

DIGESTIVE SYSTEM



DIGESTIVE SYSTEM I.

- ORAL CAVITY**

GASTROINTESTINAL TRACT – GIT (APPARATUS DIGESTORIUS)

Oral cavity (Cavitas oralis)

Pharynx

Oesophagus

Stomach (Ventriculus)

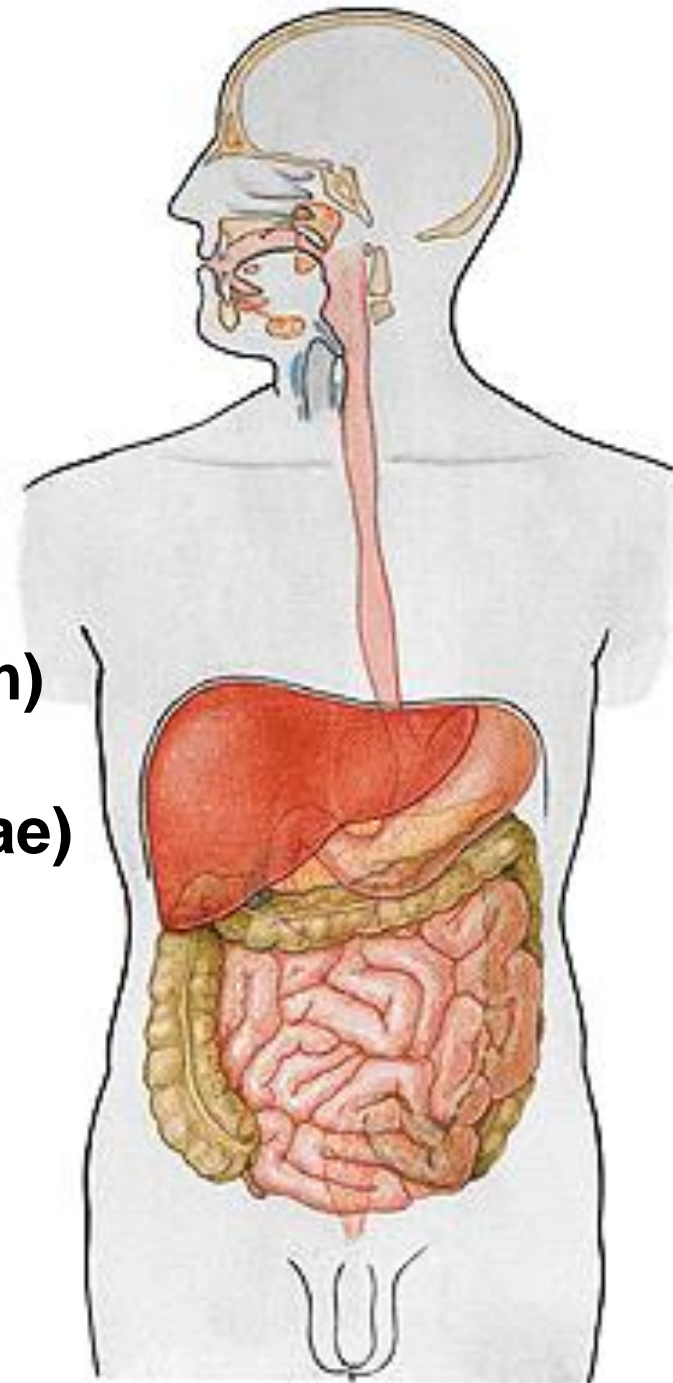
Small intestine (Intestinum tenue)

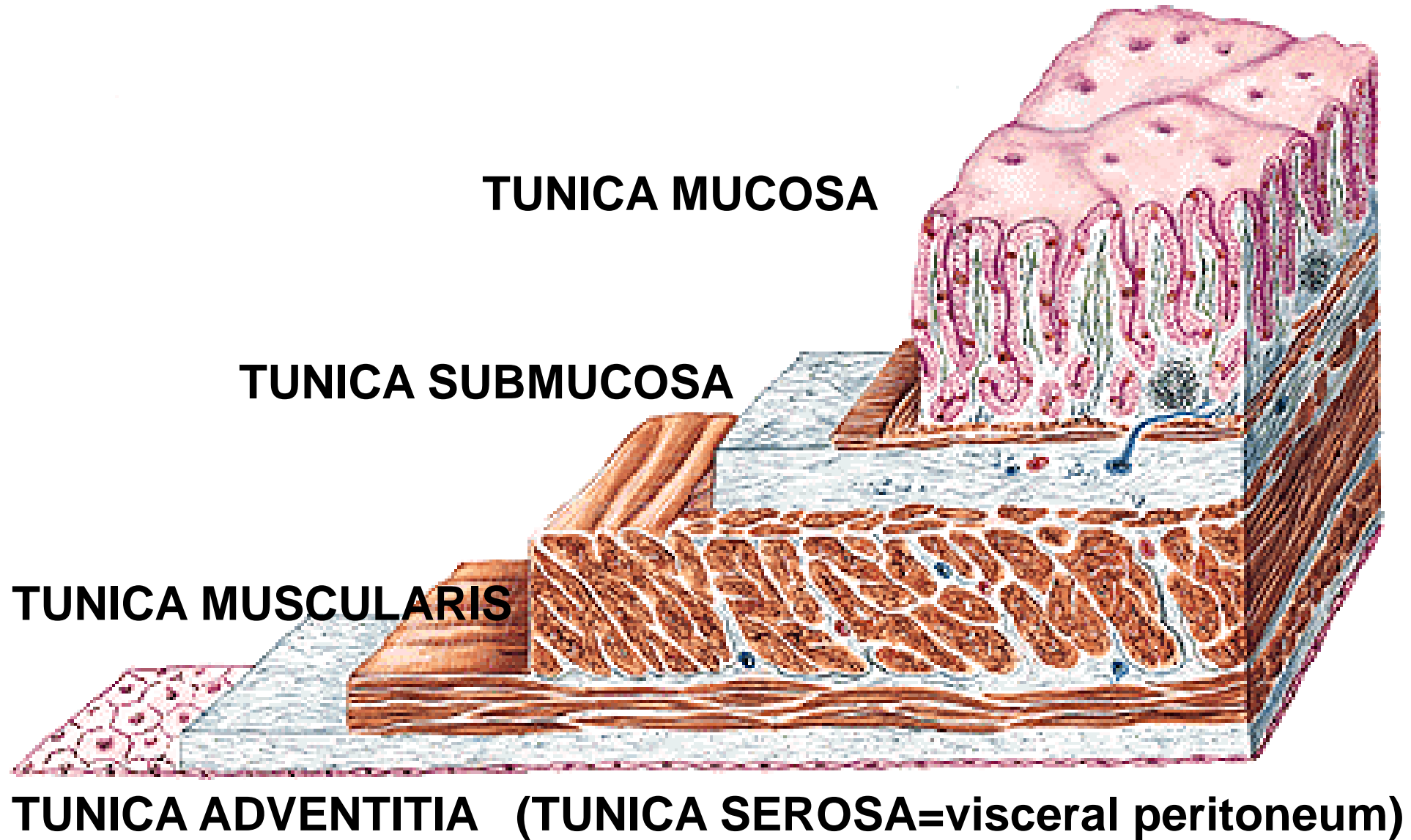
Large intestine (Intestinum crassum)

Salivary glands (Glandulae salivariae)

Liver (Hepar)

