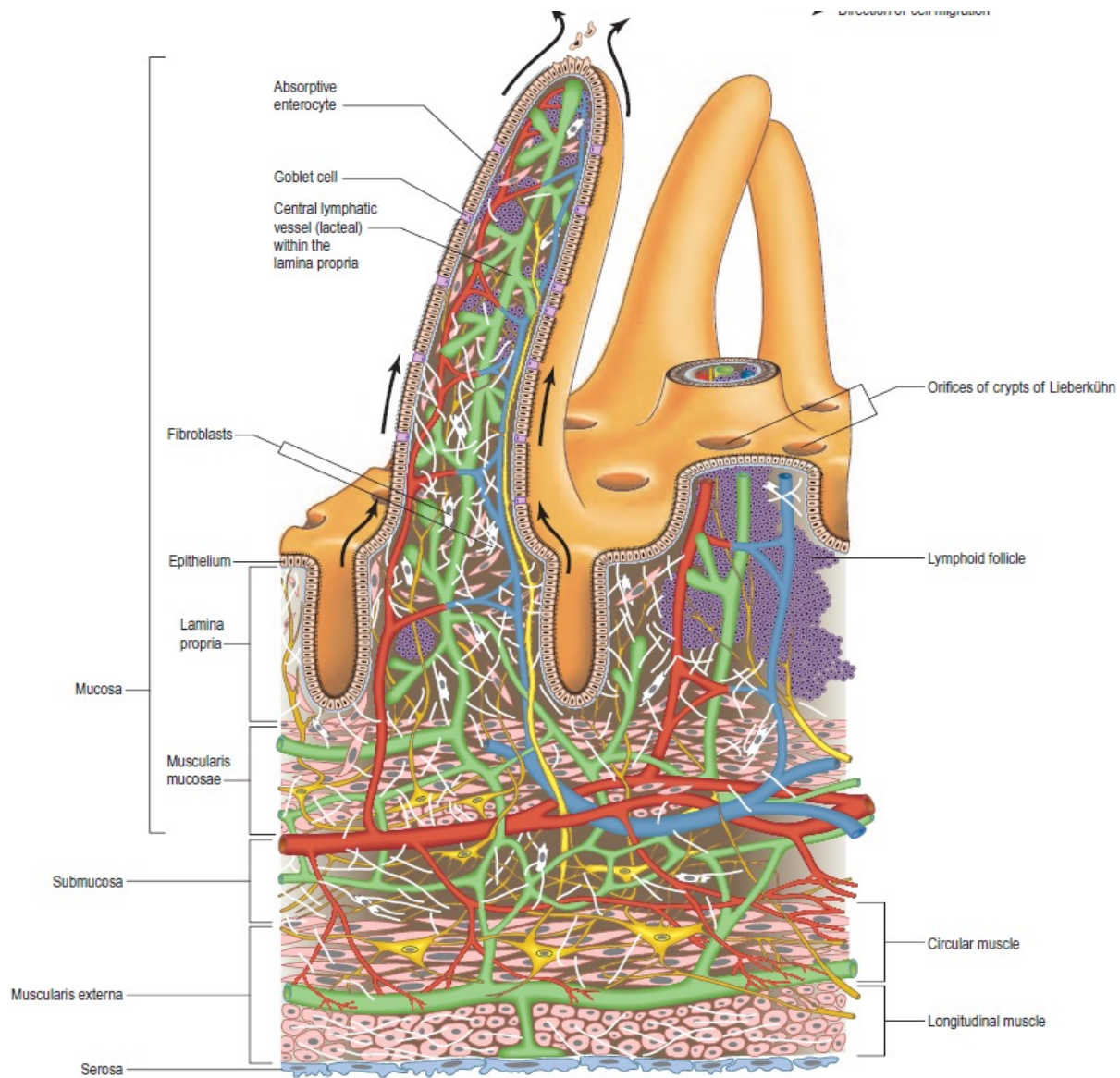
- Right lower
- Less folds
- Folliculi lymph. aggregati
- 3 - 4 arcades
- Aa. rectae 1-2 cm
- single



JEJUNUM A ILEUM



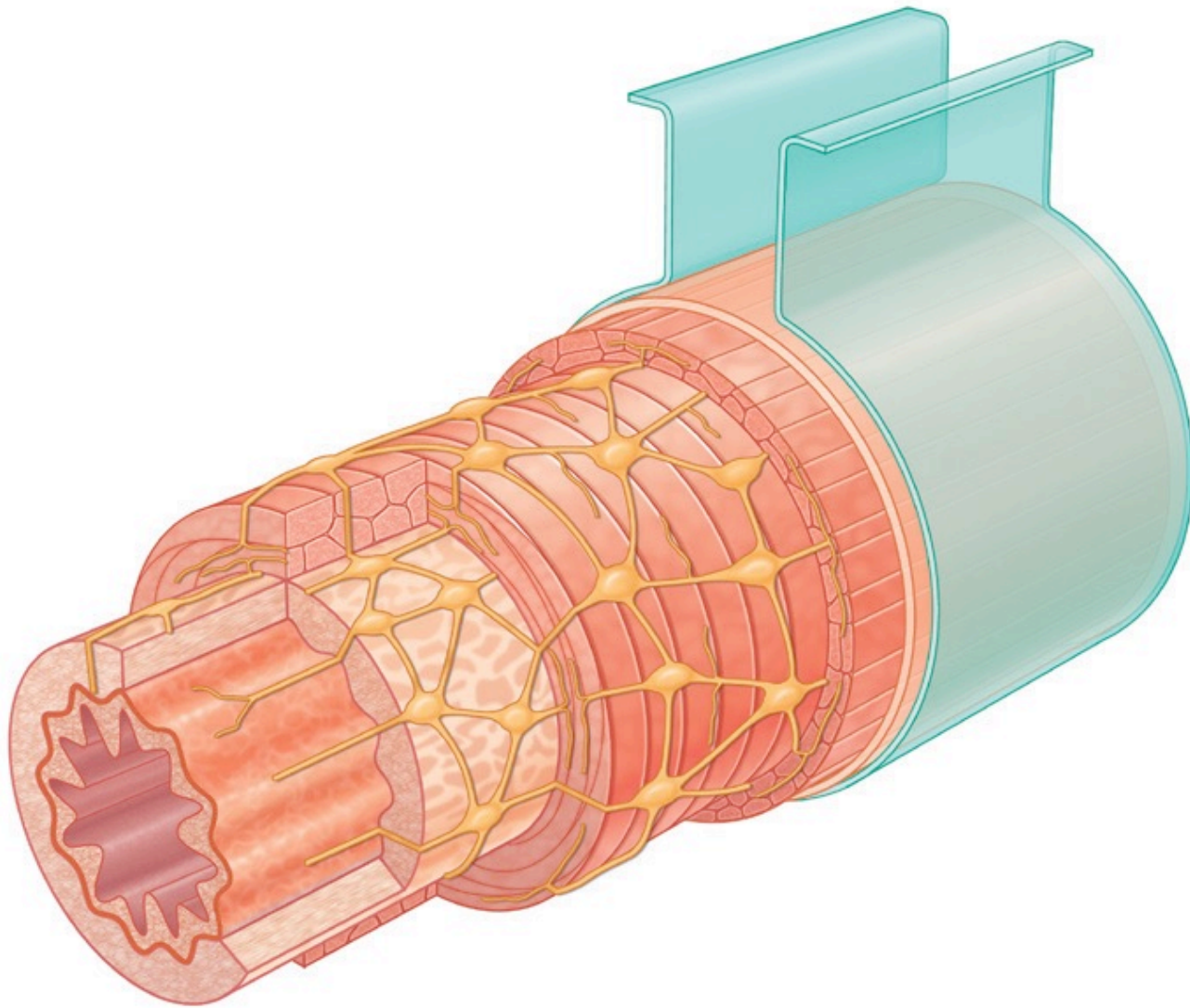
JEJUNUM A ILEUM



- 💧 **Villi intestinales**
- 💧 **plicae circulares Kerckringi**
- 💧 **glandulae Brunner in duodenum**
 - 💧 Alcaline with mucine
- 💧 **Lieberkühn crypts**
- 💧 **Lymphatic tissue**
- 💧 **Tela submucosa**
- 💧 **Tela muscularis**
- 💧 **Serosa**

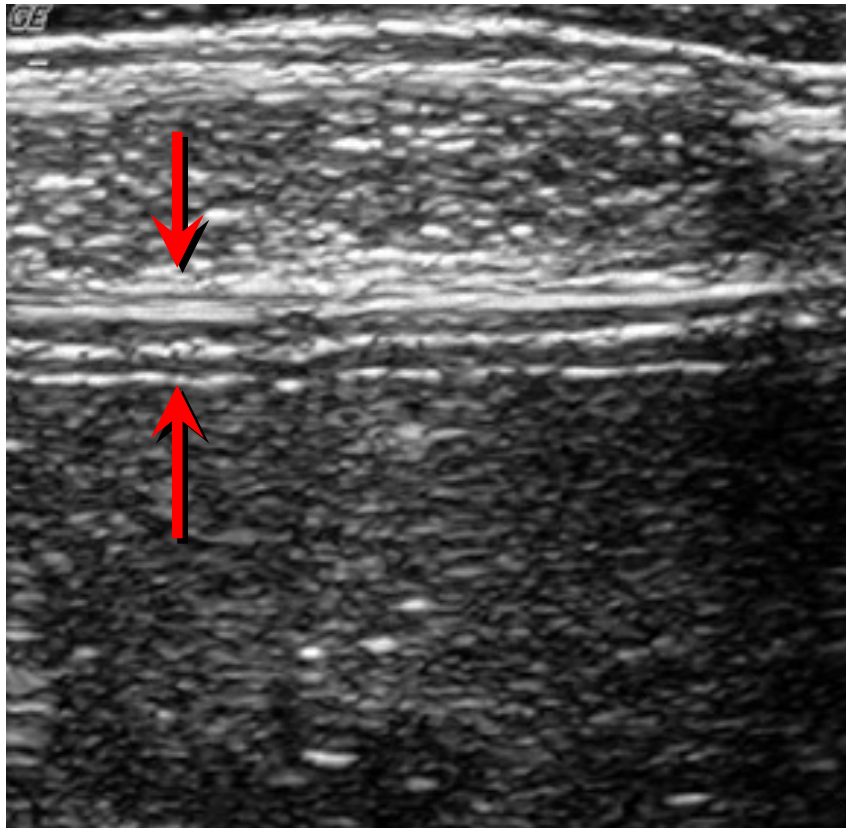
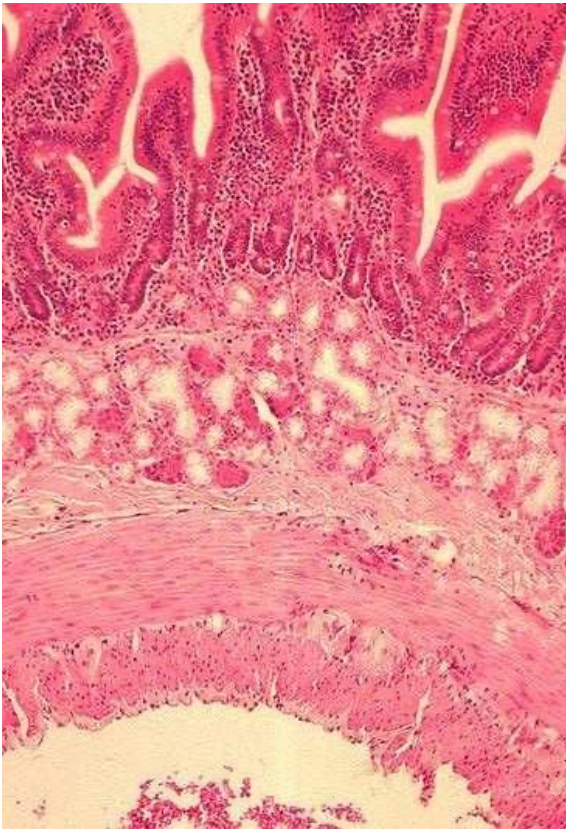
- 💧 **Succus entericus**

STAVBA STĚNY



- ♦ Lamina propria
 - ♦ Plexus periglandularis
- ♦ Muscularis mucosae
- ♦ Tela submucosa
 - ♦ Plexus submucosus Meisneri
- ♦ Stratum circulare
 - ♦ Plexus intramuscularis circularis
- ♦ Thin layer of loose connective t.
 - ♦ Plexus myentericus Auerbachi
- ♦ Stratum longitudinale
 - ♦ Plexus intramuscularis longitudinalis
 - ♦ Plexus subserosus
- ♦ Serosa