Pancreas



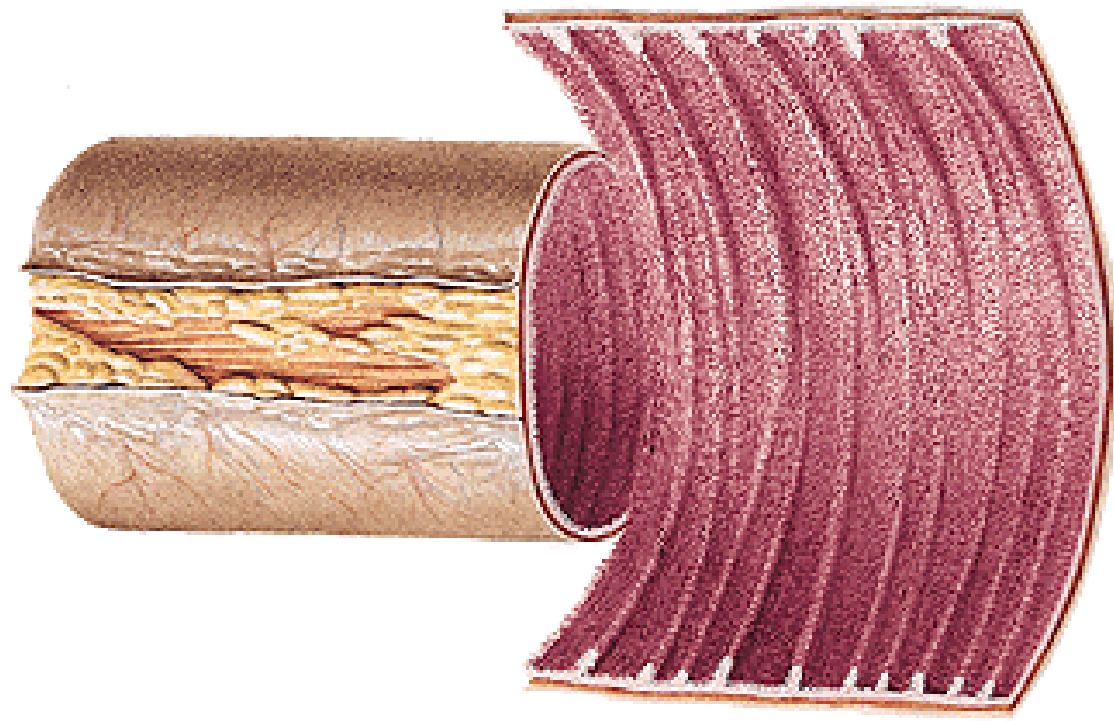


TUNICA MUCOSA

TUNICA SUBMUCOSA

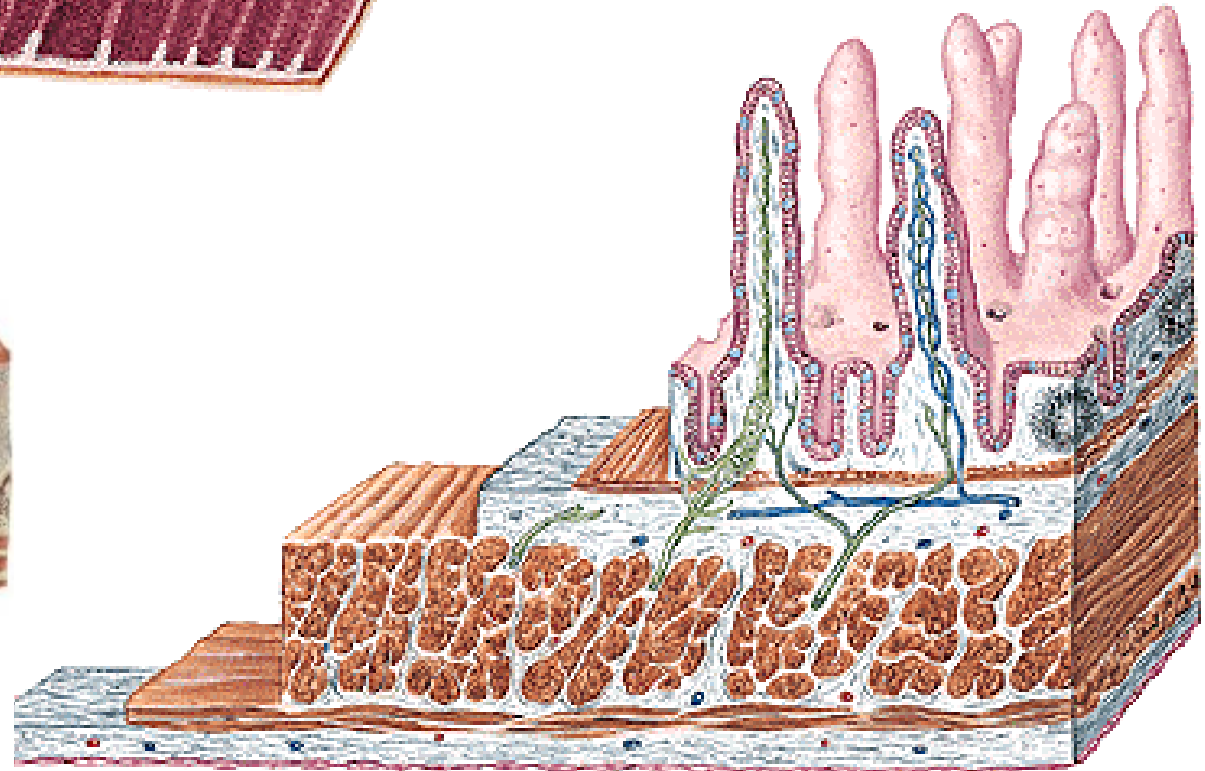
TUNICA MUSCULARIS

TUNICA ADVENTITIA (TUNICA SEROSA=visceral peritoneum)

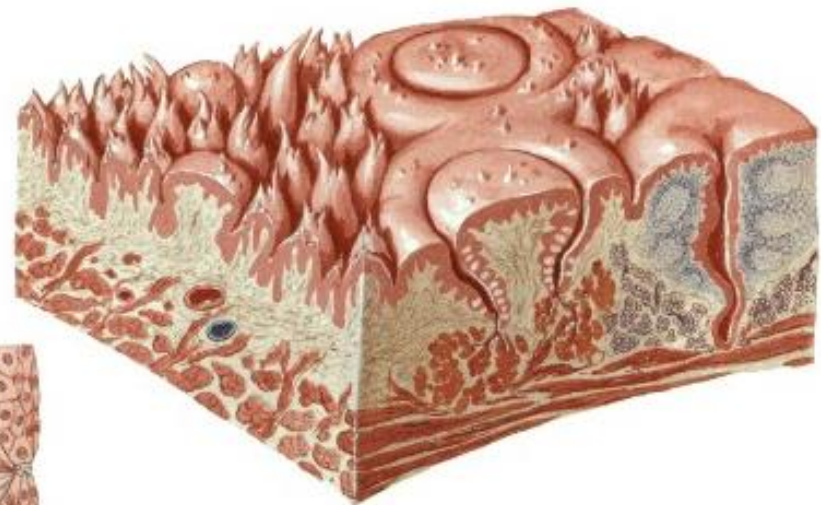


PLICAE

VILLI INTESTINALES



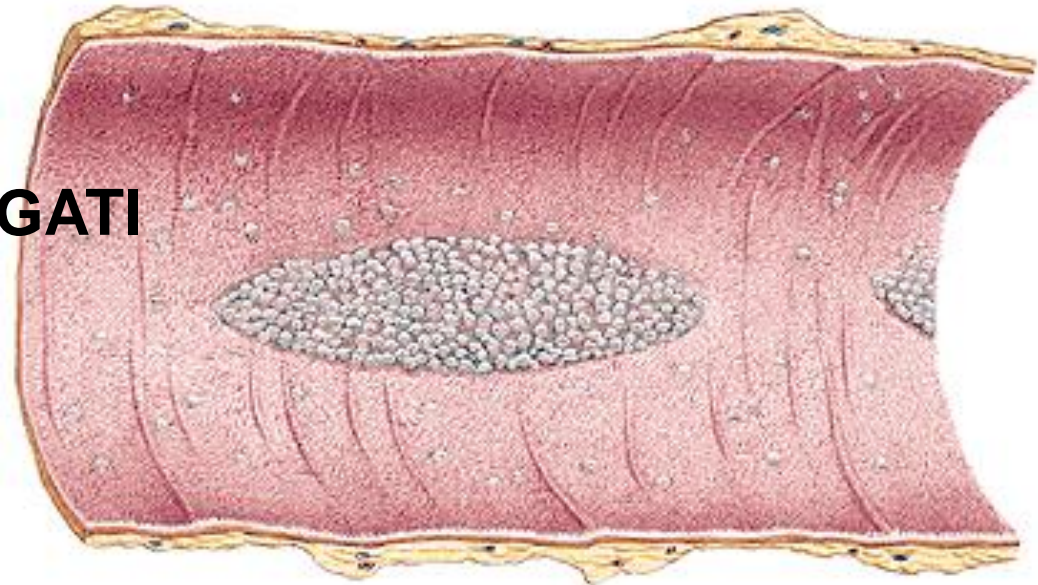
PAPILLAE





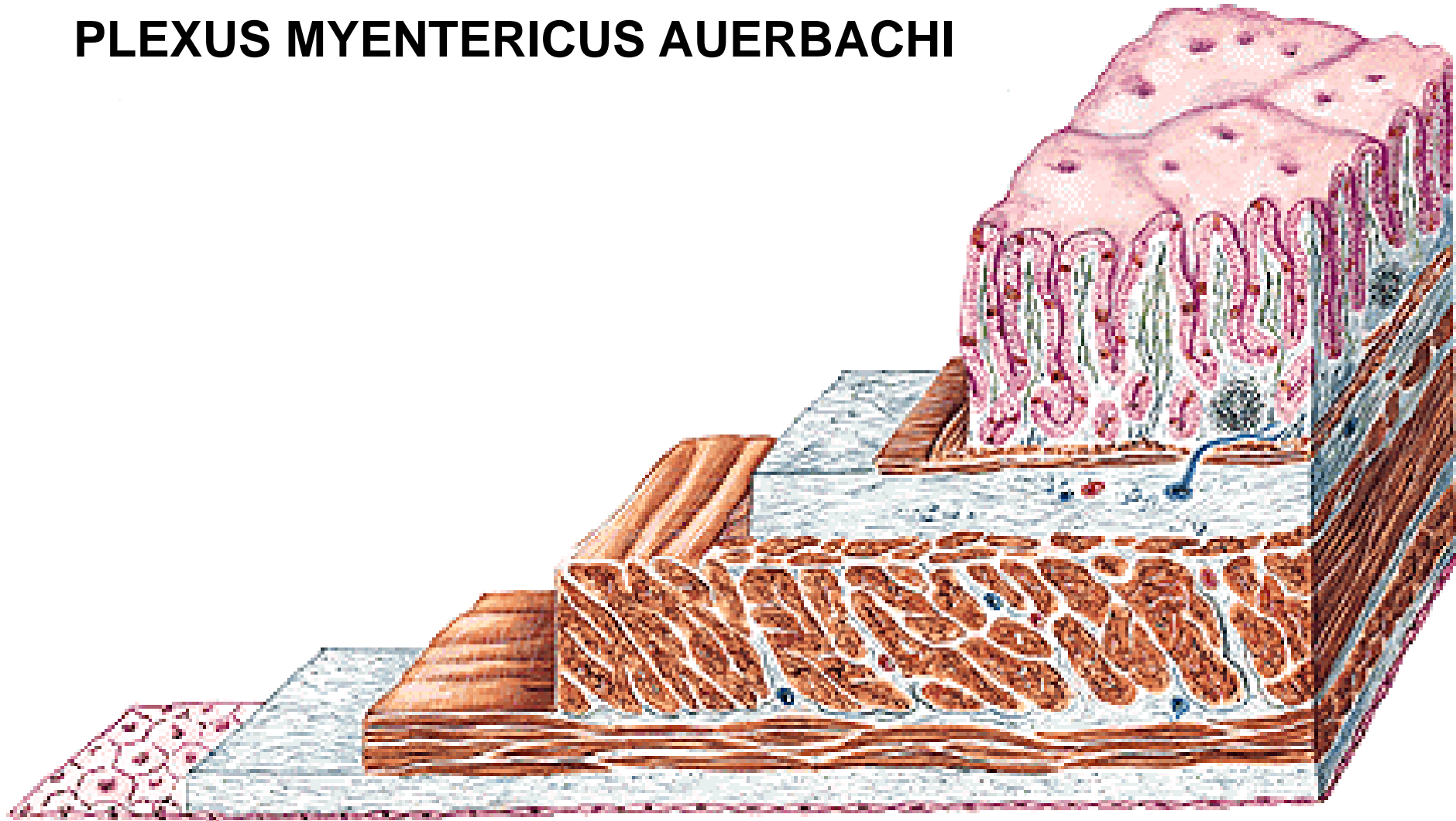
**FOLLICULI
LYMPHATICI SOLITARI**

**FOLLICULI LYMPH. AGGREGATI
– PEYER'S PATCHES**



PLEXUS SUBMUCOSUS MEISSNERI

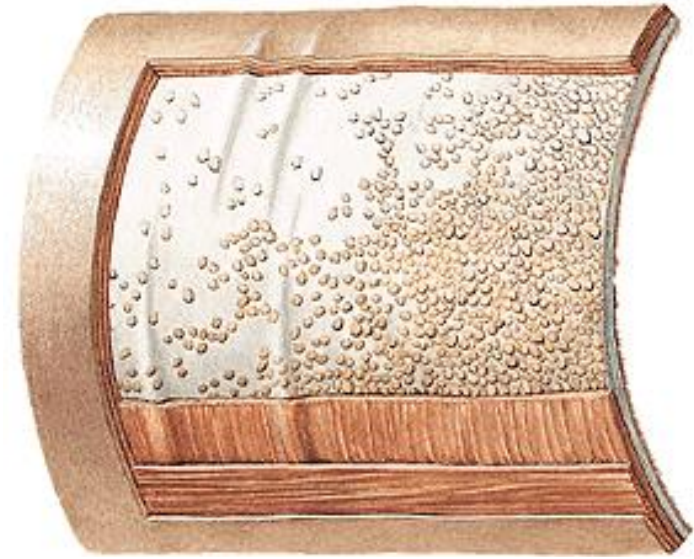
PLEXUS MYENTERICUS AUERBACHI



GLANDS OF GIT:

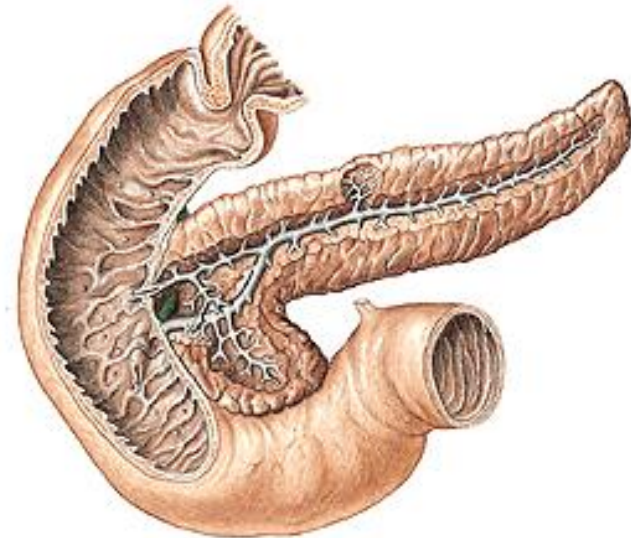
Intramural – goblet cells

- small salivary glands
- glandulae duodenales



Extramural – great salivary glands

- liver
- pancreas

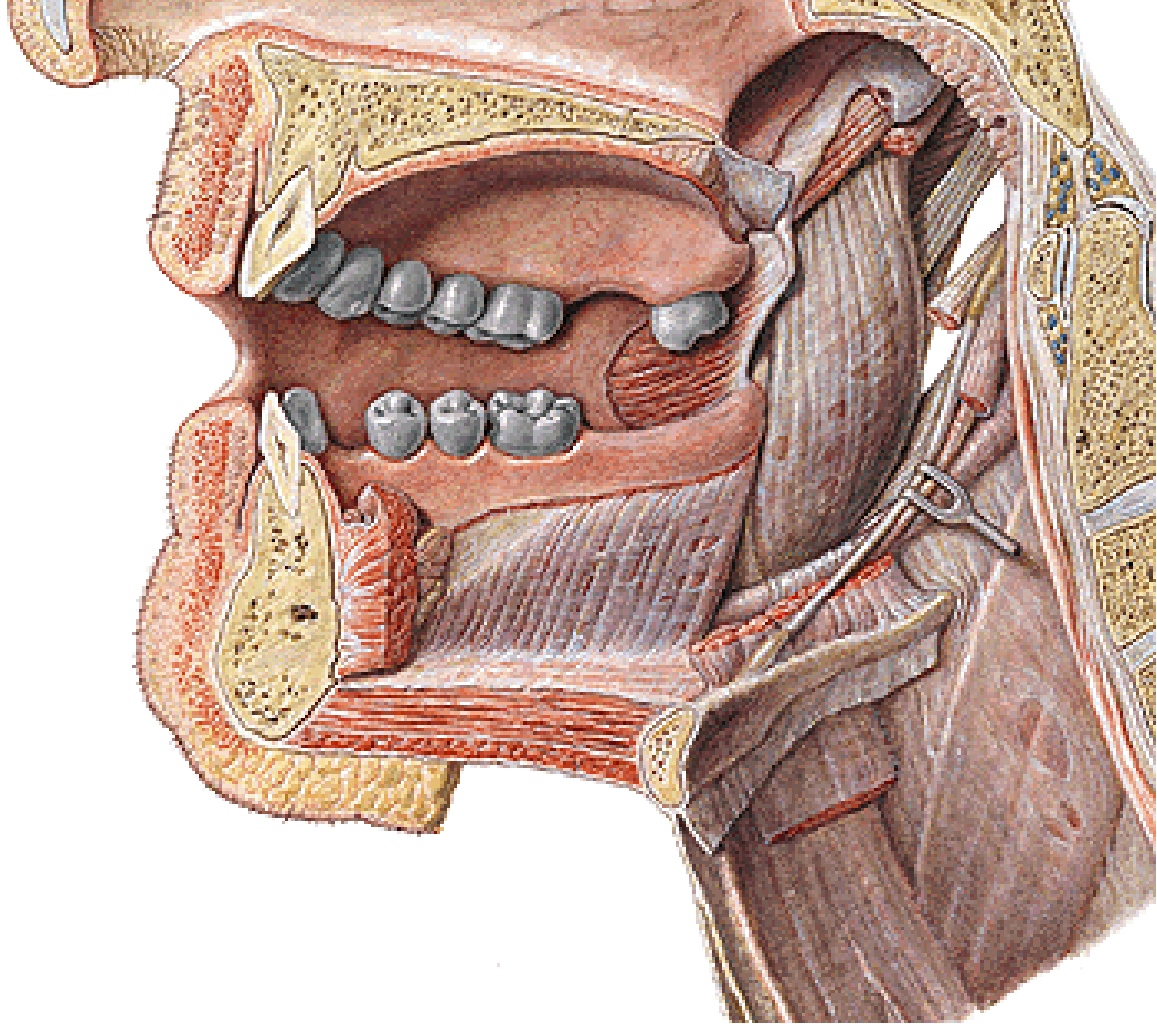


**CAVUM ORIS
(CAVITAS ORIS)**

Rima oris

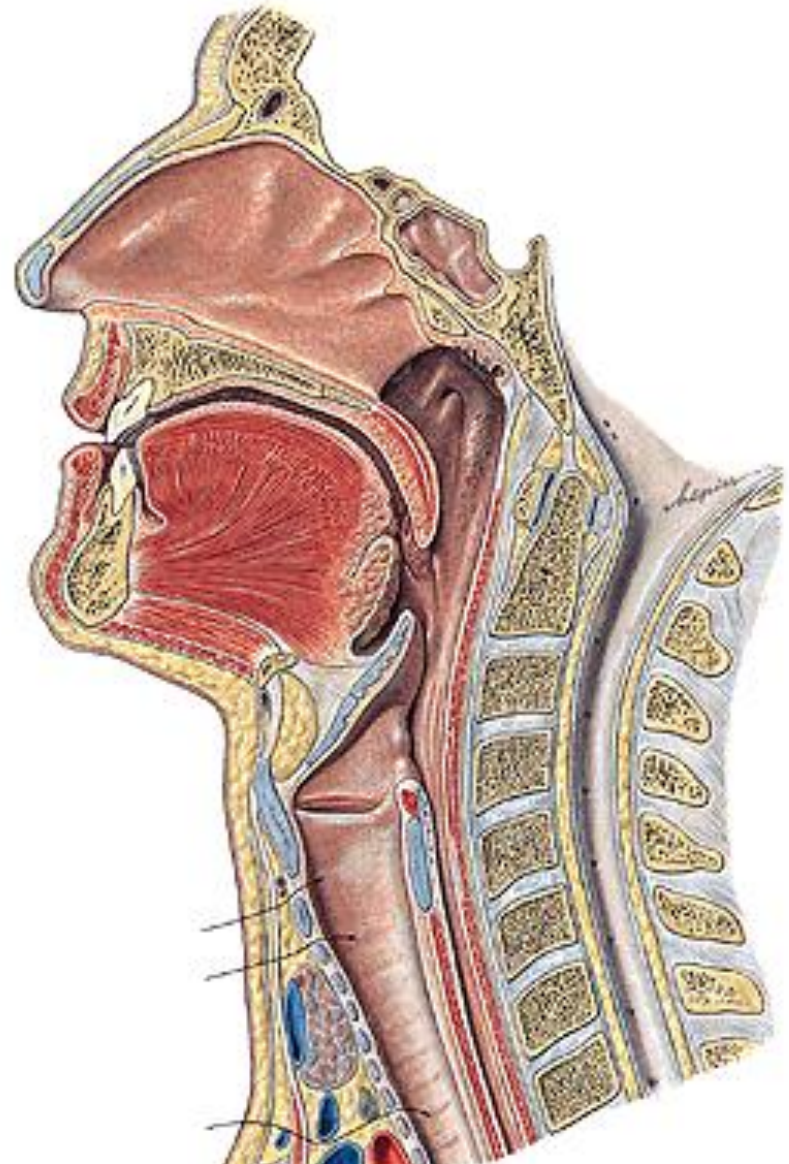
Isthmus faucium





CAVUM ORIS

- vestibulum oris
- cavum oris proprium



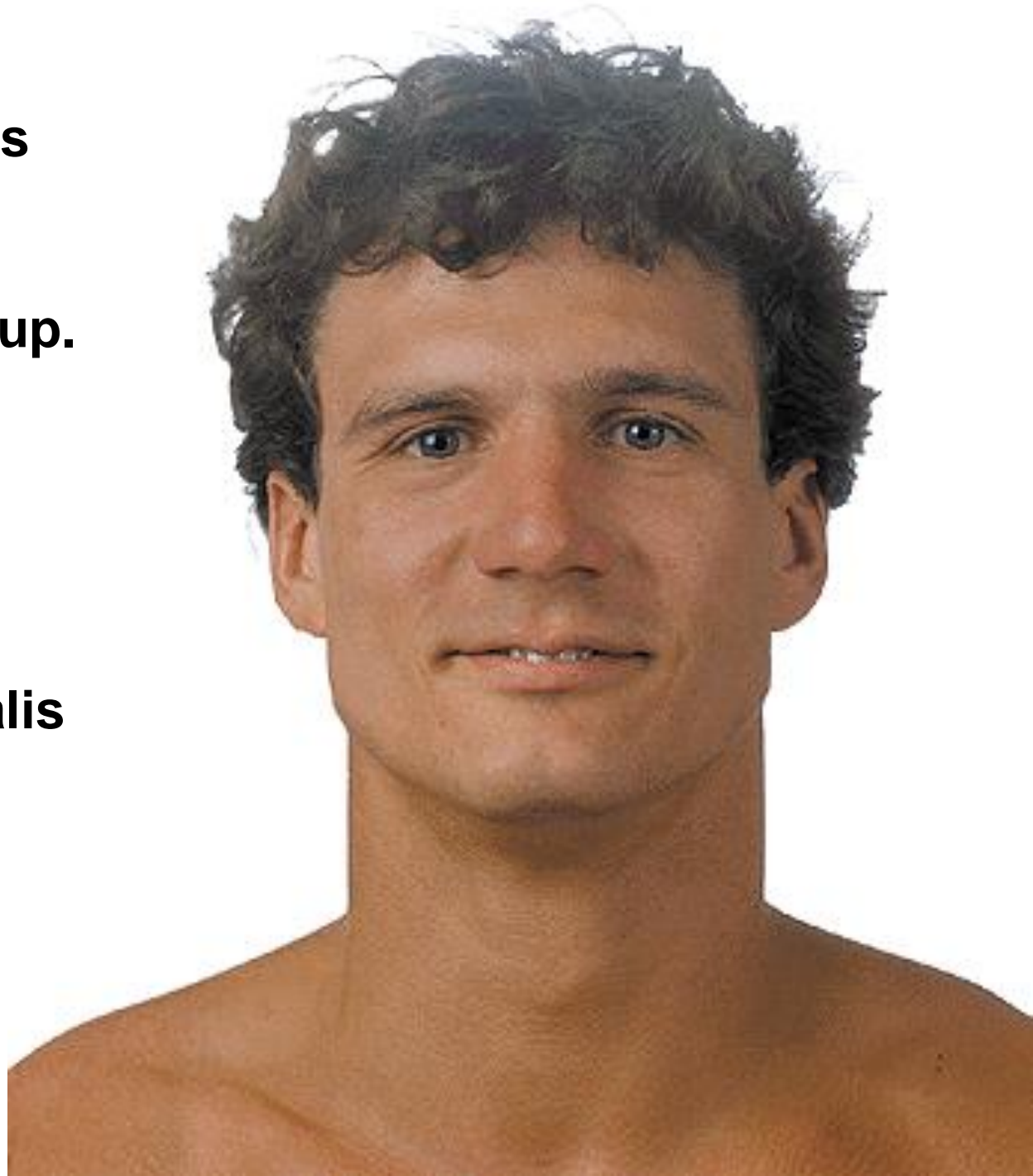