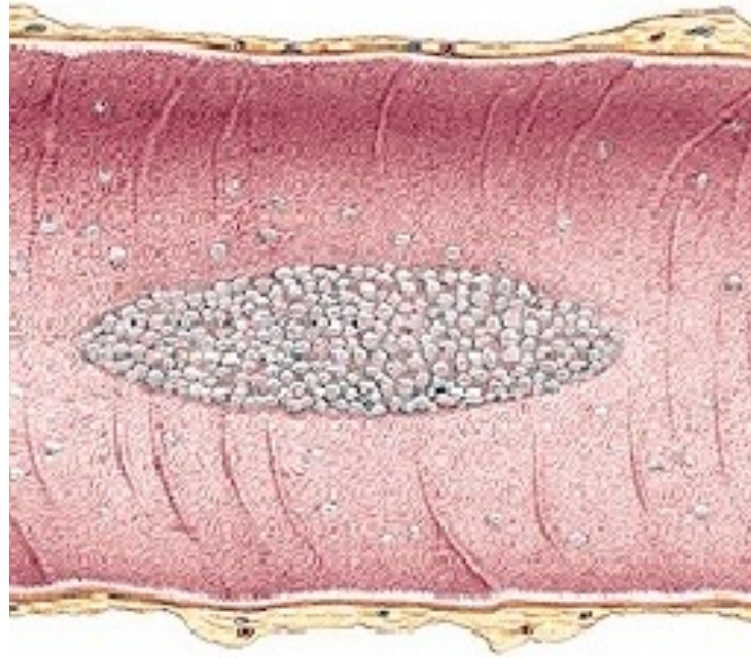
THE WALL



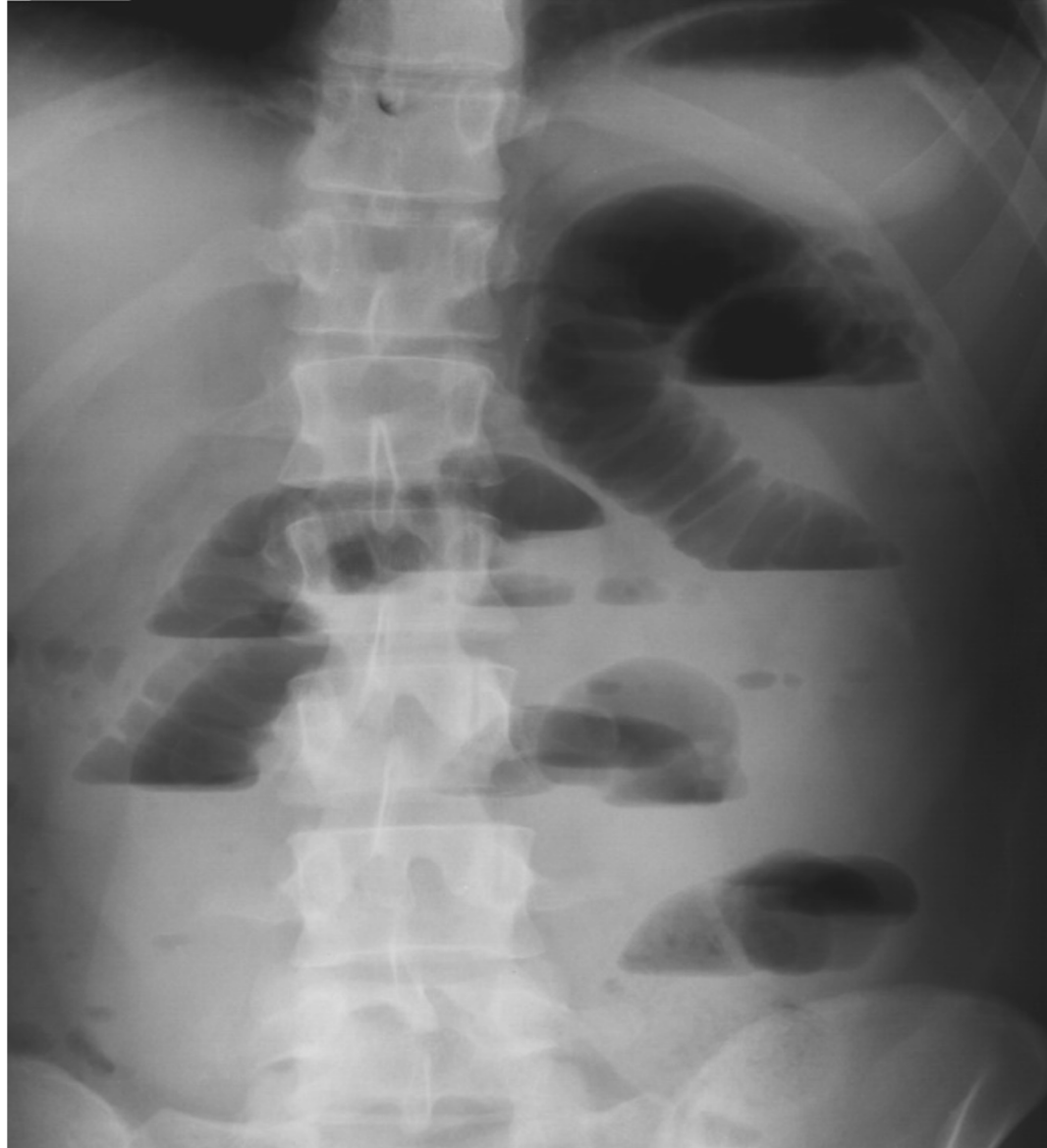
INTESTINUM TENUE

🔥 Folliculi lymphatici intestinales solitarii - jejunum and ileum

🔥 Folliculi lymphatici intestinales aggregati - Payer's patches - ileum



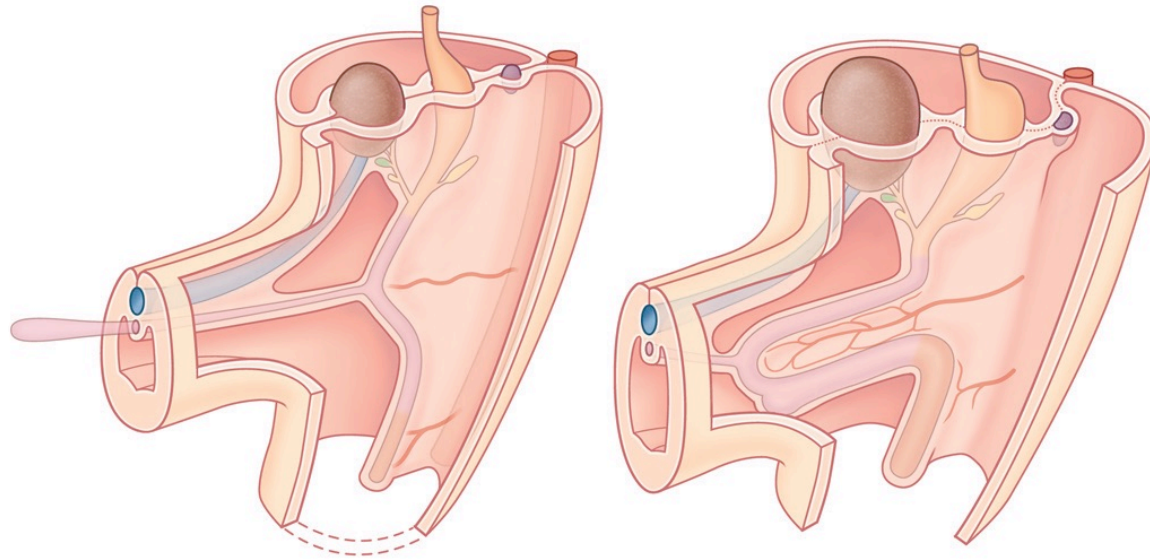
FOLLICULI LYMPHATICI



ILEUS

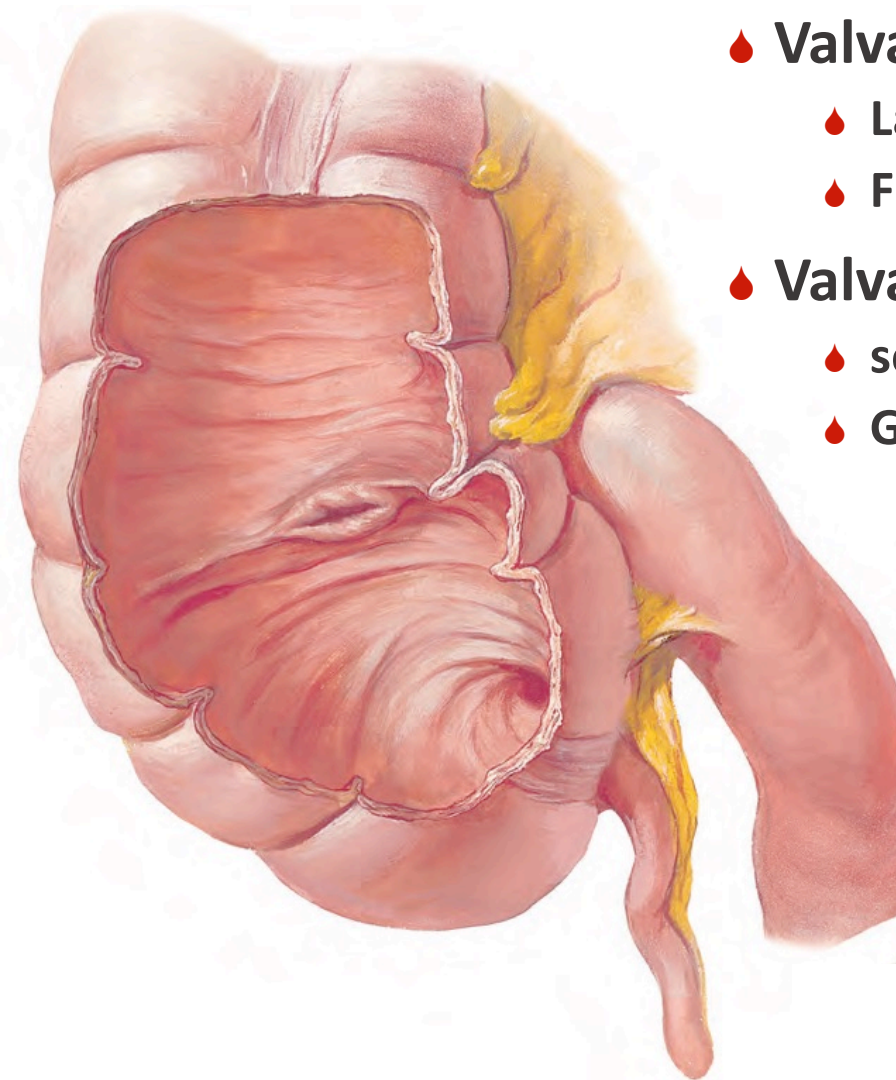


ISCHAEMIA MESENTERIALIS

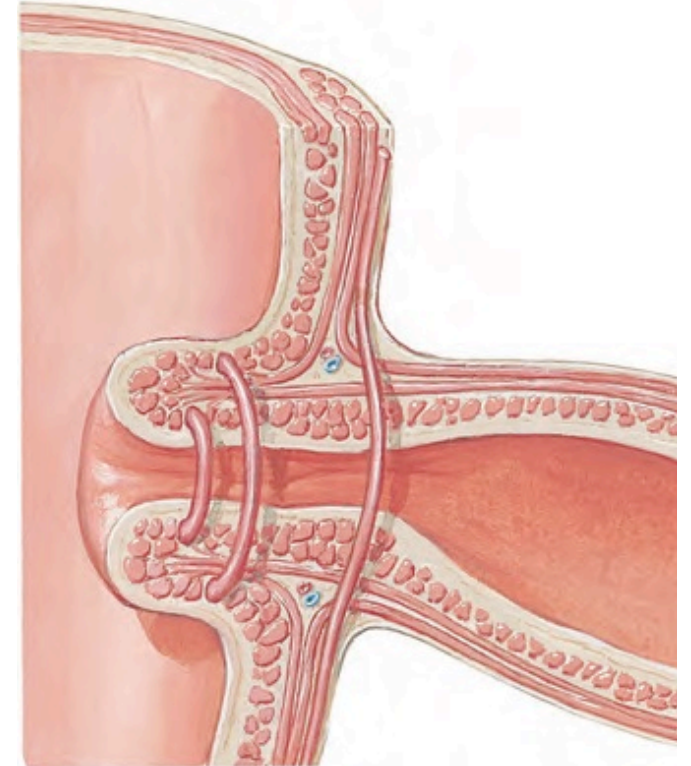
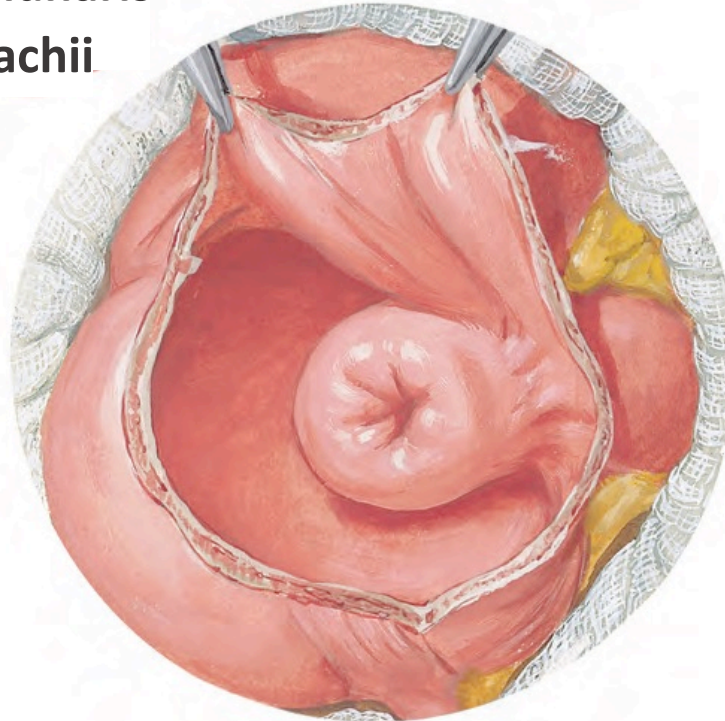


- ♦ **Diverticulum Meckeli**
- ♦ **On ileum**
- ♦ **Ventricula type of mucosa**
 - ♦ ulcers
 - ♦ bleeding
- ♦ **80 cm before opening of ileum to caecum**
- ♦ **Ductus omphaloentericus**
 - ♦ *Bridge*
 - ♦ *Cyst*
 - ♦ *Fistula*
 - ♦ *Diverticulum*

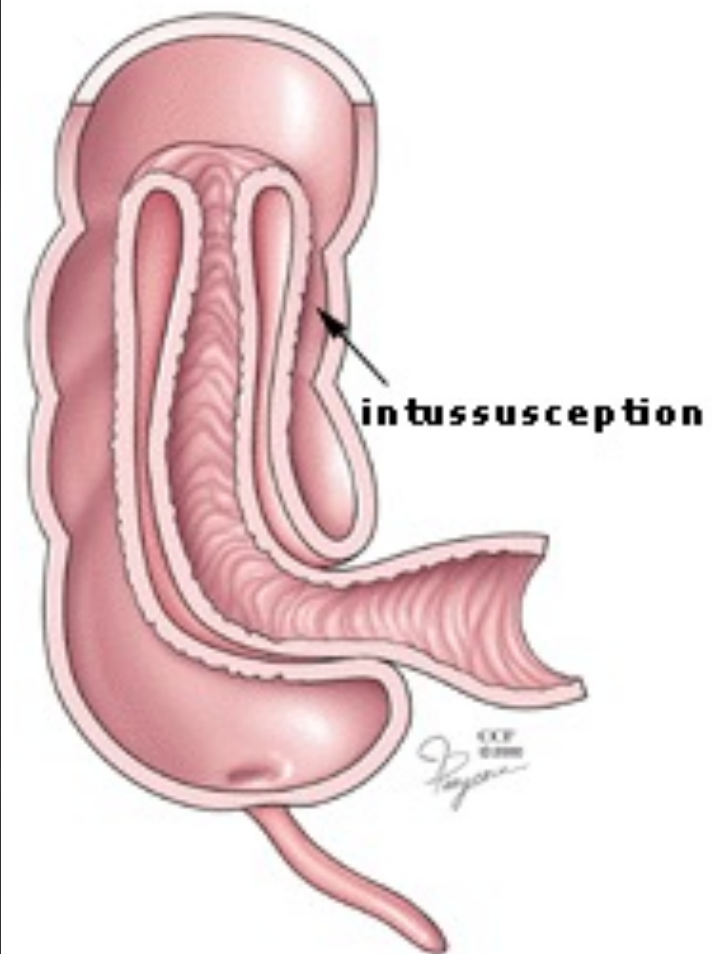
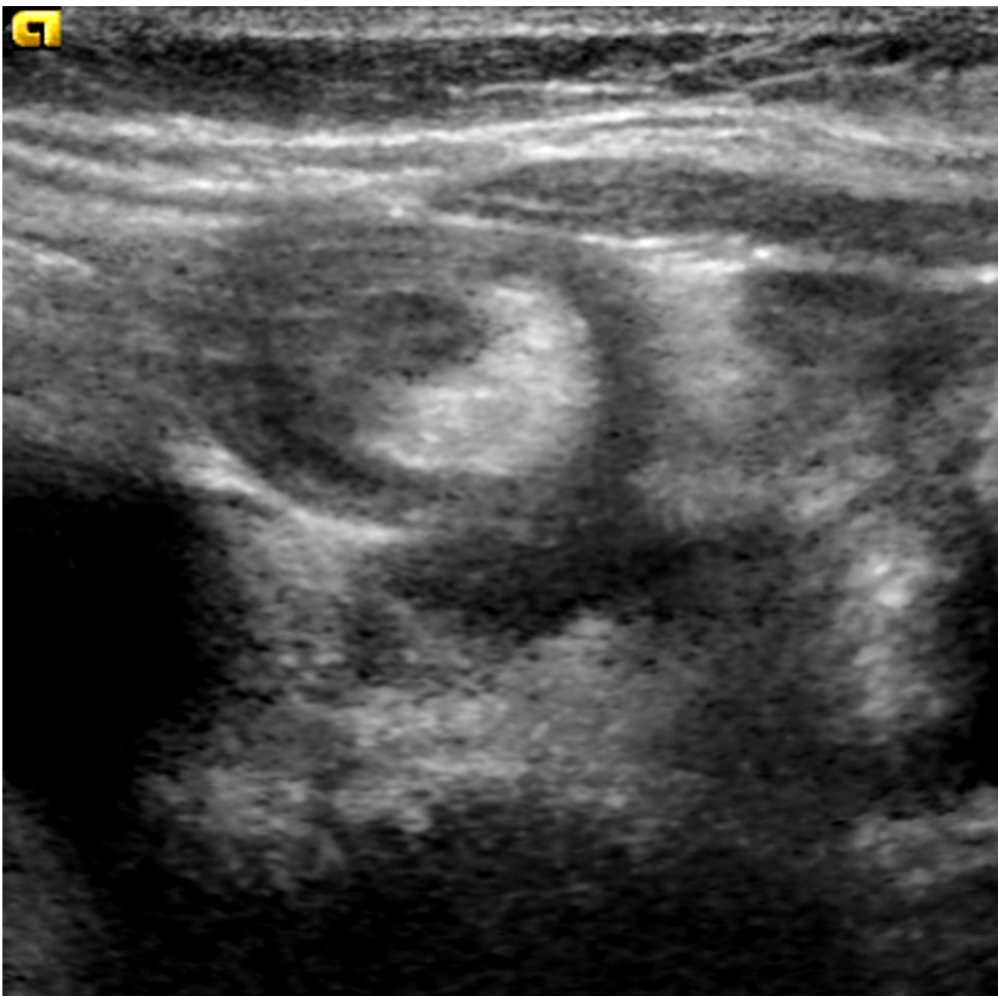
DIVERTICULUM MECKELI