Labium superius

- **sulcus nasolabialis**
- **pars intermedia**
- **philtrum**
- **tuberculum labii sup.**
- **cheiloschisis**
- **gnathoschisis**
- **palatoschisis**

Labium inferius

- **sulcus mentolabialis**

Anguli oris



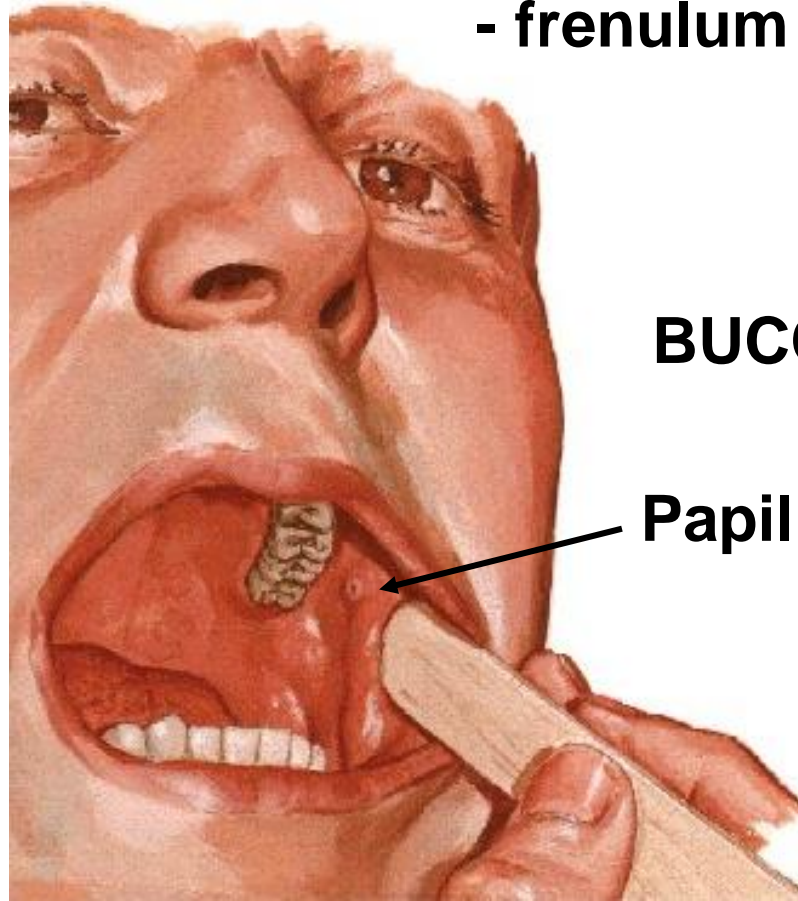
VESTIBULUM ORIS

Fornix vestibuli sup.

- frenulum labii superioris

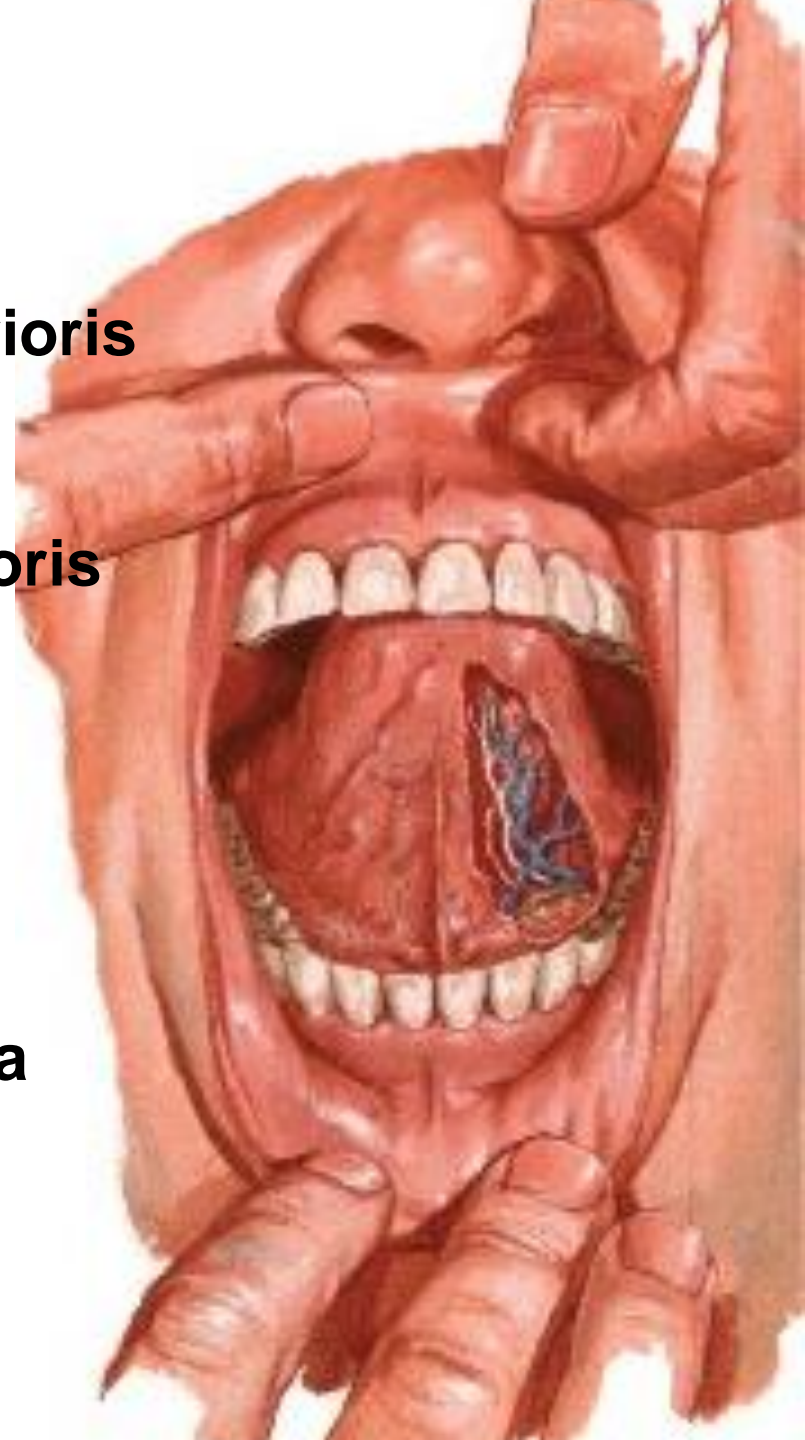
Fornix vestibuli inf.