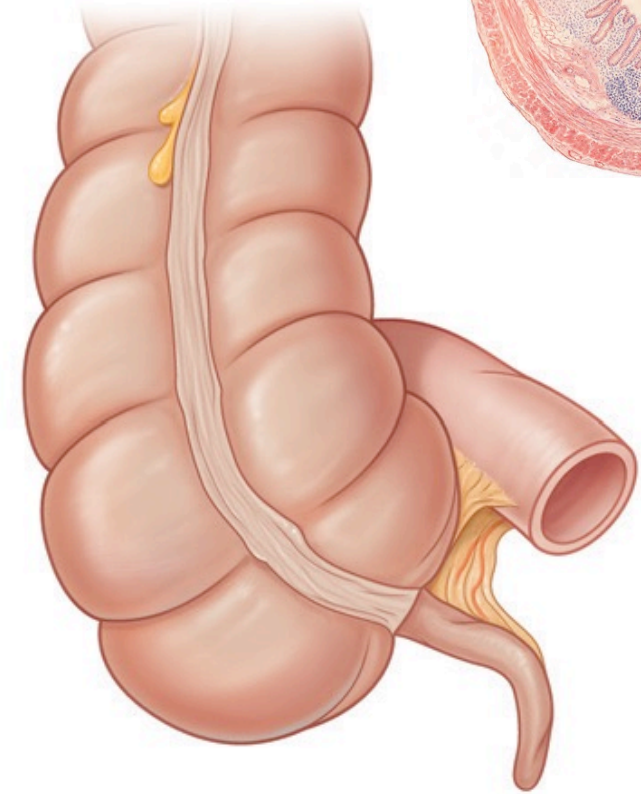
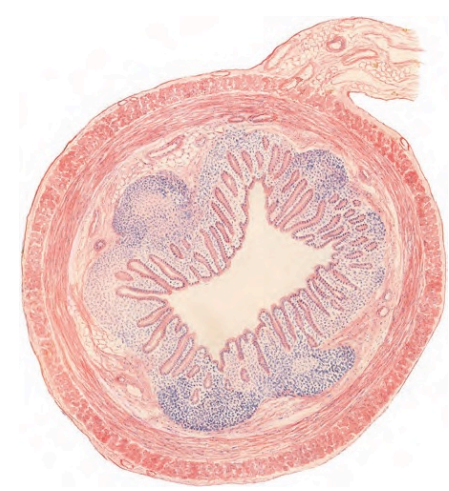
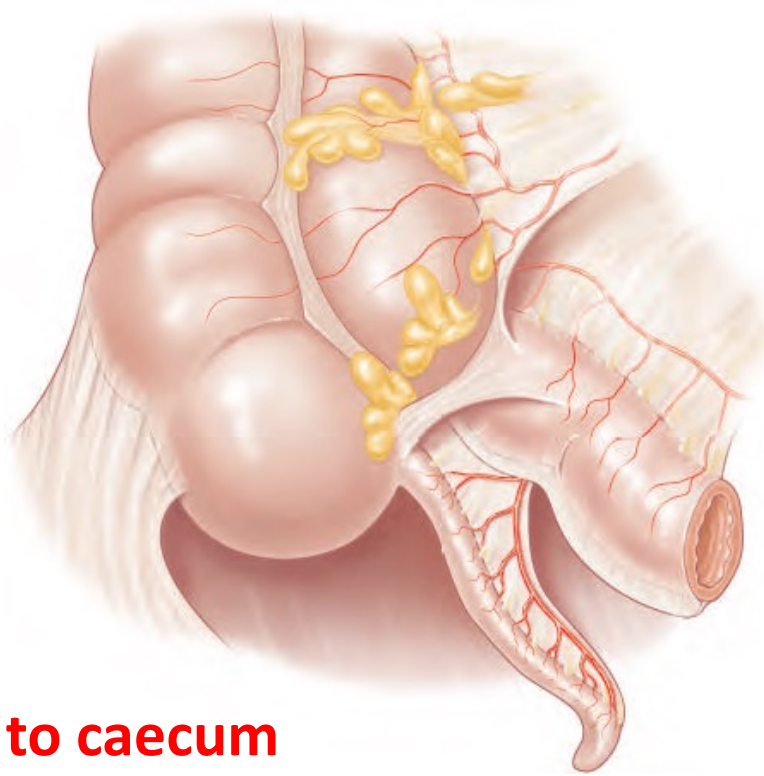
- ♦ **Valva ileocaecalis**
 - ♦ Labium superius, labium inferius
 - ♦ Frenulum labiorum
- ♦ **Valva appendicis vermiformis**
 - ♦ semilunaris
 - ♦ Gerlachii



REGIO ILEOCAECALIS



INTUSSUSCEPTION/INVAGINACE

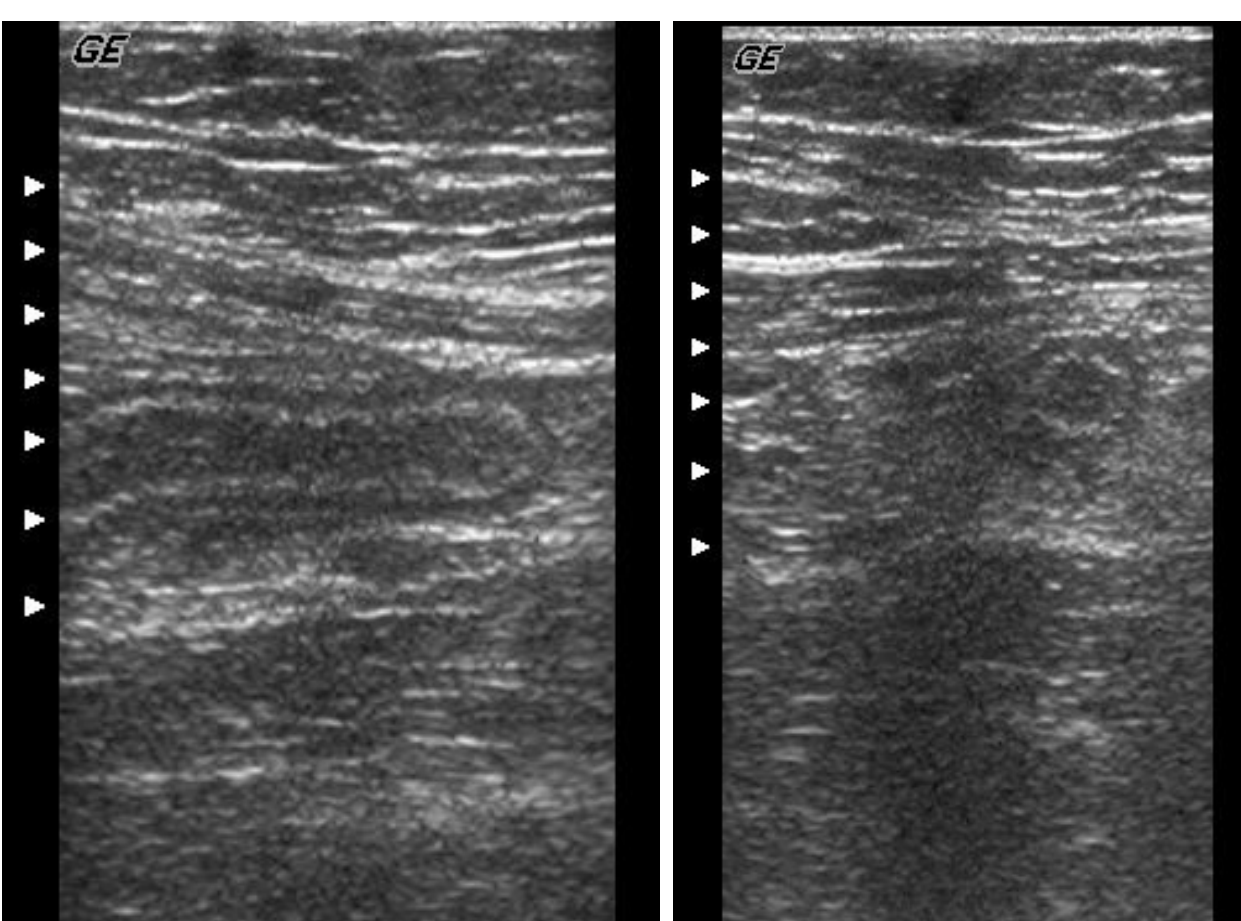


- ◆ Appendix vermicularis
- ◆ **McBurney's point - opening to caecum**
 - ◆ an Monro line umbilicus/spina iliaca anterior superior
 - ◆ 6-7 cm apart from spina
- ◆ **Lanz's point - in pelvic position**
 - ◆ Between right and middle third