- frenulum labii inferioris

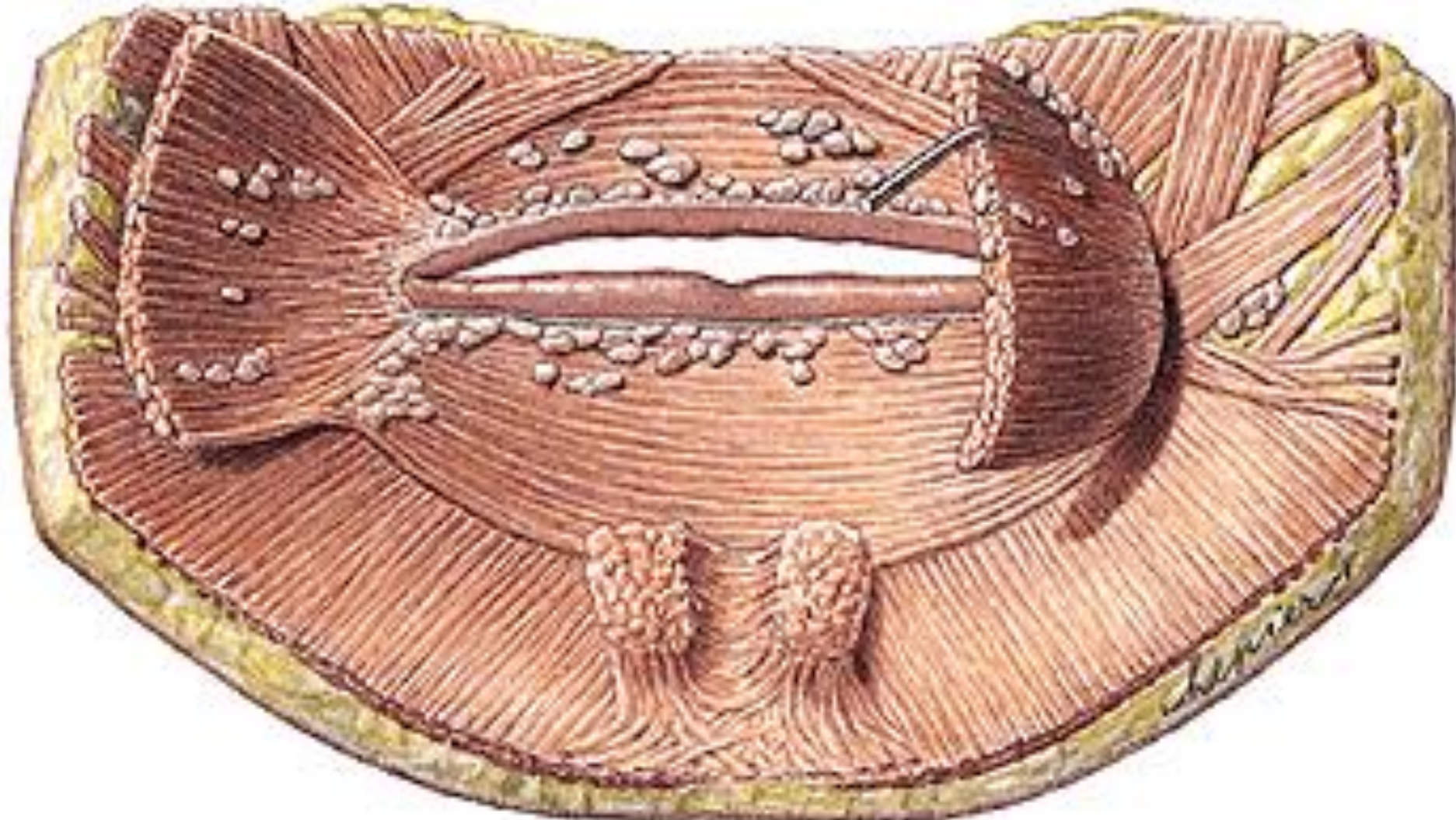


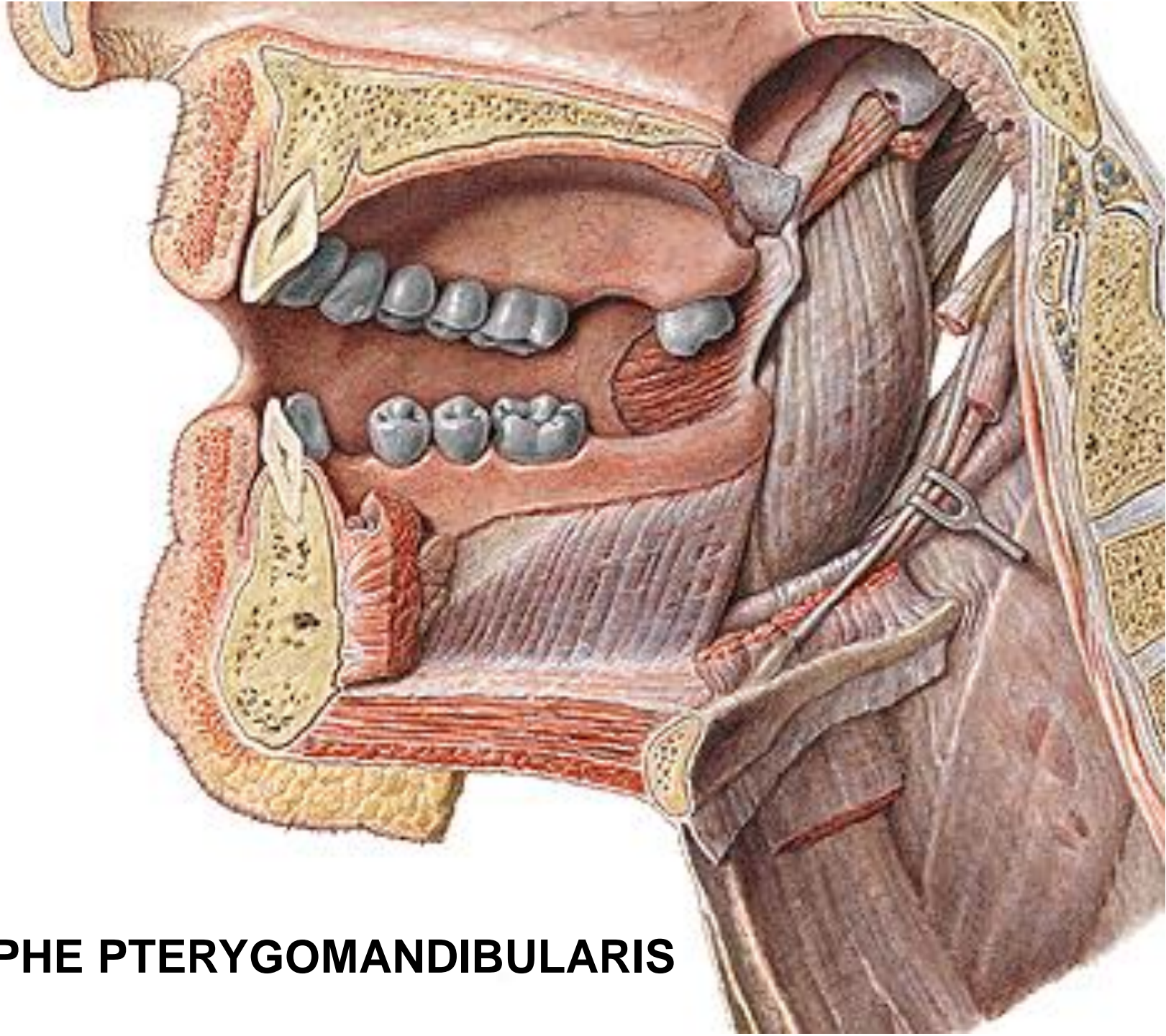
BUCCA

Papilla parotidea



Glandulae labiales, buccales
M. orbicularis oris
M. buccinator
Corpus adiposum buccae





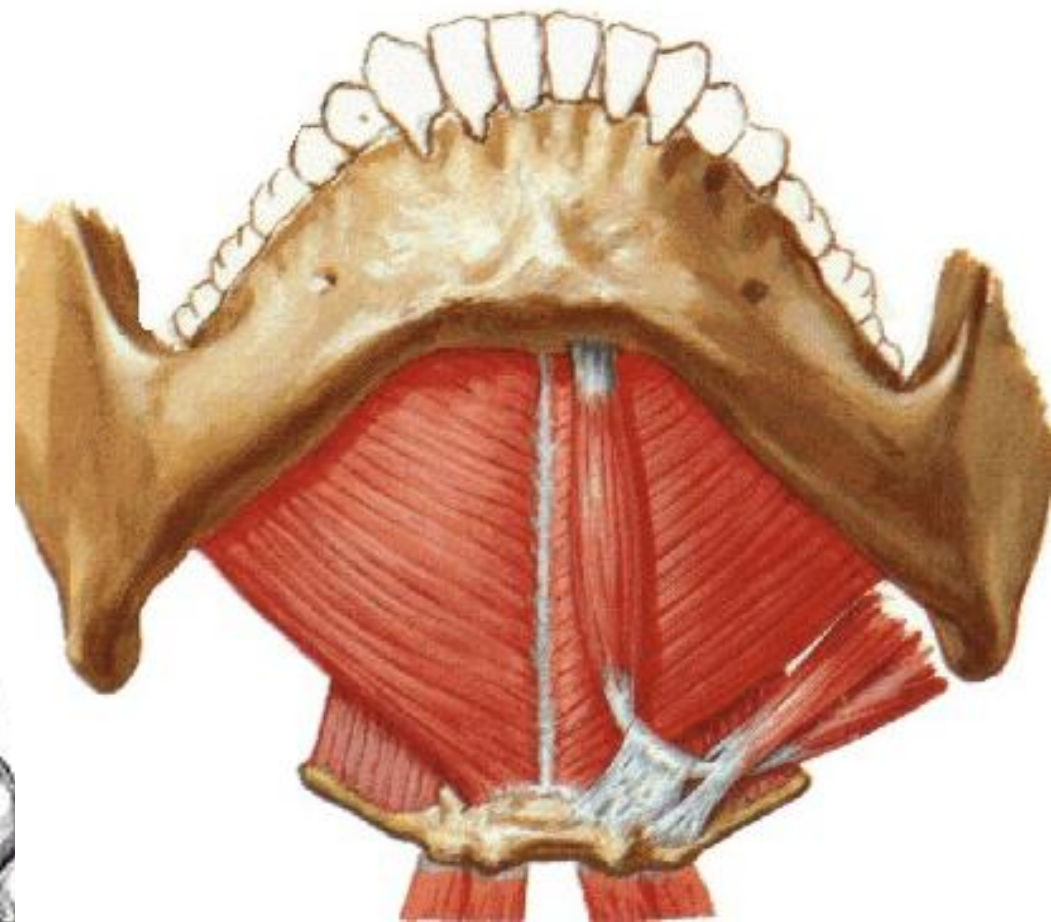
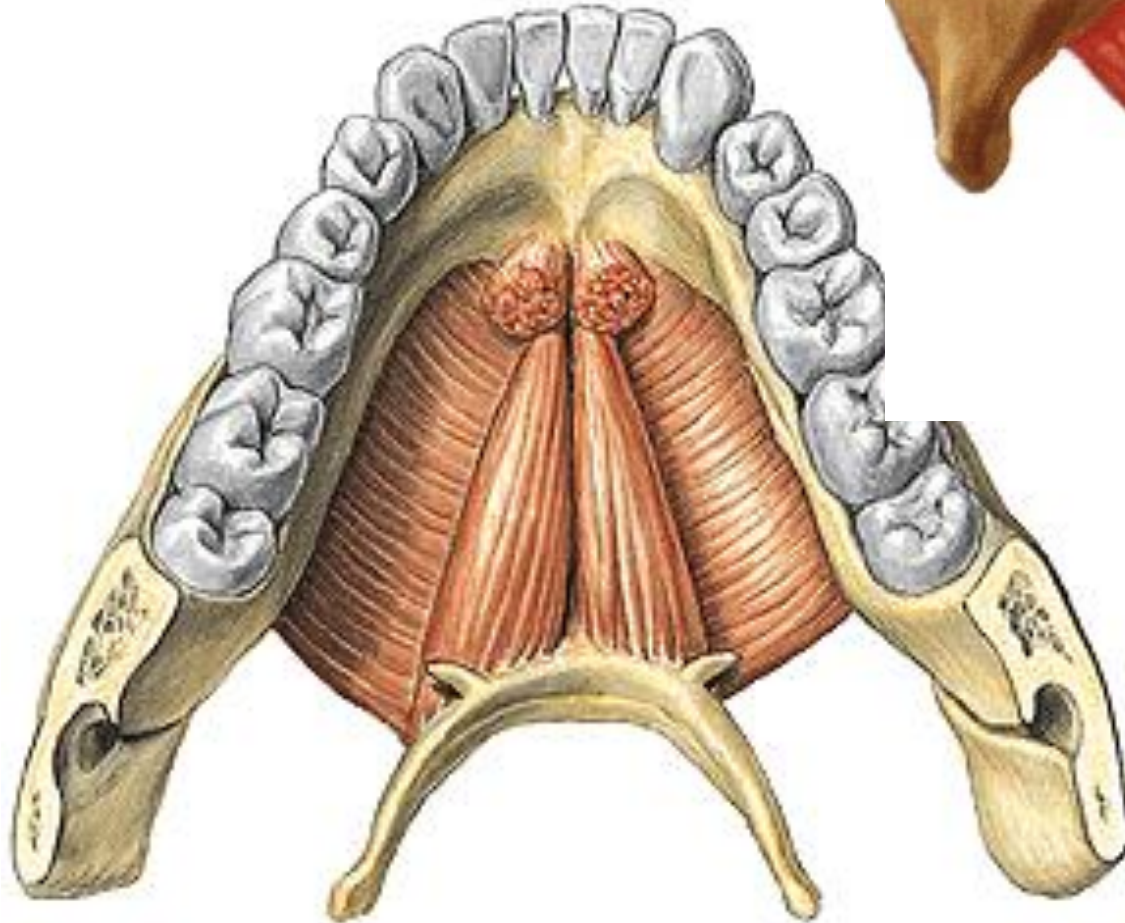
RAPHE PTERYGOMANDIBULARIS

CAVUM ORIS PROPRIUM



DIAPHRAGMA ORIS

- m. mylohyoideus
(raphe mylohyoidea)
- m. geniohyoideus
- m. digastricus

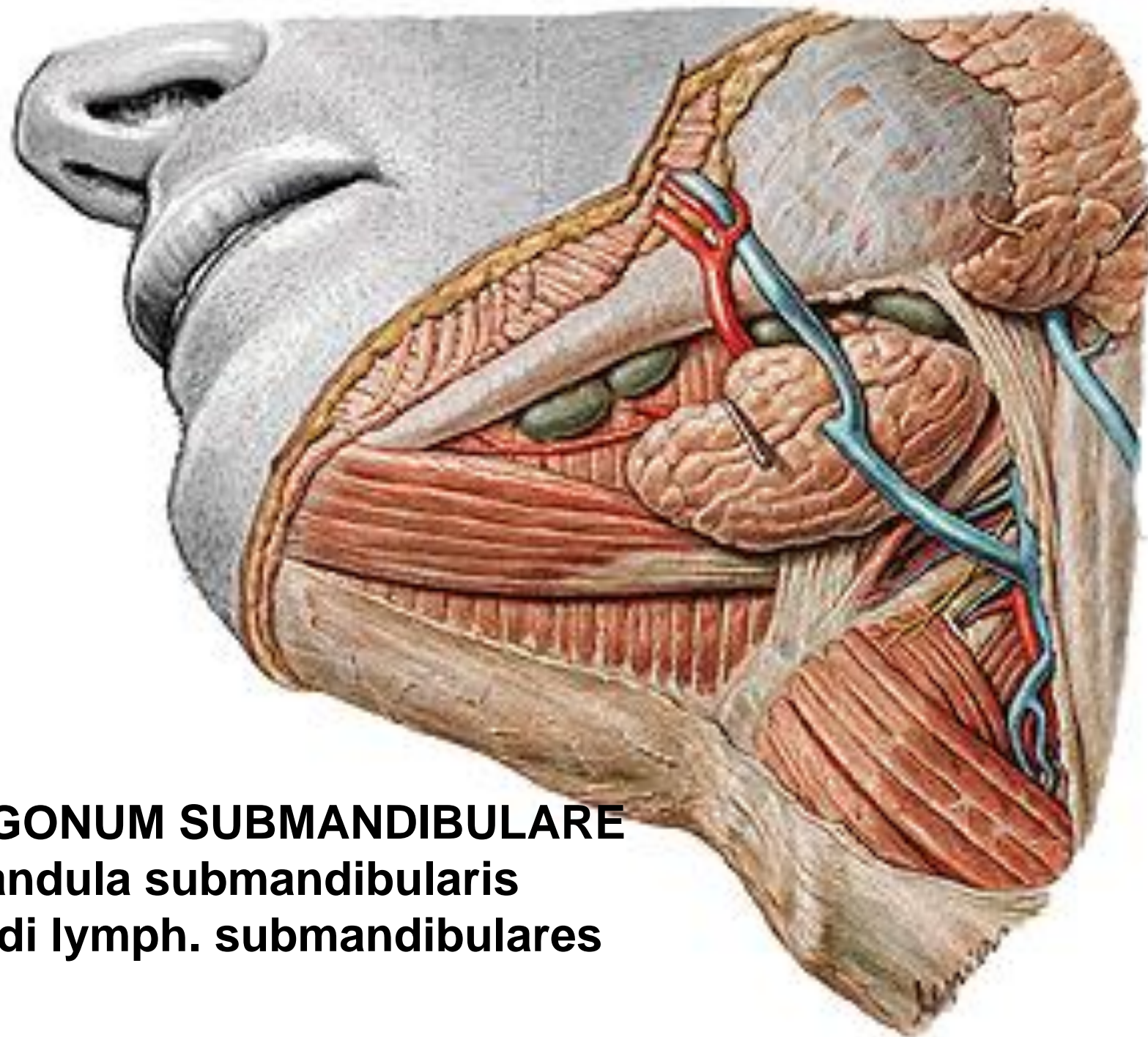


GLANDULAE SALIVARIAE MINORES

- labiales, buccales, molares, palatinae, linguales

GLANDULAE SALIVARIAE MAJORES

- submandibularis
- sublingualis
- parotis



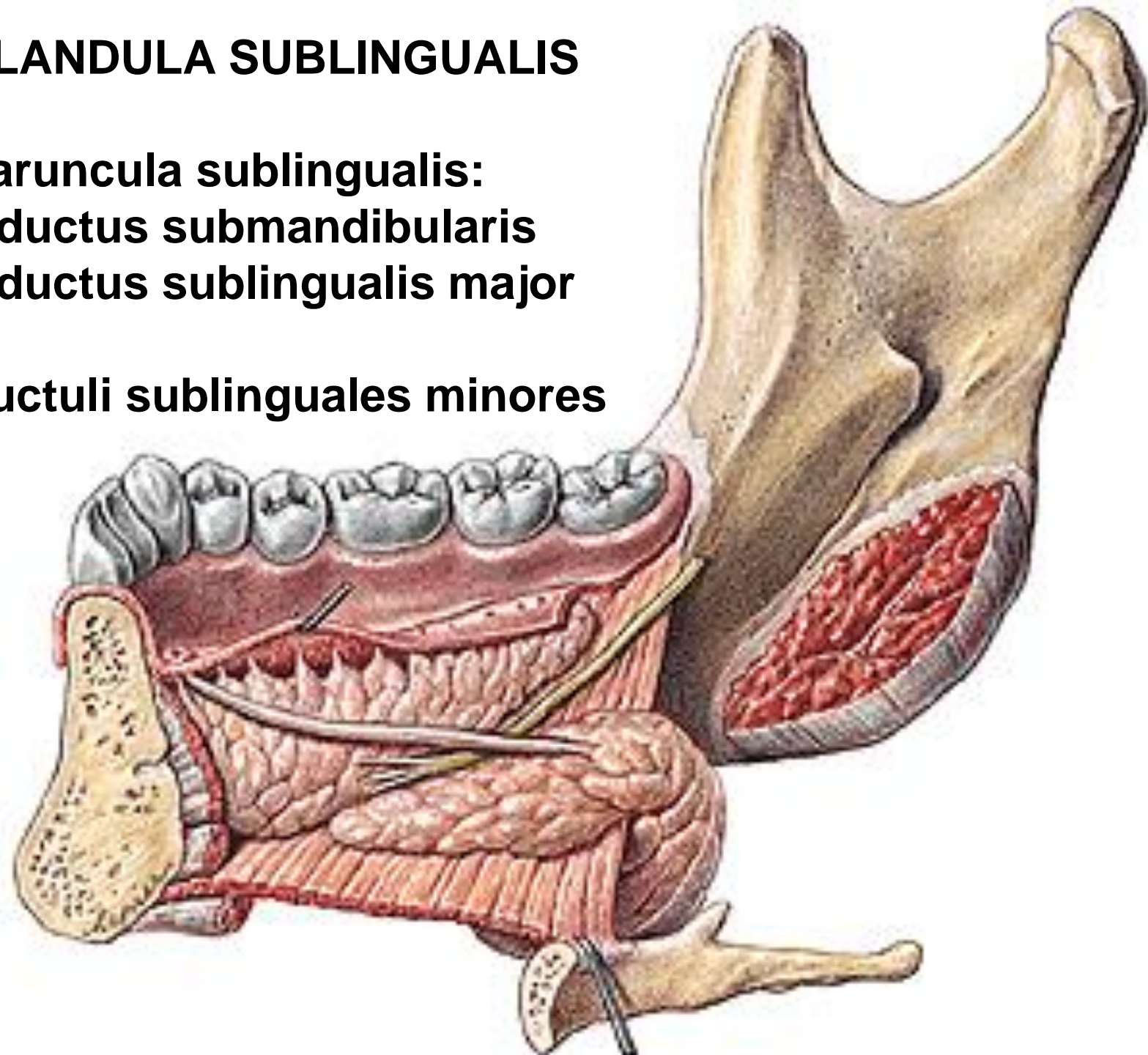
TRIGONUM SUBMANDIBULARE
- glandula submandibularis
- nodi lymph. submandibulares