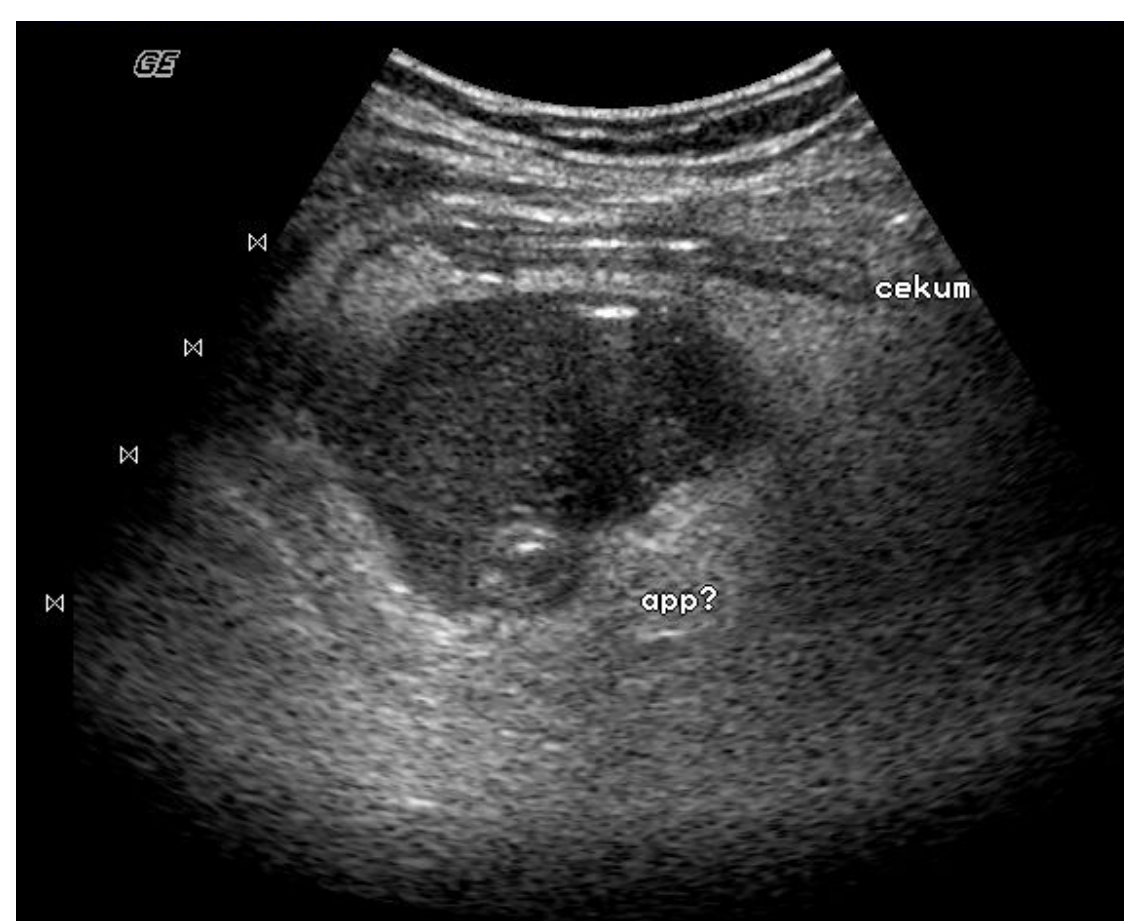
APPENDIX VERMIFORMIS



APPENDIX VERMIFORMIS



Appendicitis phlegmonosa



Abscessus periappendicalis

APPENDICITIS ACUTA

- **Taeniae converge**

- **Positiones**

 - *Pelvica*

 - *Paracaecalis*

 - *Subcaecalis*

 - *Retrocaecalis*

 - *Preilealis*

 - *Retroilealis/postilealis*

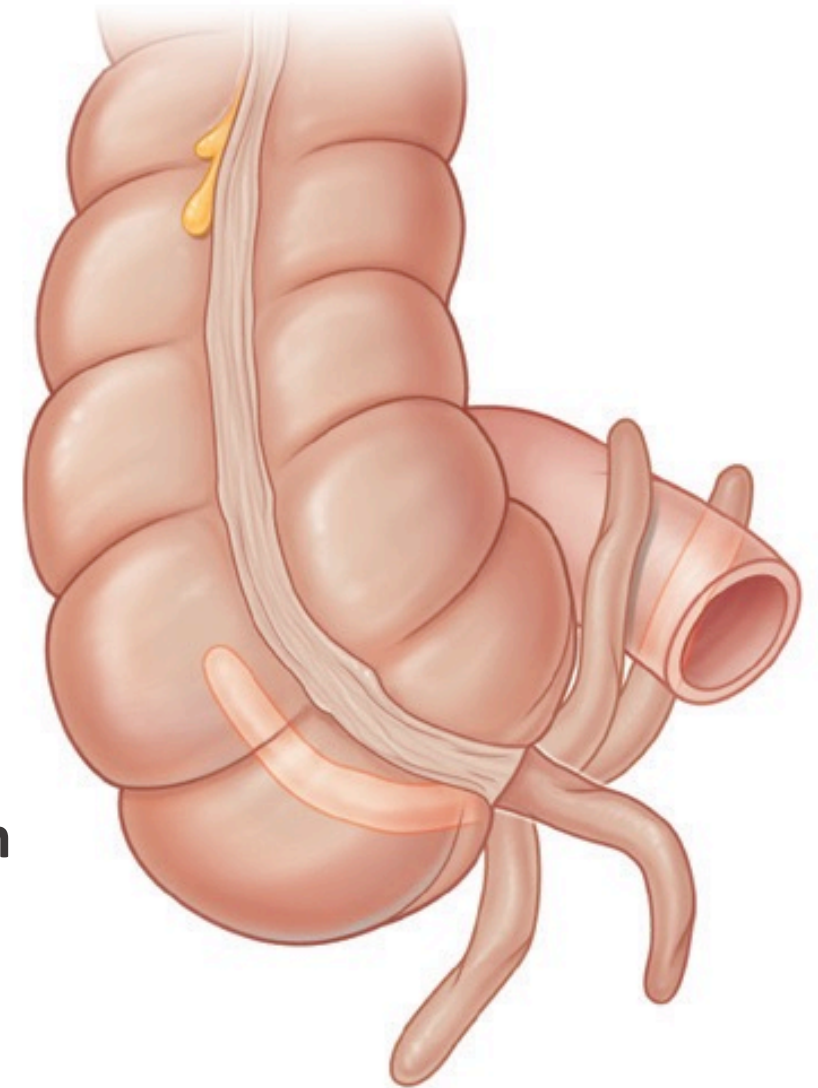
 - *Subhepatica*

 - *Sinistra*

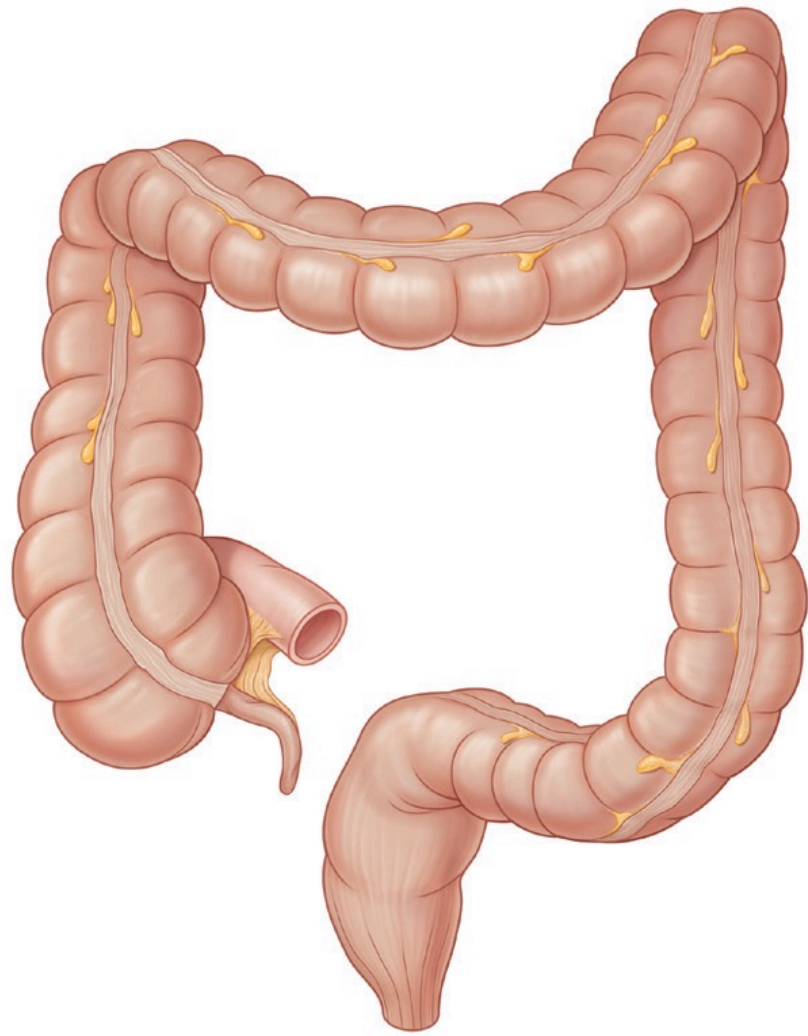
- **„tonsilla“ abdominalis**

- **Lig. appendiculoovaricum**

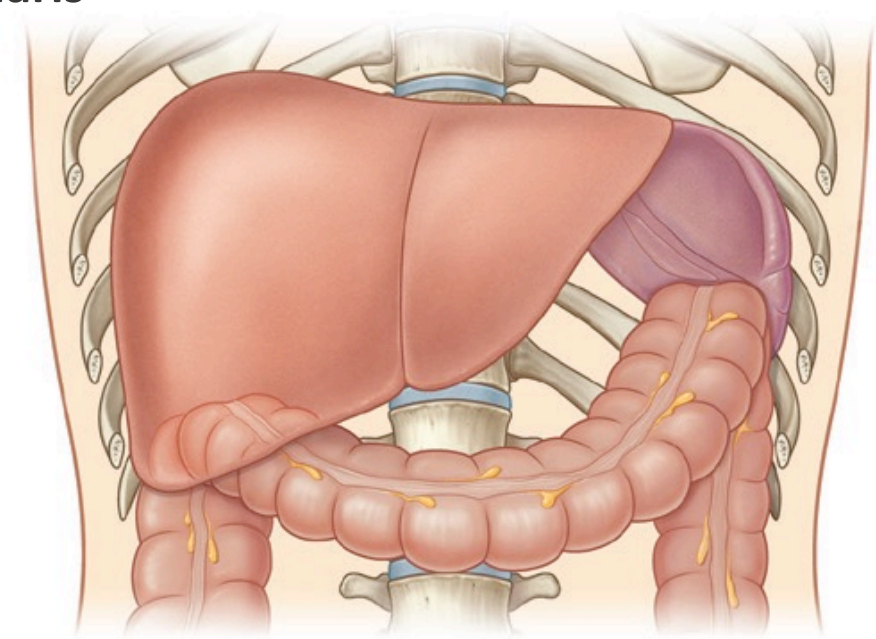
 - **Lymphatic connections**



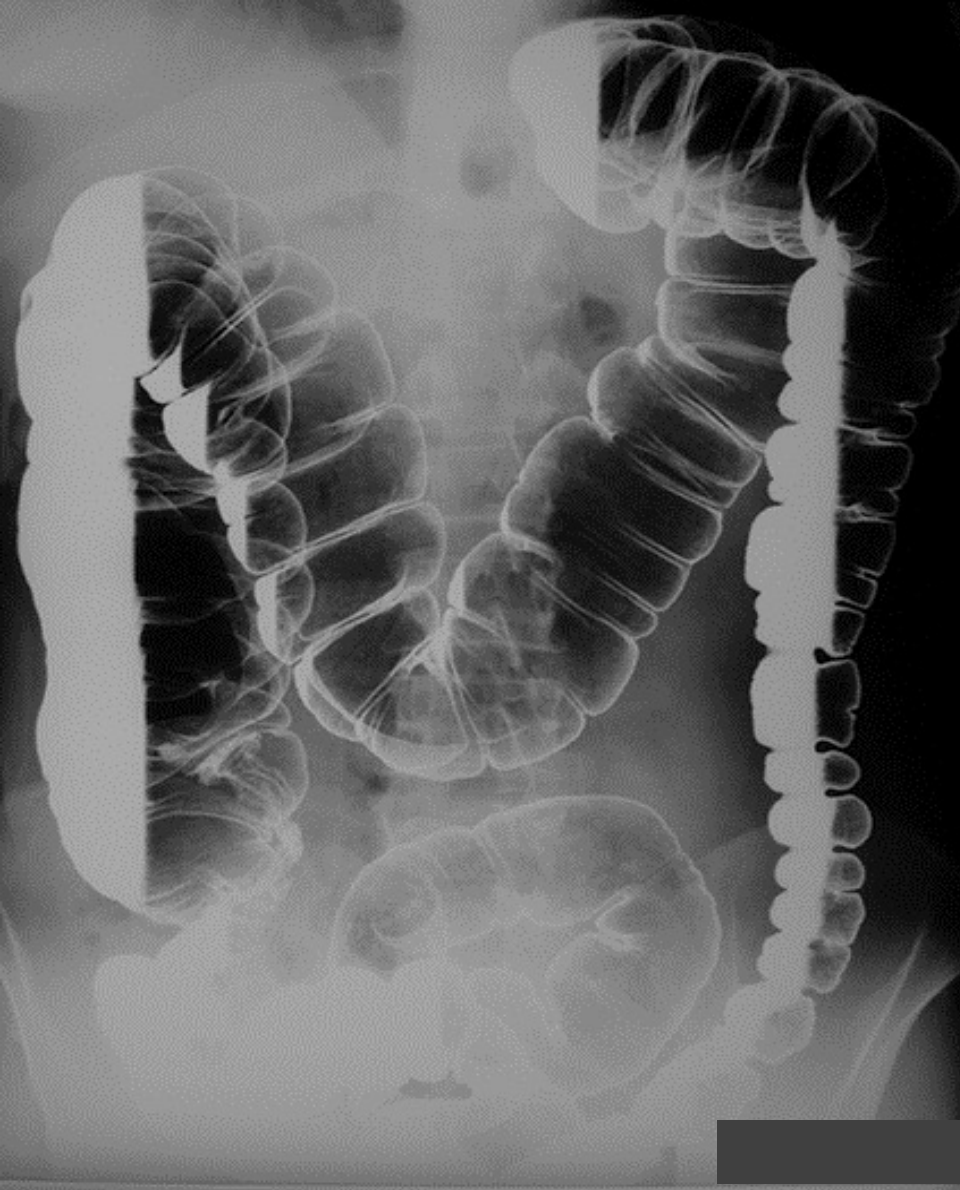
APPENDIX VERMIFORMIS



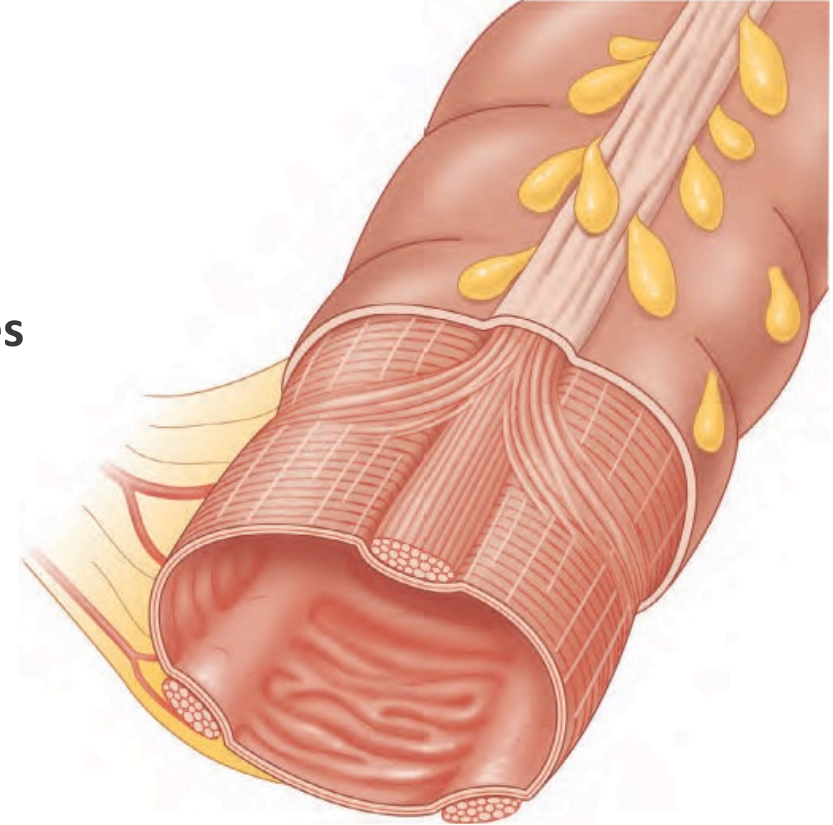
- ♦ **Caecum**
 - ♦ Appendix vermicularis
- ♦ **Colon ascendens**
- ♦ **Flexura dextra**
 - ♦ hepatica
- ♦ **Colon transversum**
- ♦ **Flexura sinistra**
 - ♦ lienalis
- ♦ **Colon descendens**
- ♦ **Colon sigmoideum**
- ♦ **Rectum**
- ♦



INTESTINUM CRASSUM

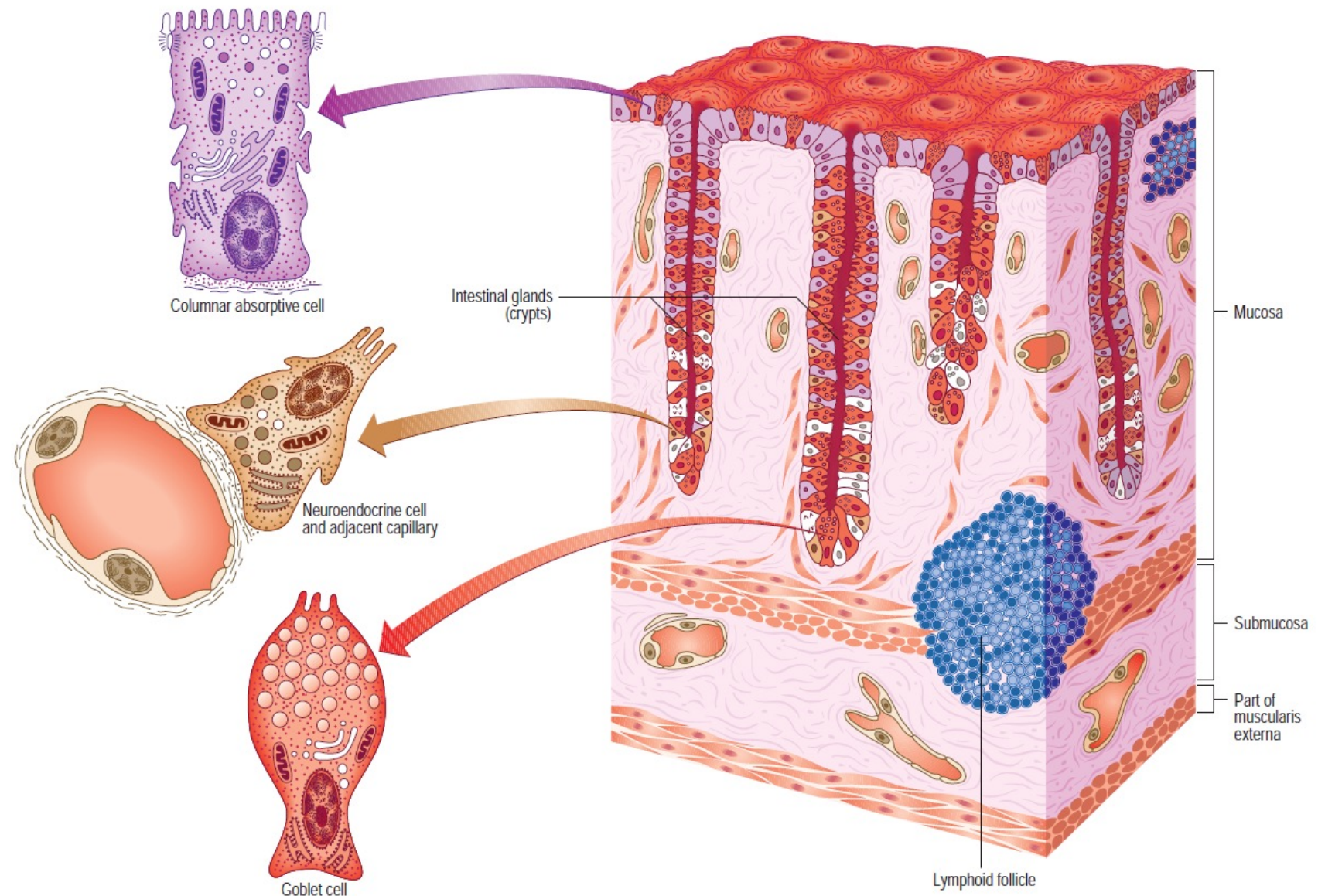


- **Haustra**
- **Taenia thickened longitudinal muscle**
- **Taeniae lacking at the appendix and rectum**
 - **Taenia libera**
 - **Taenia mesocolica**
 - **Taenia omentalis**
- **Appendices epiploicae**
 - **Fatty tissue appendages**

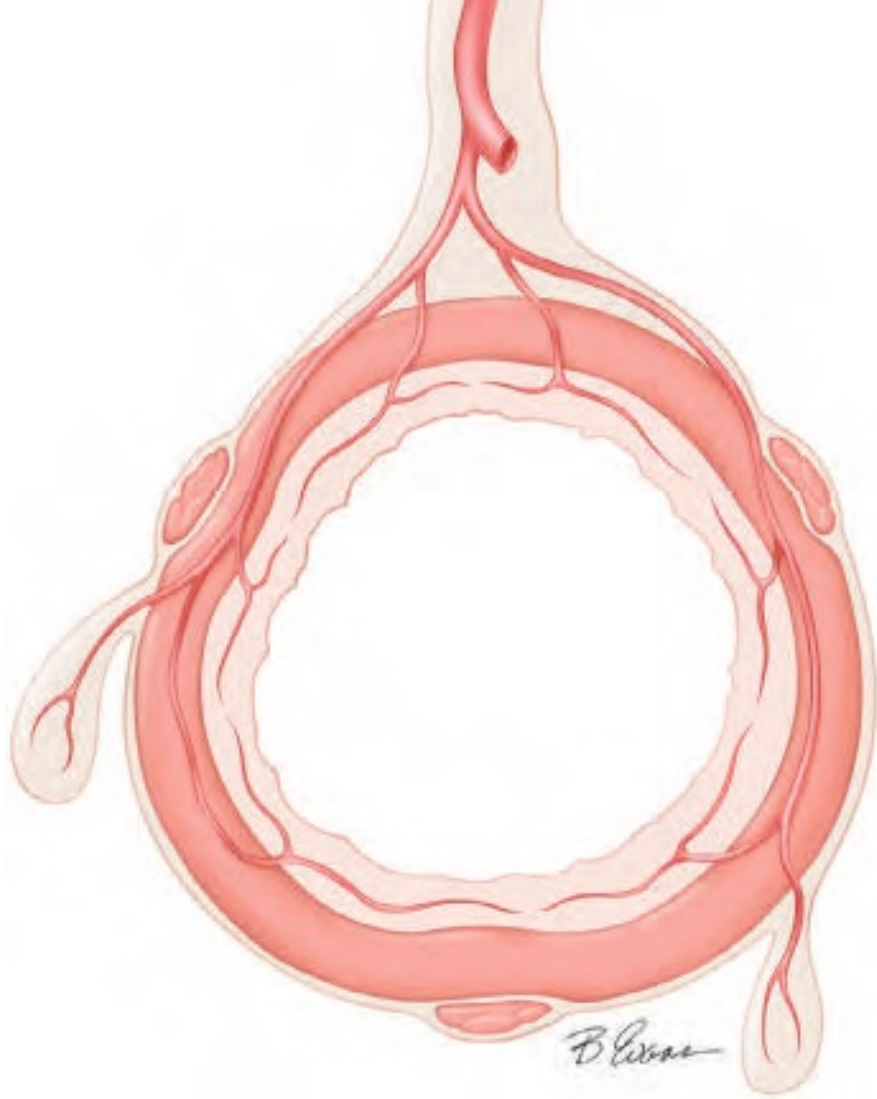


INTESTINUM CRASSUM

- ♦ mucosa
- ♦ No vili
- ♦ Plicae semilunares coli
 - ♦ (1/3 of circumference)
- ♦ Glandulae Lieberkühni
- ♦ Goblet cells
 - ♦ mucus
- ♦ Tela submucosa
- ♦ Tela muscularis
 - ♦ Circularis
 - ♦ Longitudinalis - taeniae



INTESTINUM CRASSUM



- **Taenia**

- Thickening of longitudinal muscles

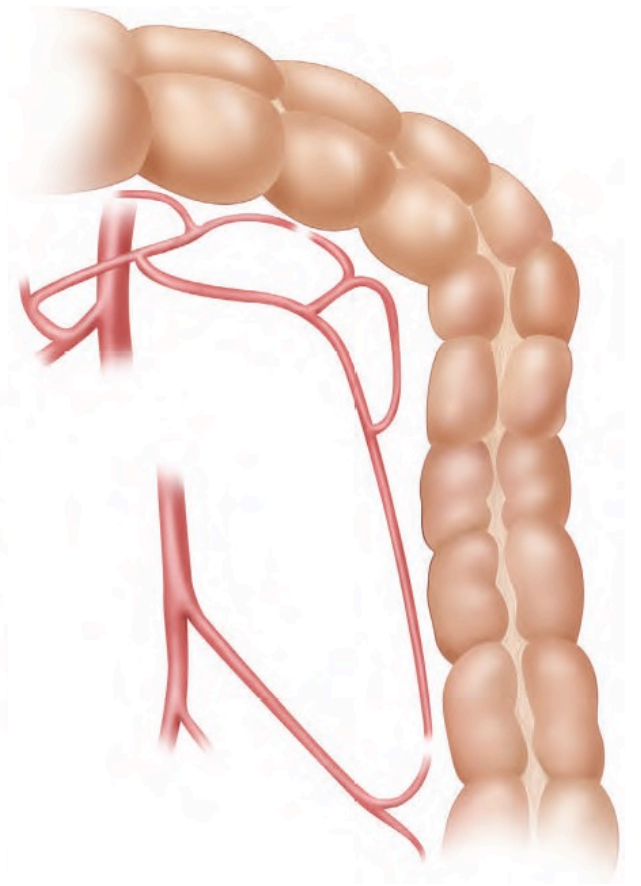
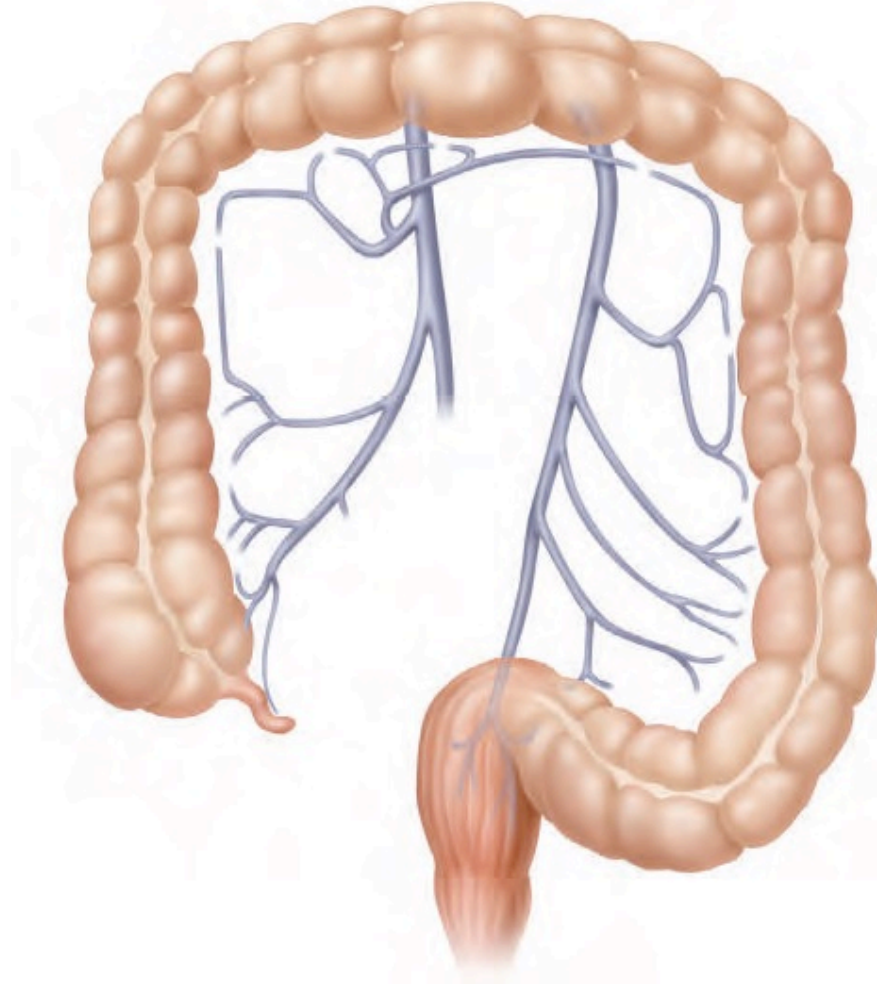
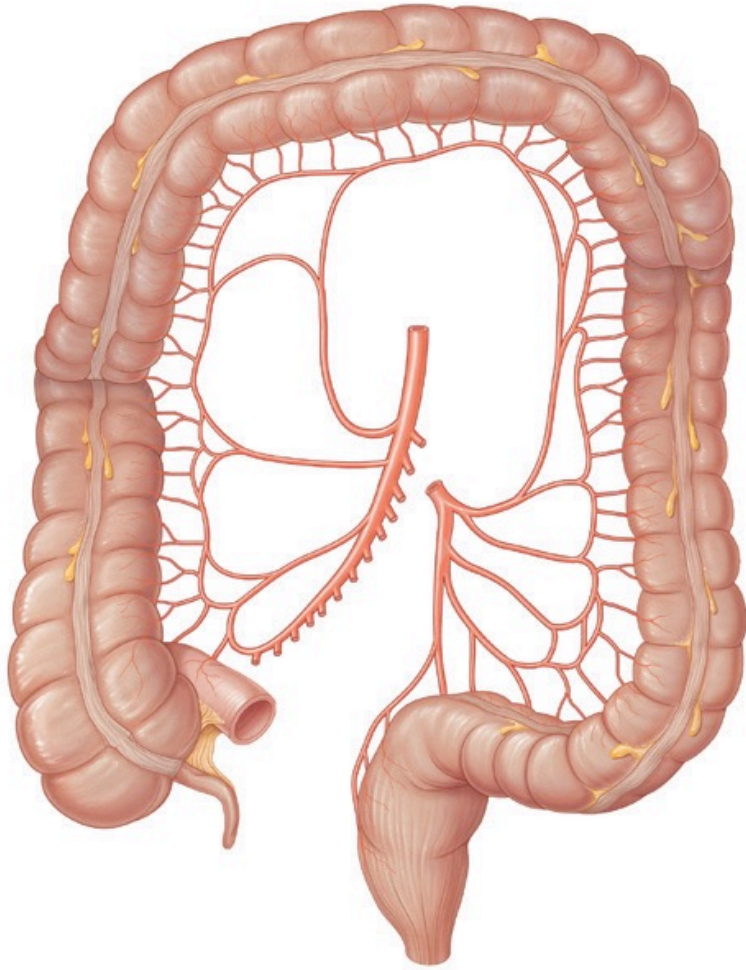
- **Taeniae**



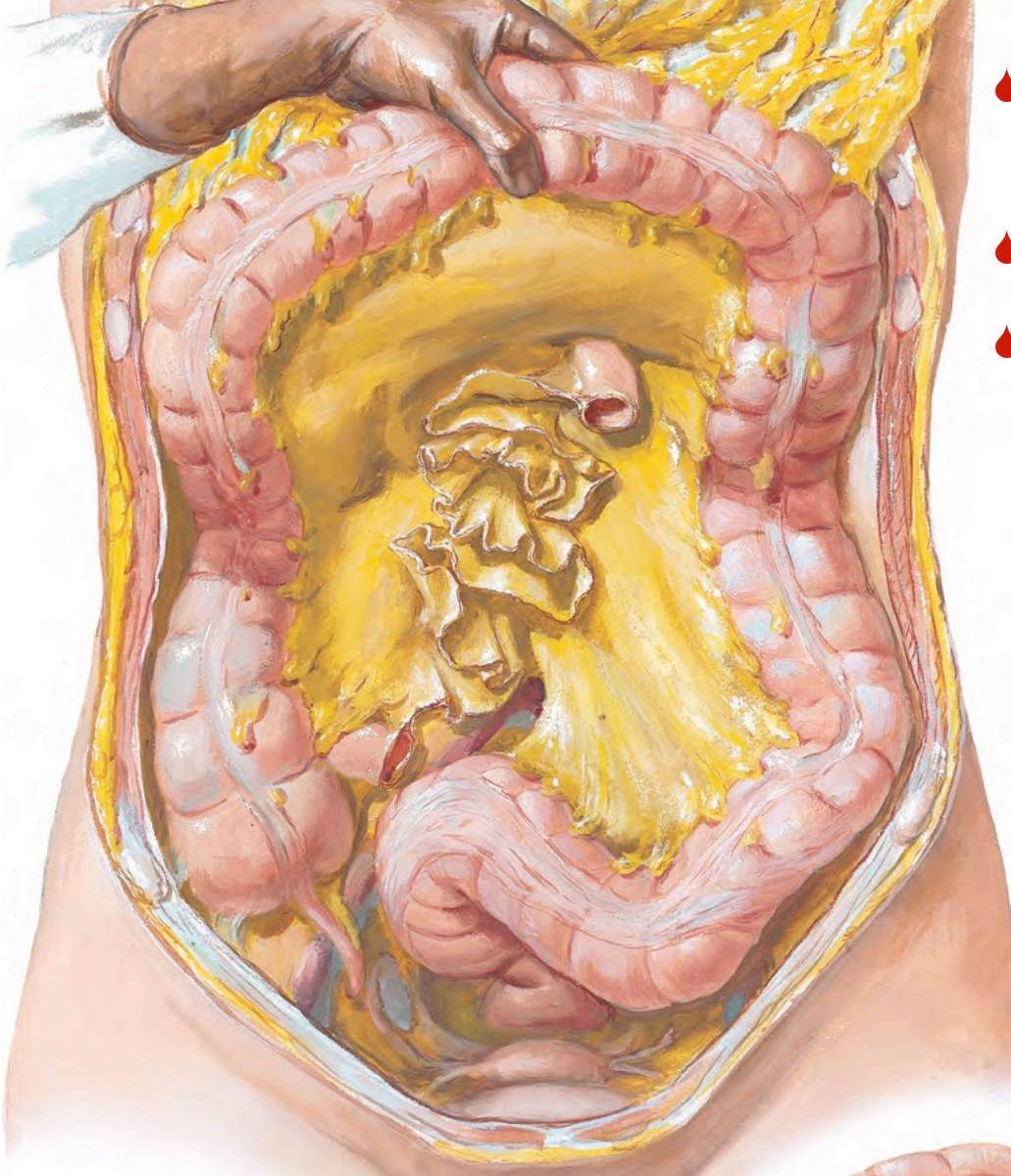
- Taenia libera
 - Taenia mesocolica
 - Taenia omentalis

TAENIAE

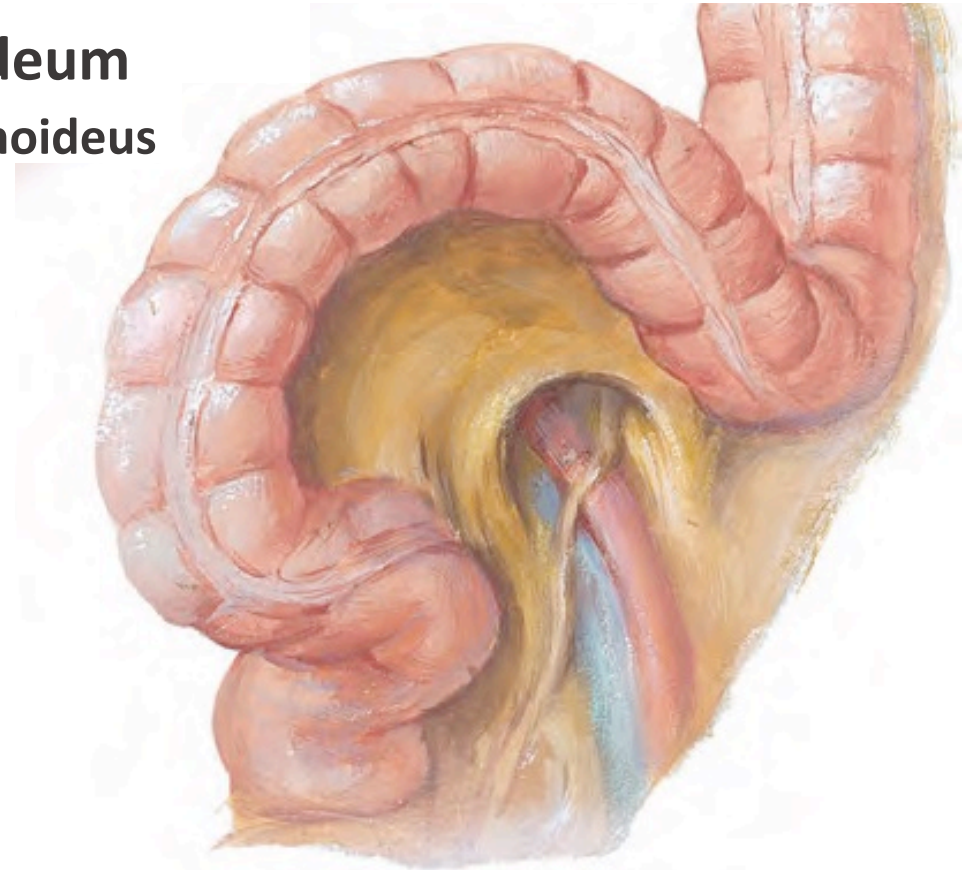
♦ Anastomosis (arcus) Riolani



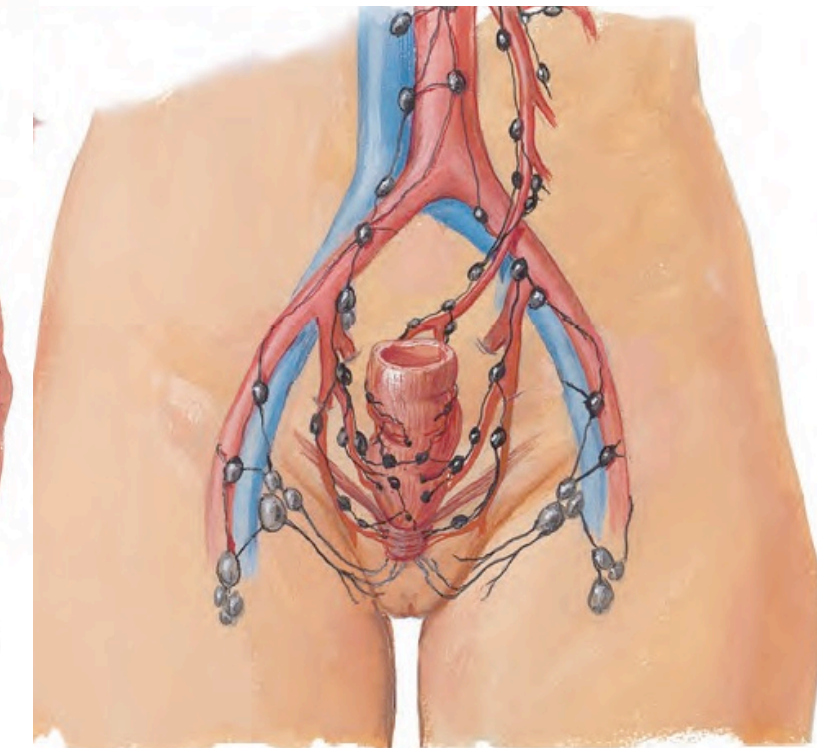
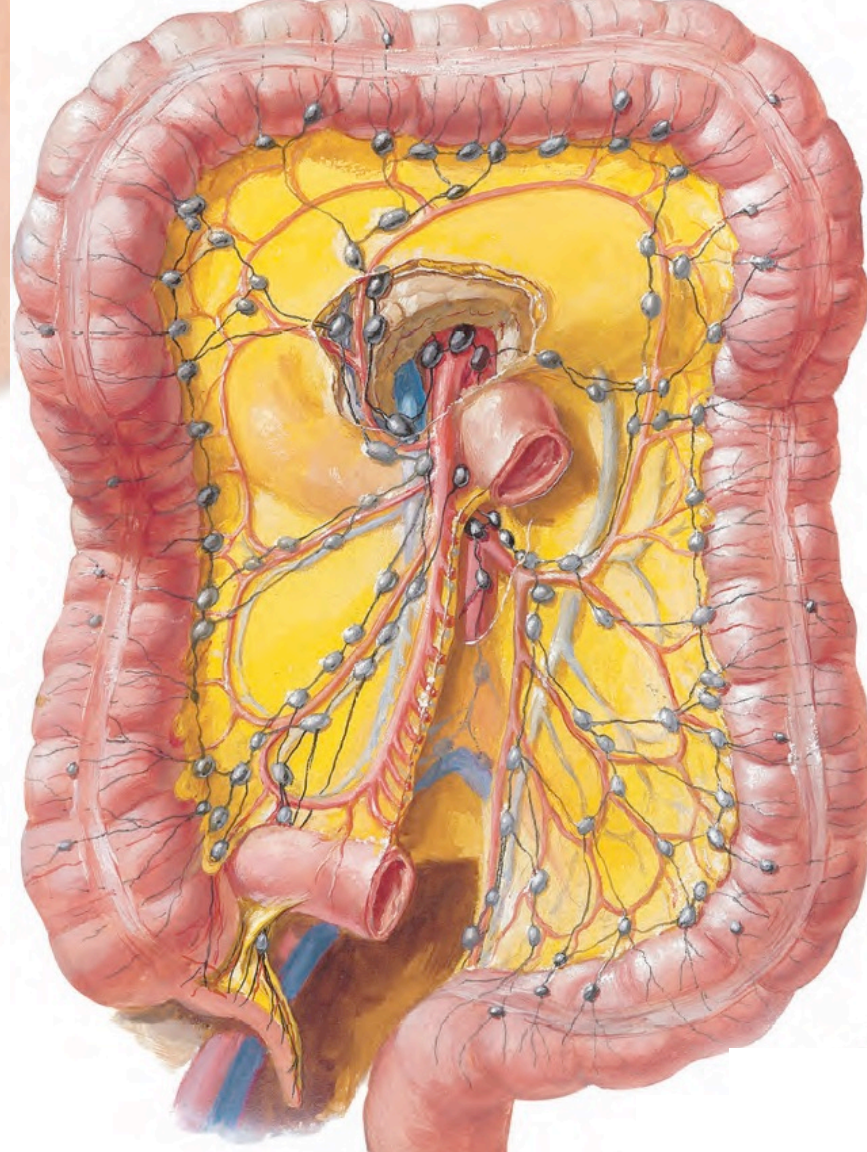
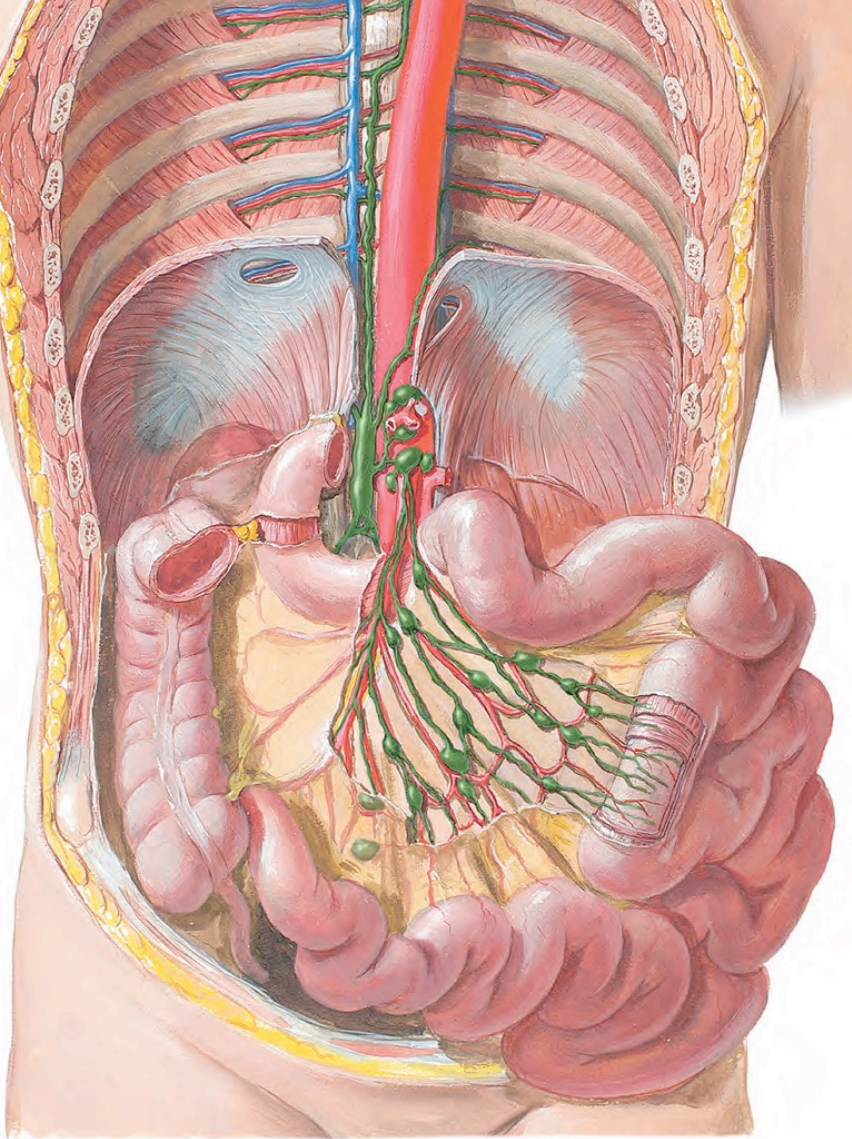
VASA INTESTINI CRASSI



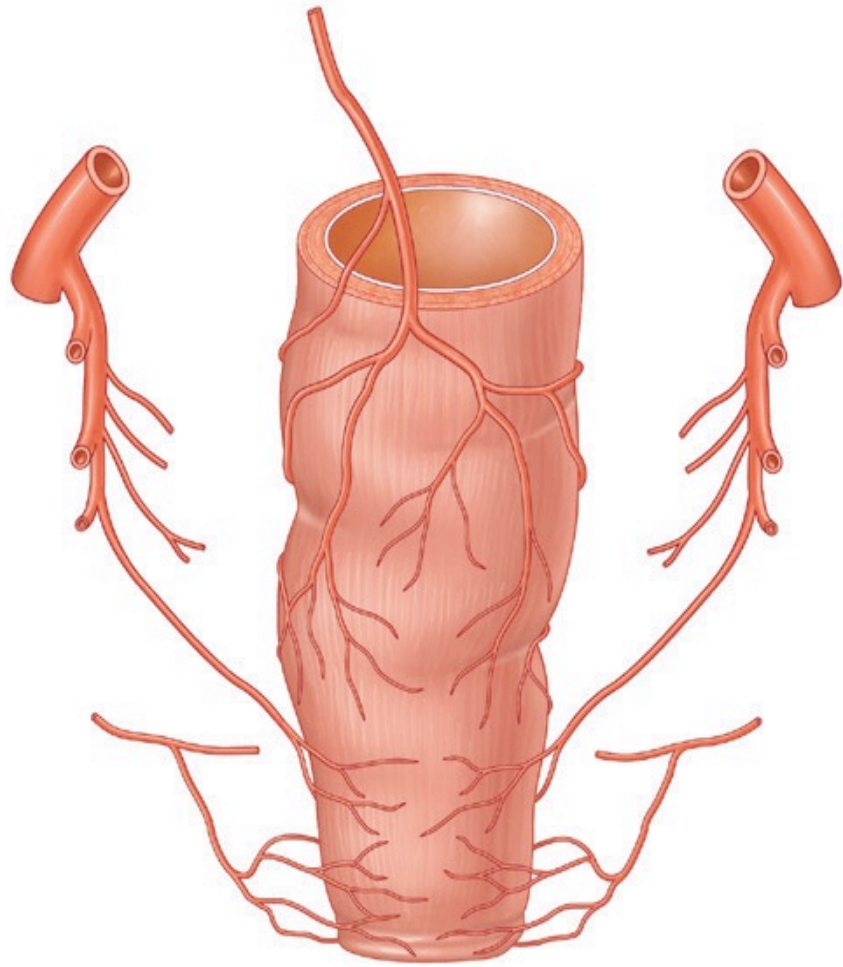
- ♦ **Mesocaecum**
 - ♦ Mesoappendix
- ♦ **Mesocolon transversum**
- ♦ **Mesocolon sigmoideum**
 - ♦ Recessus intersigmoideus



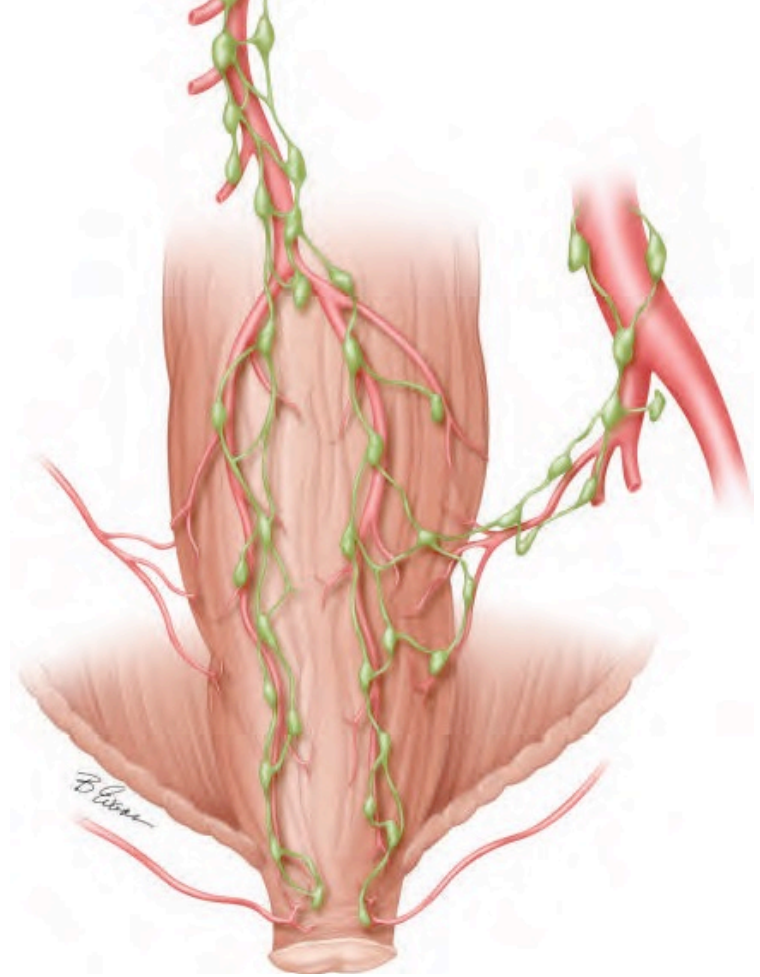
MESOCOLON



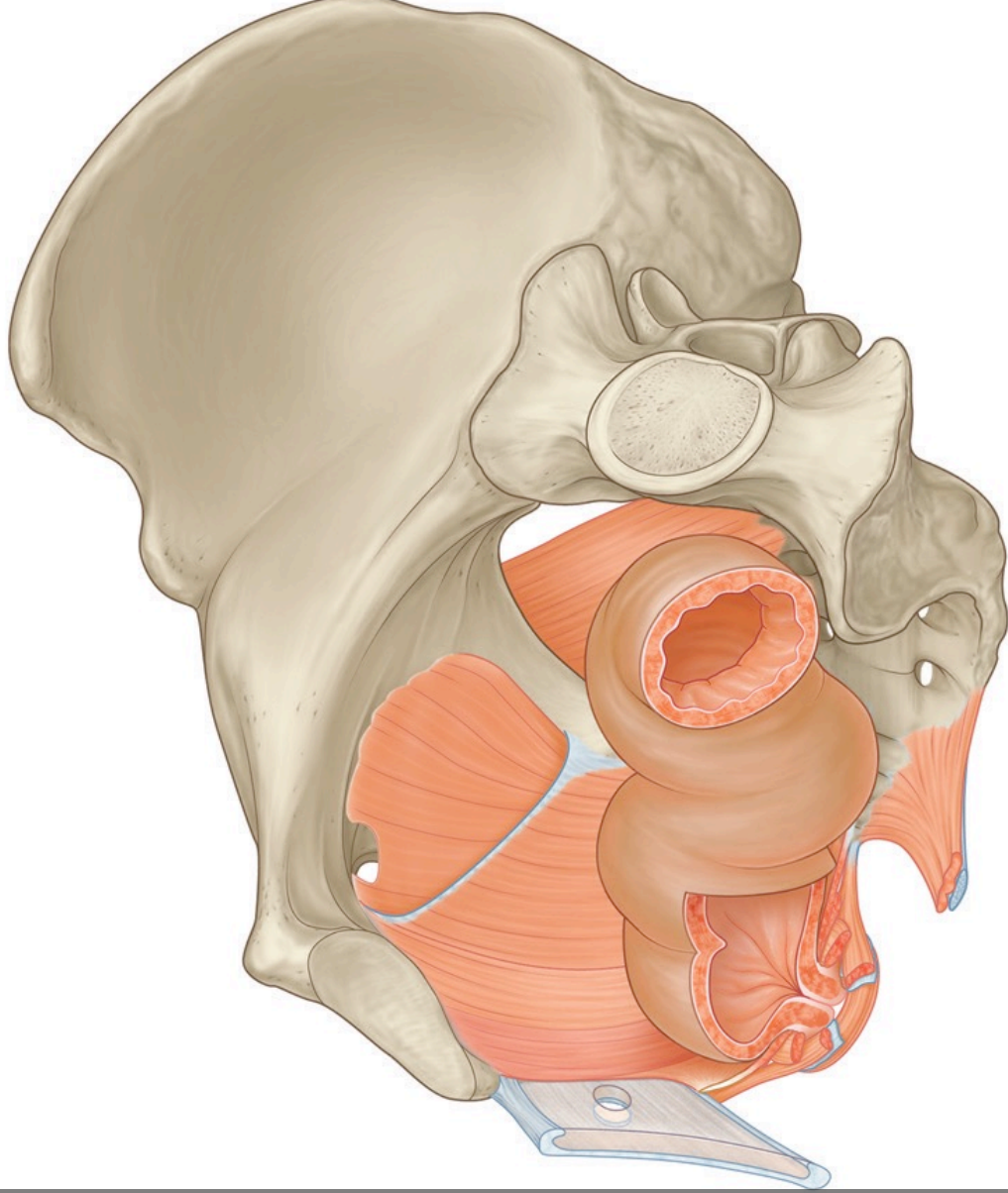
NODI LYMPHATICI INTESTINI



- ♦ **A. rectalis superior**
- ♦ *A. mesenterica inferior*
- ♦ **Nn. rectales superiores**
- ♦ **A. rectalis media**
- ♦ *A. iliaca interna*
- ♦ **Nn. iliaci interni**
- ♦ **A. rectalis inferior**
- ♦ *A. pudenda interna*
- ♦ *A. iliaca interna*
- ♦ **Nn. inguinales**

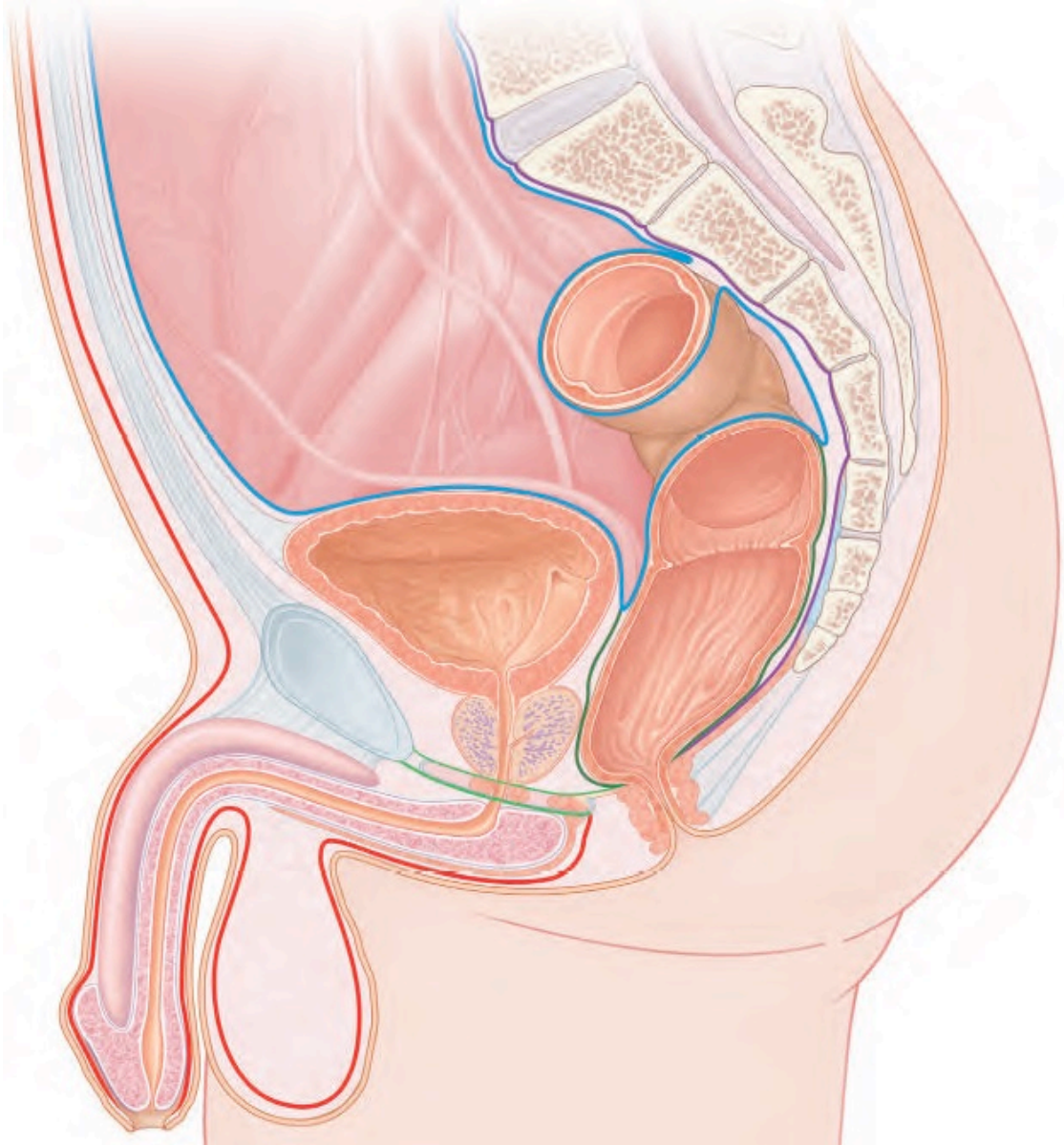


VASA ET NODI LYPHATICI RECTI



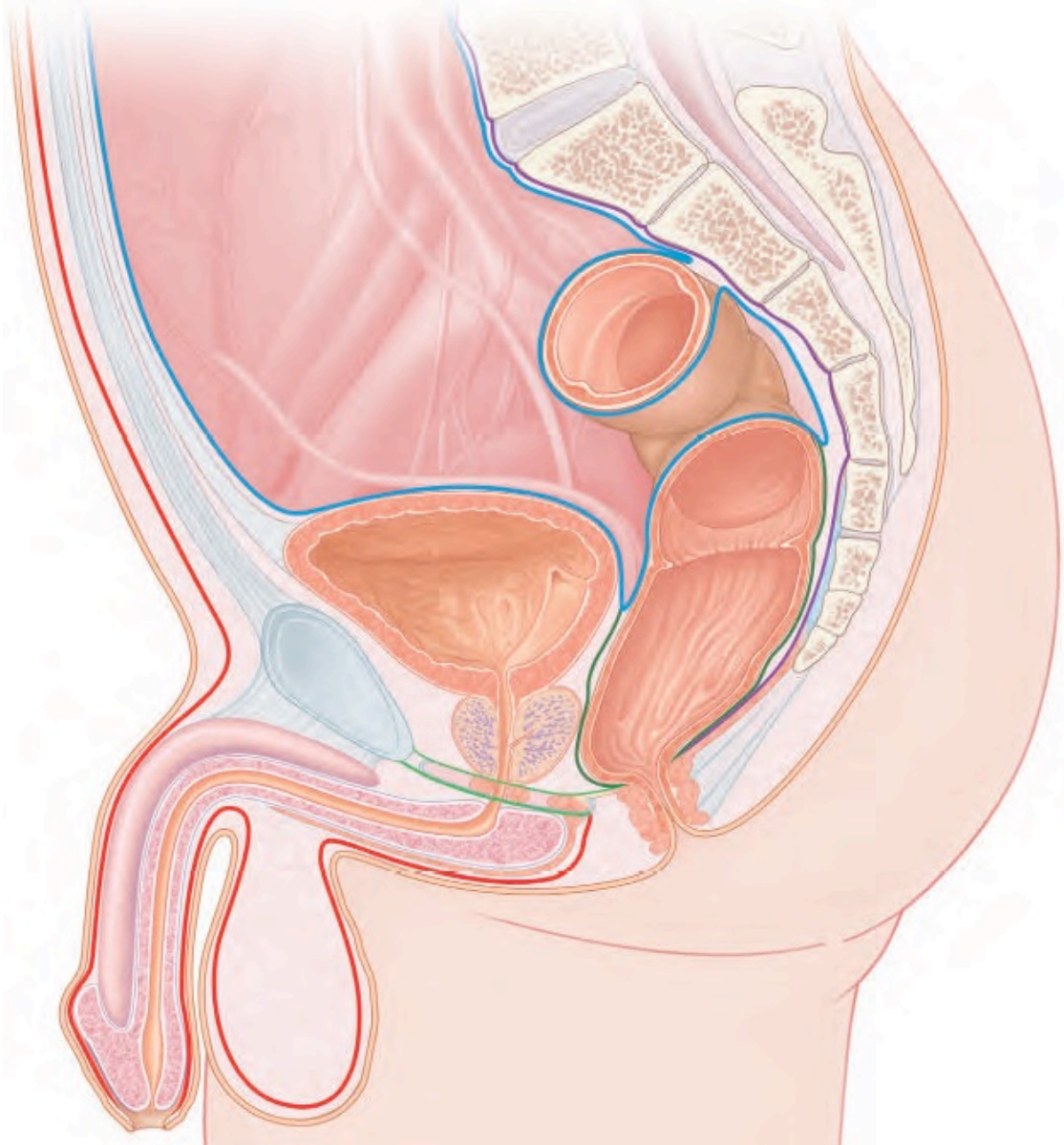
- ♦ 10 - 12 cm
- ♦ In the front of os sacrum
- ♦ bowed
 - ♦ frontal
 - ♦ sagittal
- ♦ surface
- ♦ peritoneum proximally
- ♦ Distal 7 cm adventicia
 - ♦ (to Kohlrausch fold)

RECTUM



- ♦ **Plicae transversae recti**
- ♦ **Kohlrausch's fold**
- ♦ **Ampula recti**
- ♦ **Canalis analis**

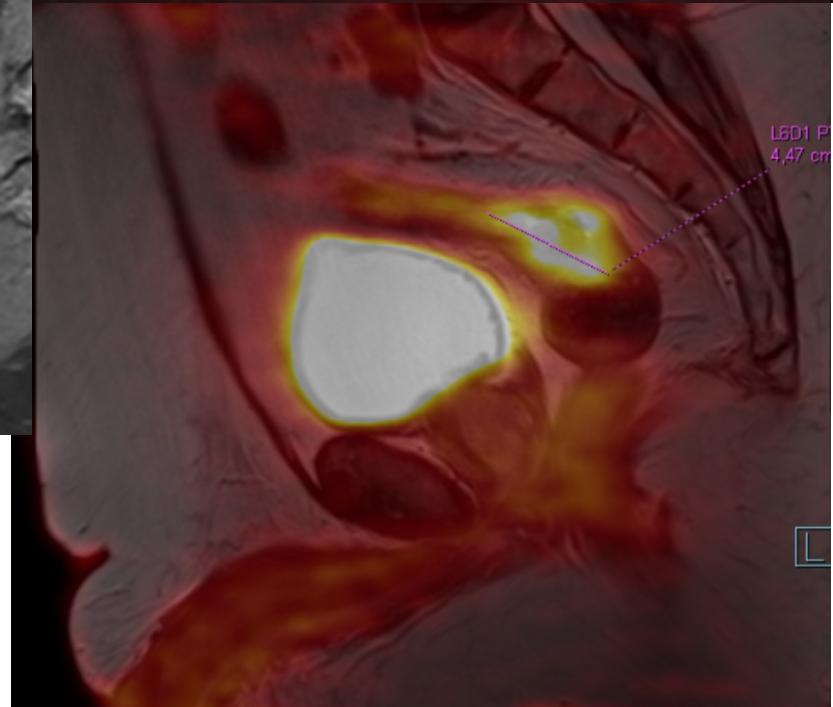
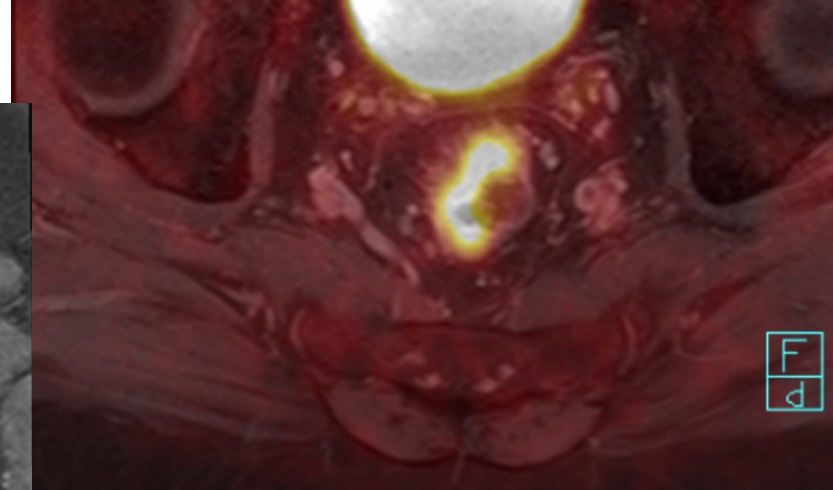
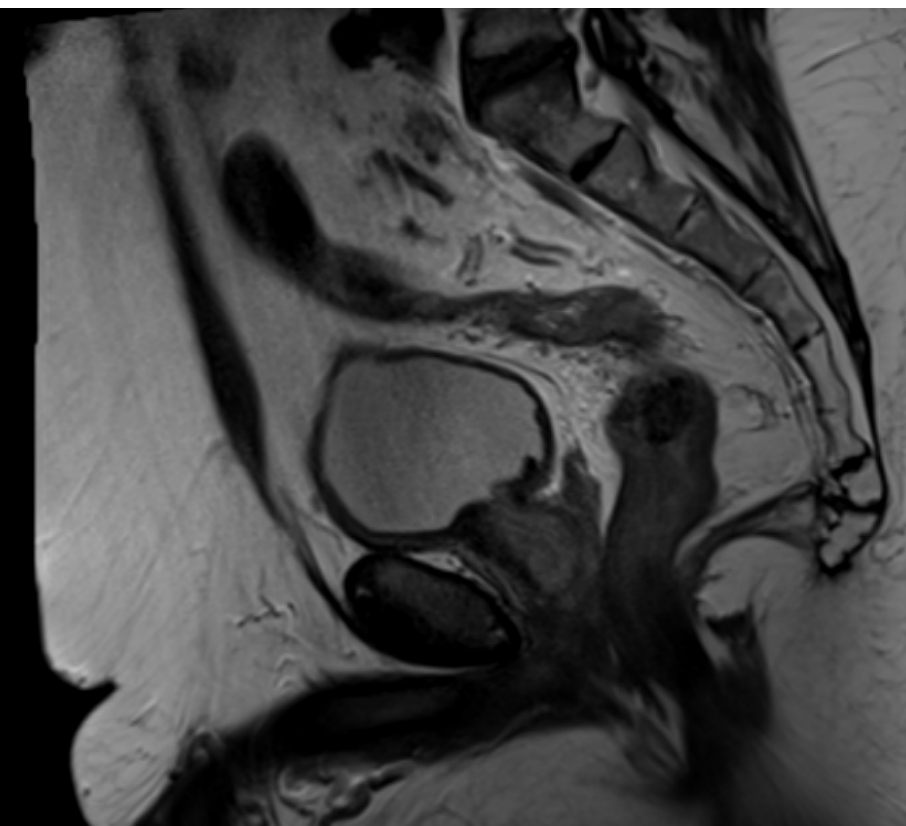
RECTUM



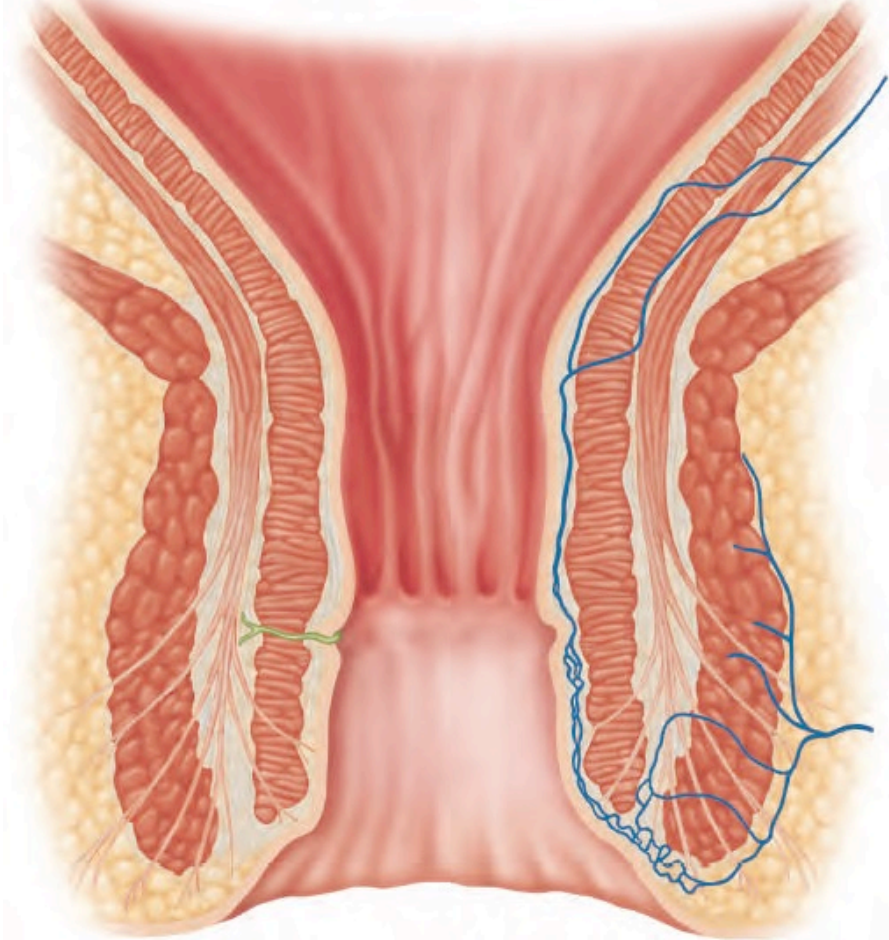
- ♦ „hanging“ of rectum
- ♦ Vasa recti superiores
- ♦ Fascia mesorectalis anterior
- ♦ Mesorectum anterior
- ♦ Fascia mesorectalis posterior
- ♦ Mesorectum posterior

- ♦ Presacral space

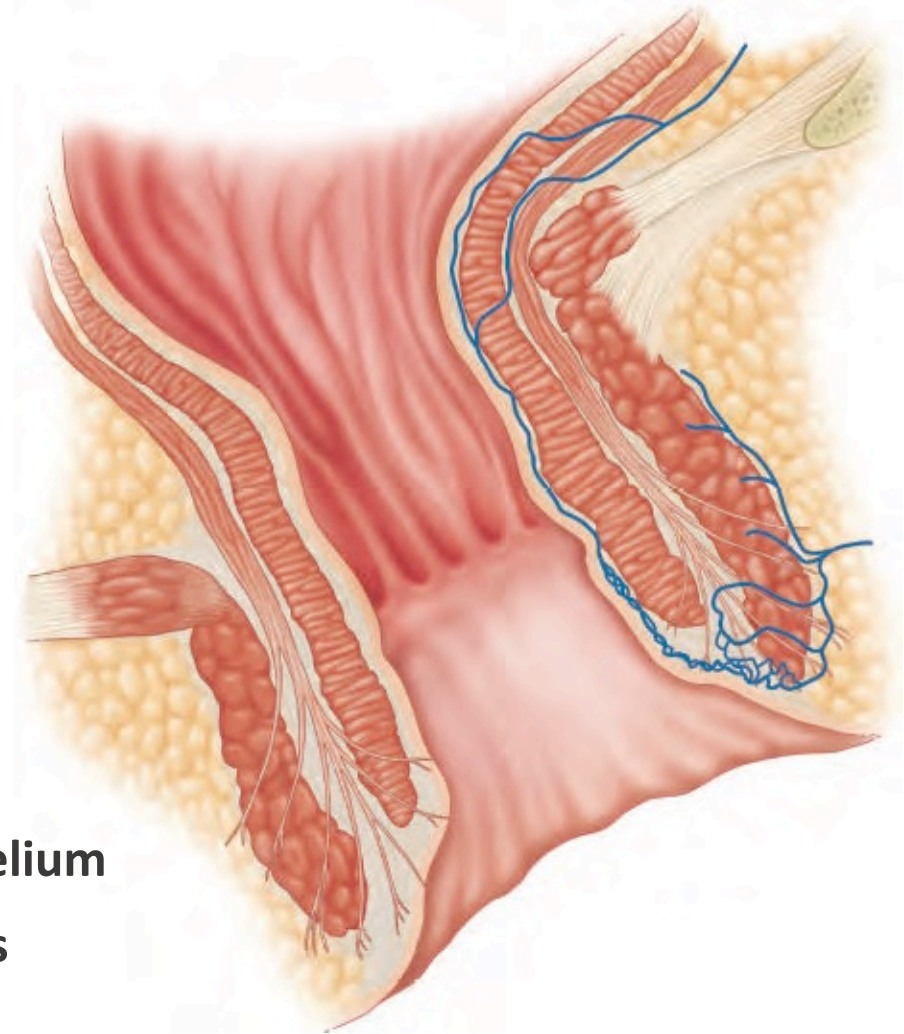
„MESORECTUM“



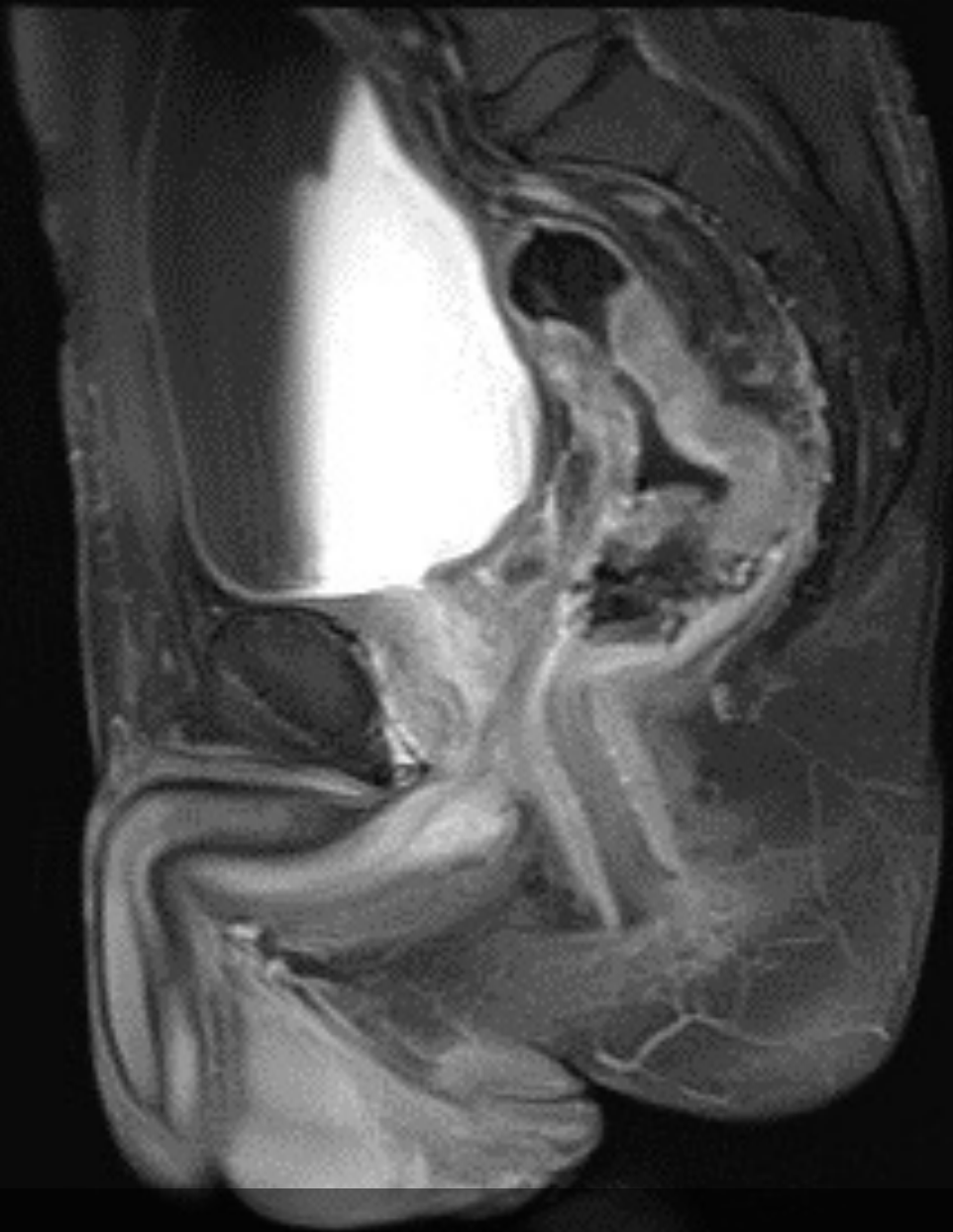
MESORECTUM A CA RECTI



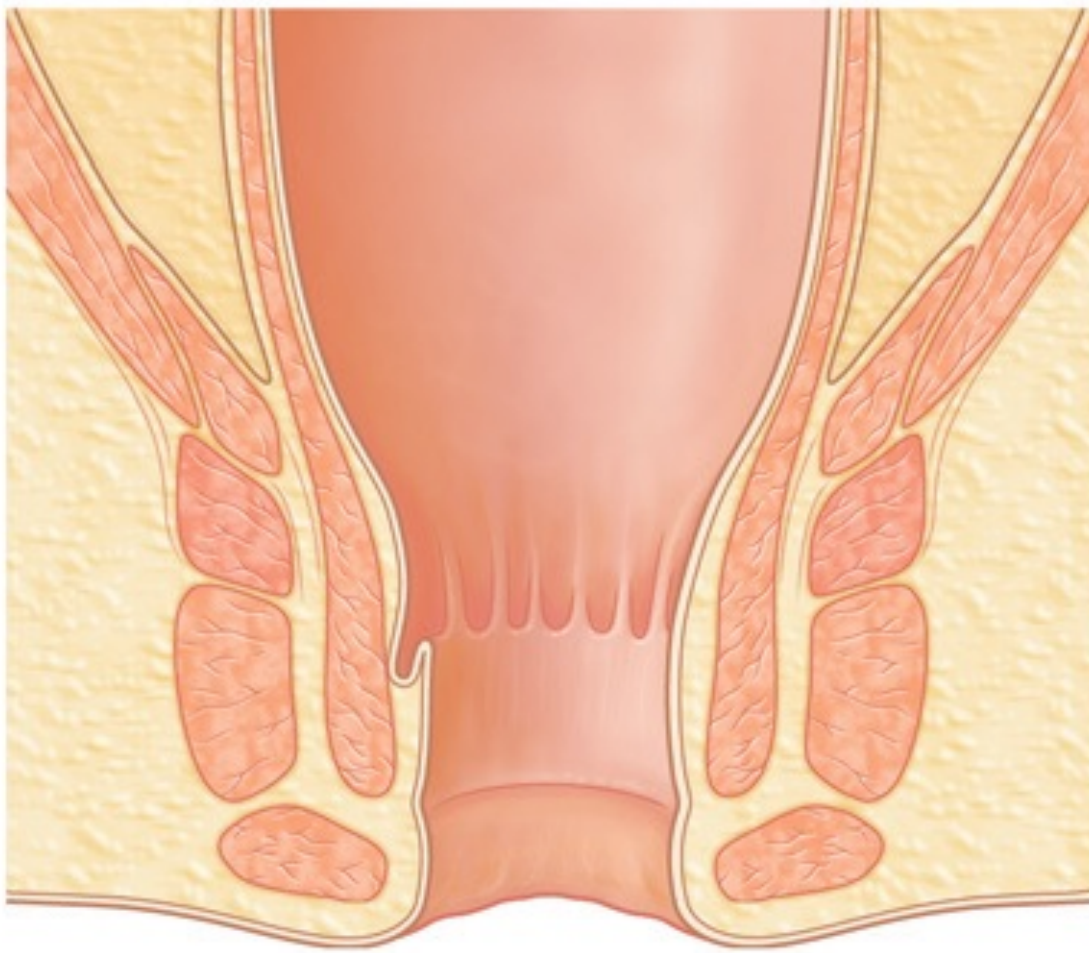
- ◆ Columnae anales
- ◆ Sinus anales
- ◆ Valvulae anales
- ◆ Linea pectinea
- ◆ Recessus rectales
 - ◆ Parazites
- ◆ Zona haemorrhoidalis
- ◆ Tela mucosa
- ◆ Higher than valvulae
- ◆ Cylindric resoprption epithelium
- ◆ Non-ceratinized squamous
- ◆ Linea alba
- ◆ Ceratinized squamous



CANALIS ANALIS



CANALIS ANALIS A CA RECTI



- ♦ **M. sphincter ani internus**

- ♦ *smooth*

- ♦ *Plexus sacralis - parasympathetic*

- ♦ **M. sphincter ani externus**

- ♦ *stripped*

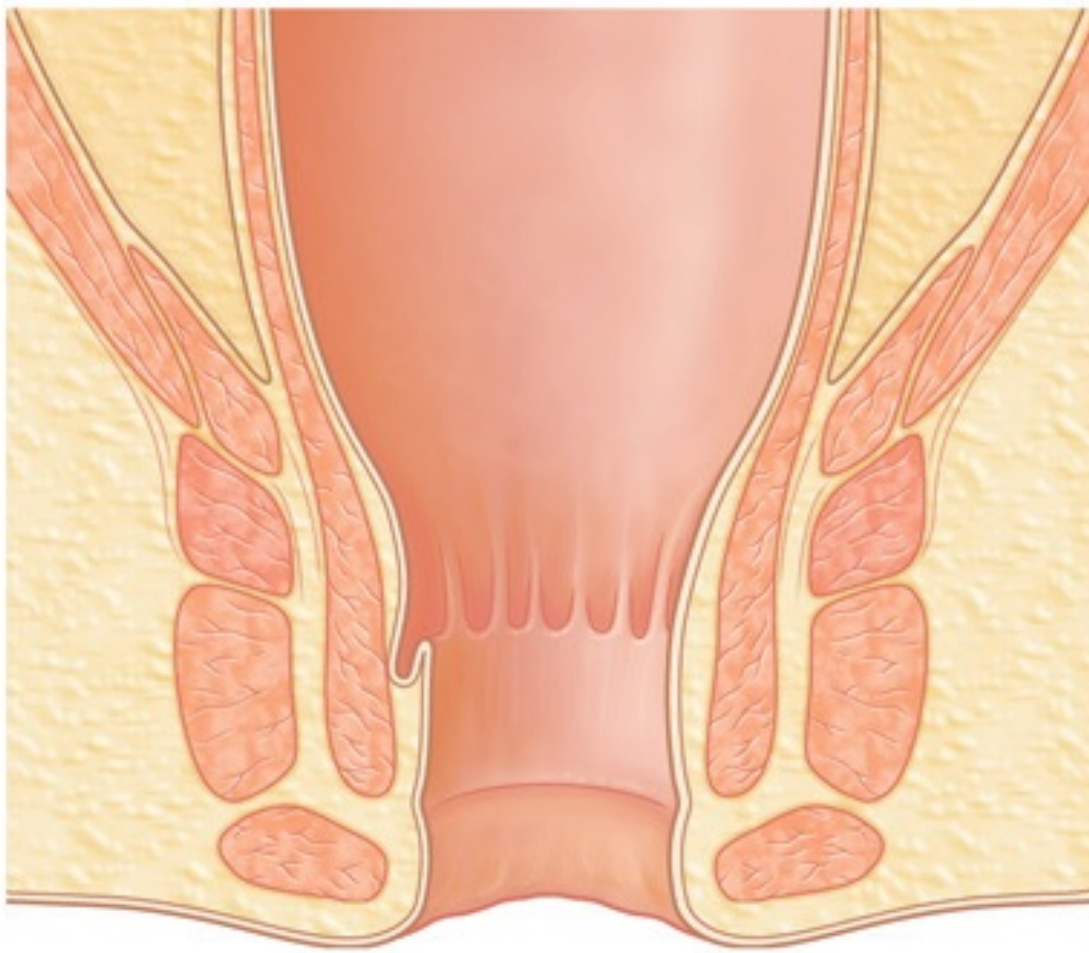
- ♦ *N. pudendus*

- ♦ **Pars profunda**

- ♦ **Pars superficialis**

- ♦ **Pars subcutanea**

SPHINCTER ANI INTERNUS



- ♦ **M. sphincter ani internus**

- ♦ *smooth*

- ♦ **M. sphincter ani externus**

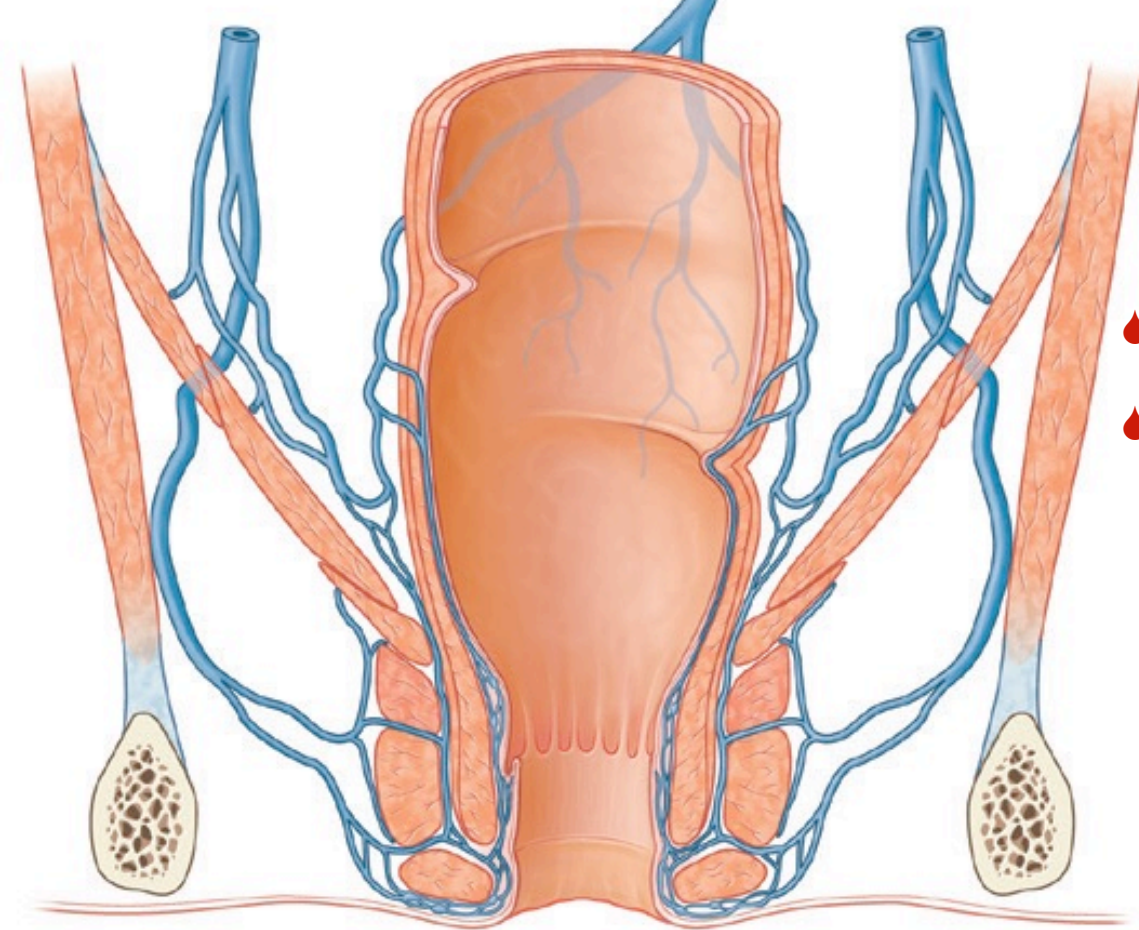
- ♦ *stripped*

- ♦ **Pars profunda**

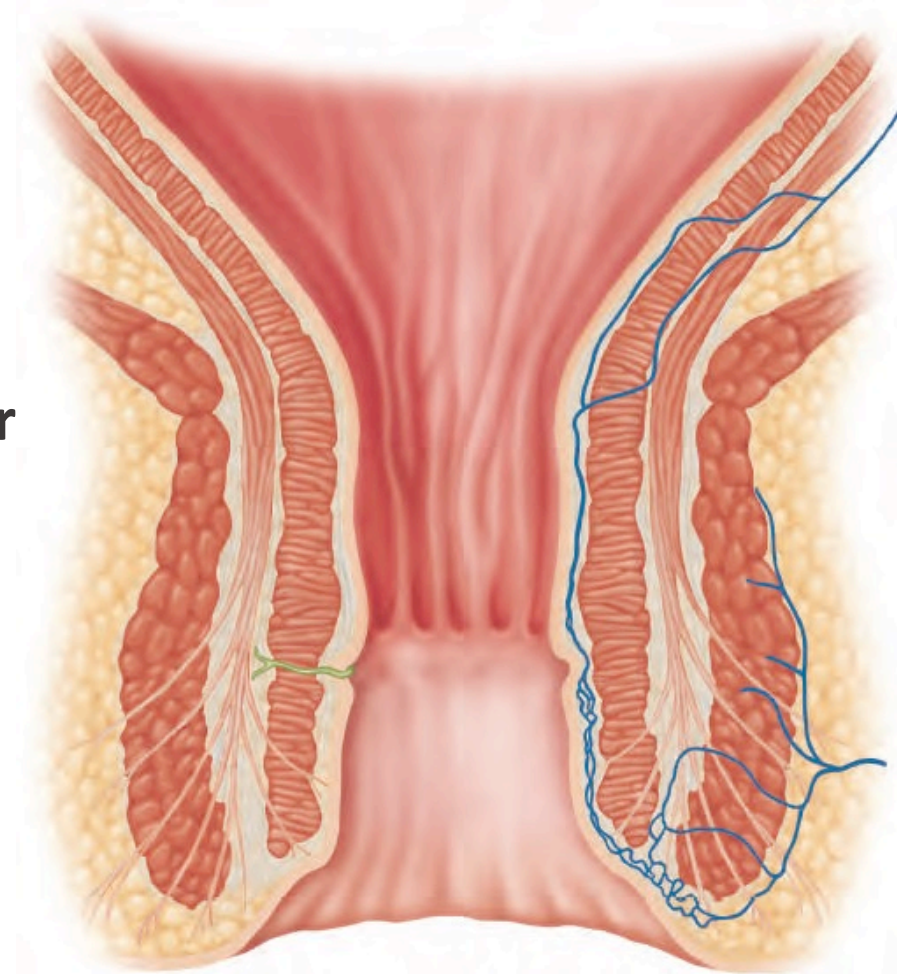
- ♦ **Pars superficialis**

- ♦ **Pars subcutanea**

SPHINCTER ANI EXTERNUS



- ♦ V. iliaca interna
- ♦ V. rectalis superior



PLEXUS HAEMORRHOIDEALIS

ABDOMEN 2

Prof. MUDr. Jiří Ferda, Ph.D.