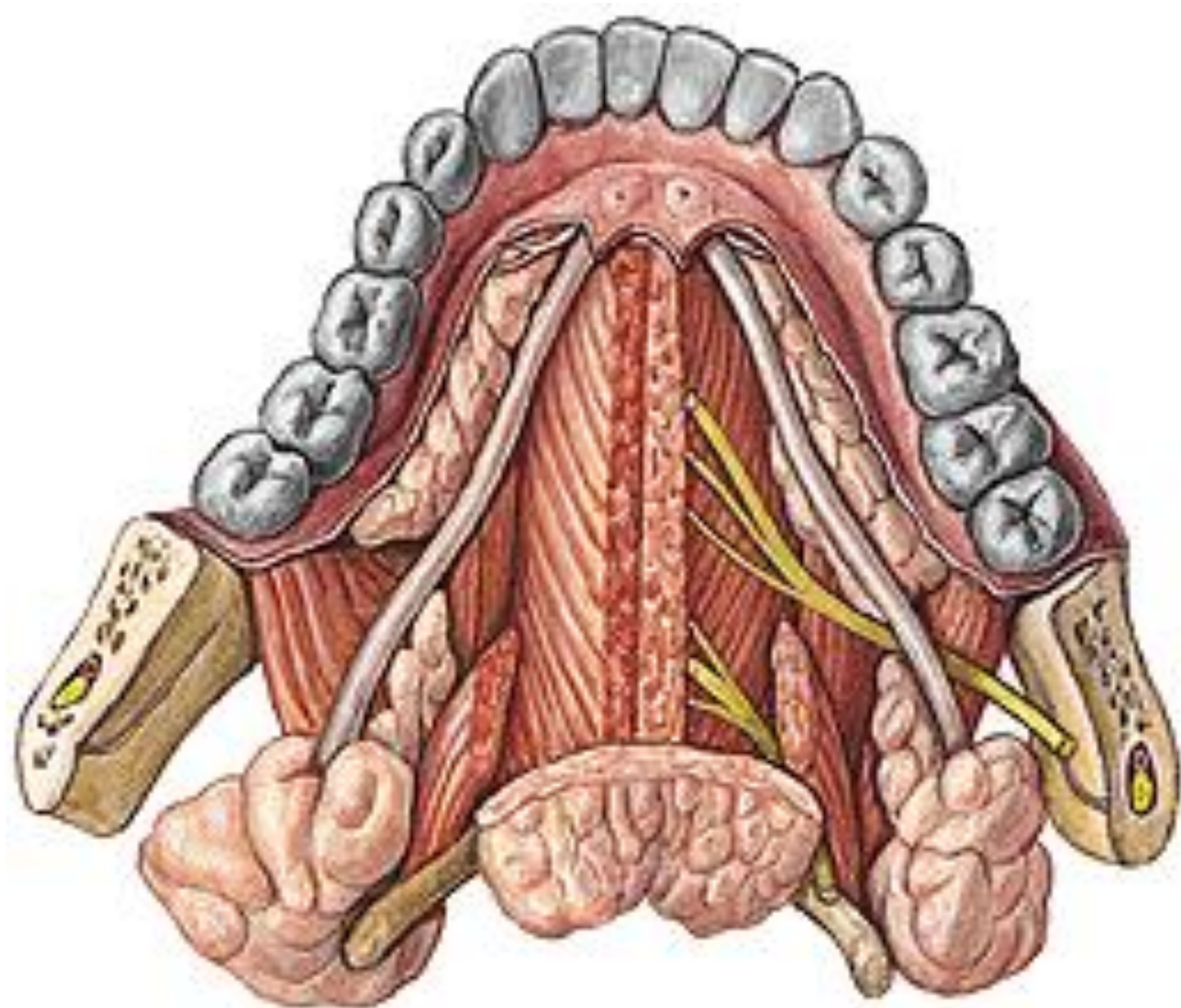
GLANDULA SUBLINGUALIS

Caruncula sublingualis:

- ductus submandibularis
- ductus sublingualis major

Ductuli sublinguales minores



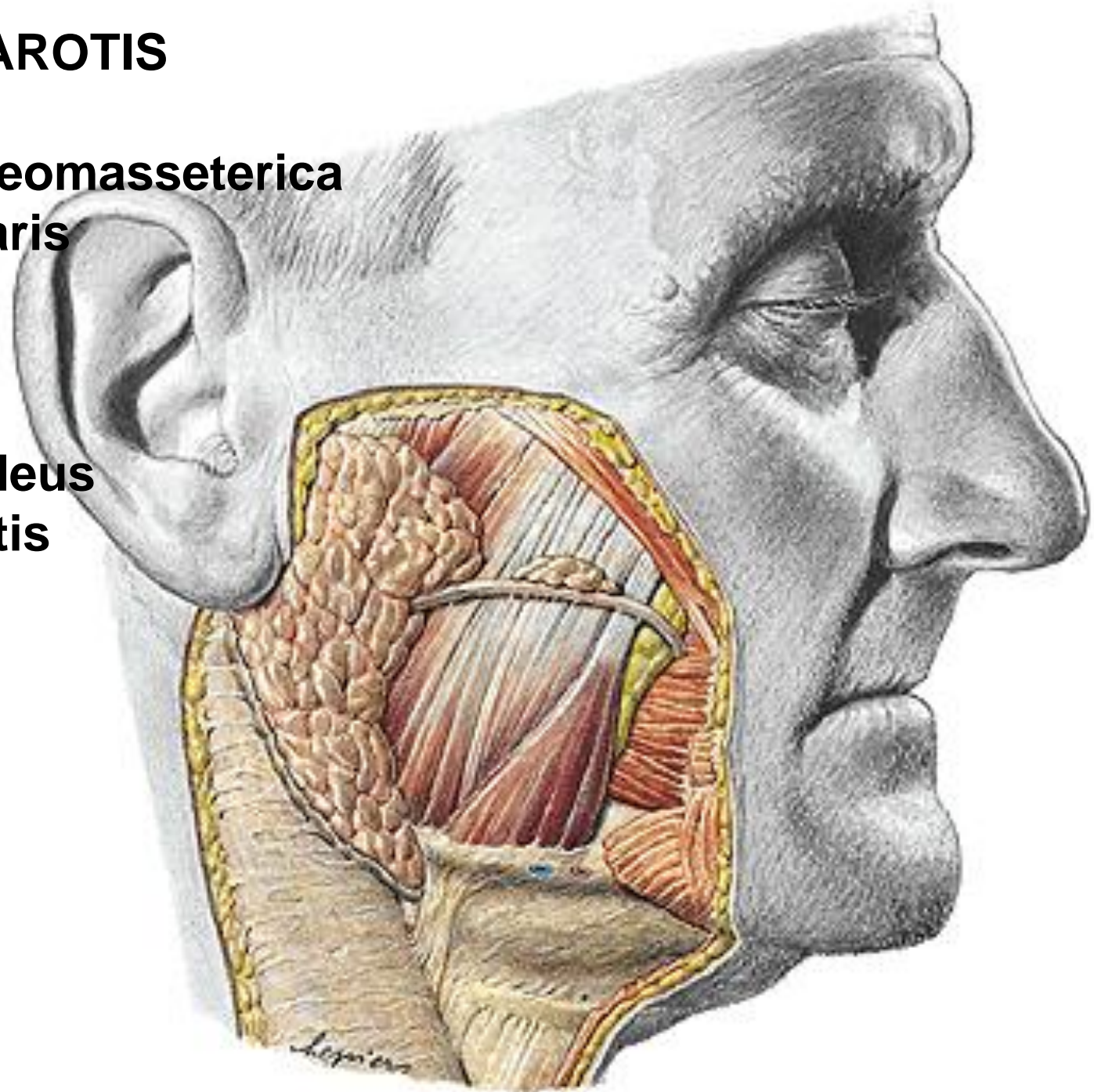




GLANDULA PAROTIS

Fascia parotideomasseterica
Tractus angularis

Ductus parotideus
Glandula parotis
accessoria



PAPILLA PAROTIDEA

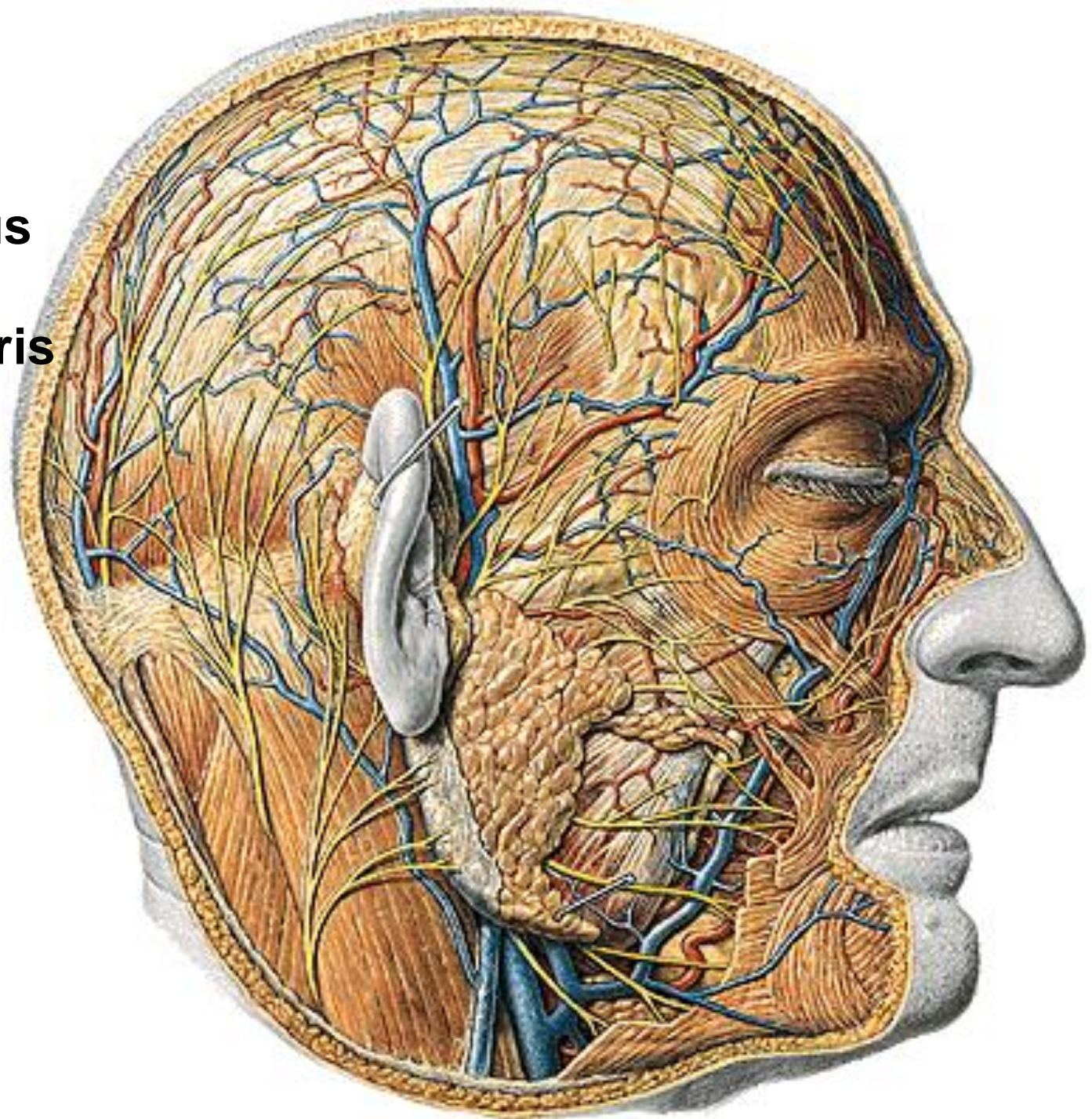


N. facialis (CN VII)

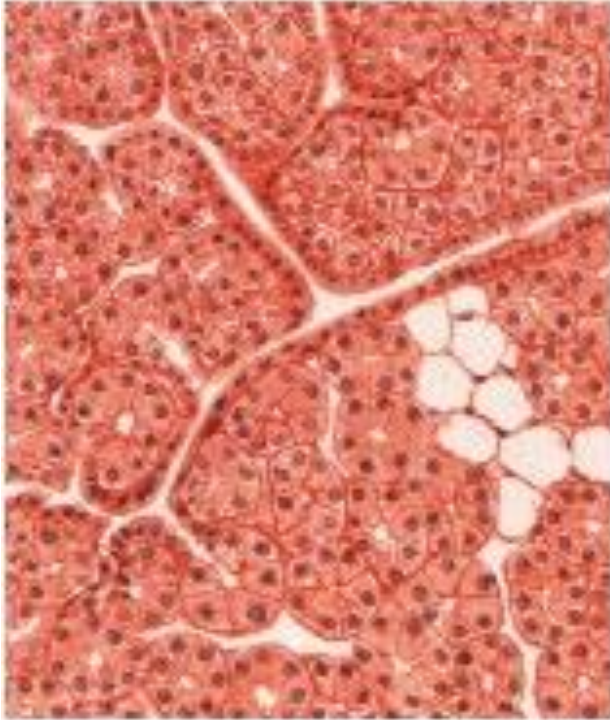
- plexus parotideus

V. retromandibularis

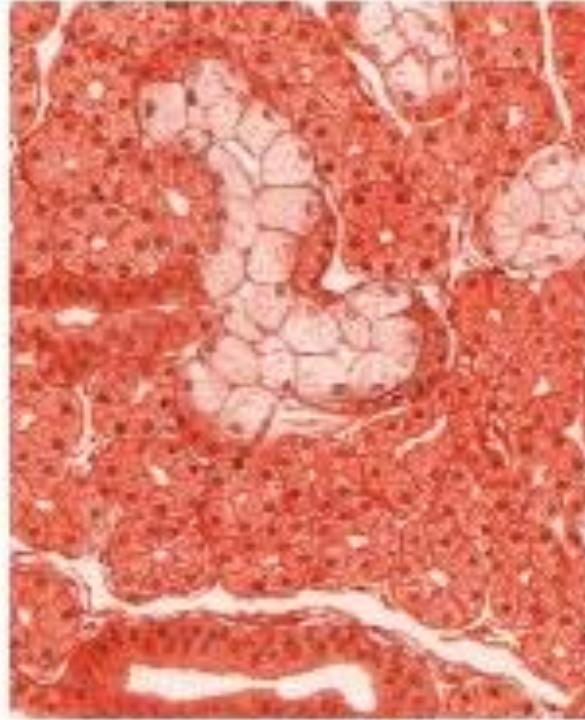
A. carotis ext.



SALIVARY GLANDS



Parotid gland: totally serous



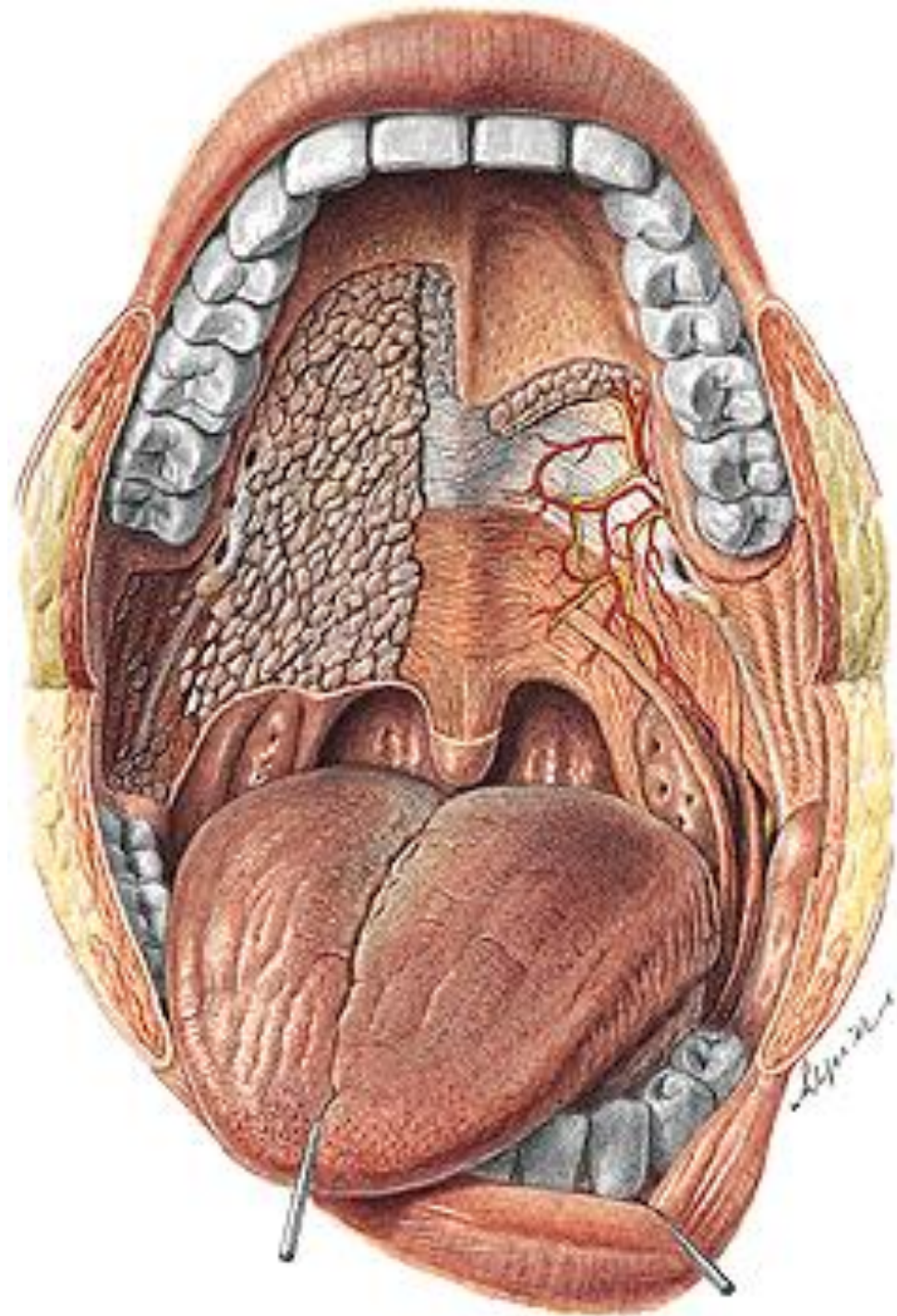
Submandibular gland:
mostly serous, partially mucous



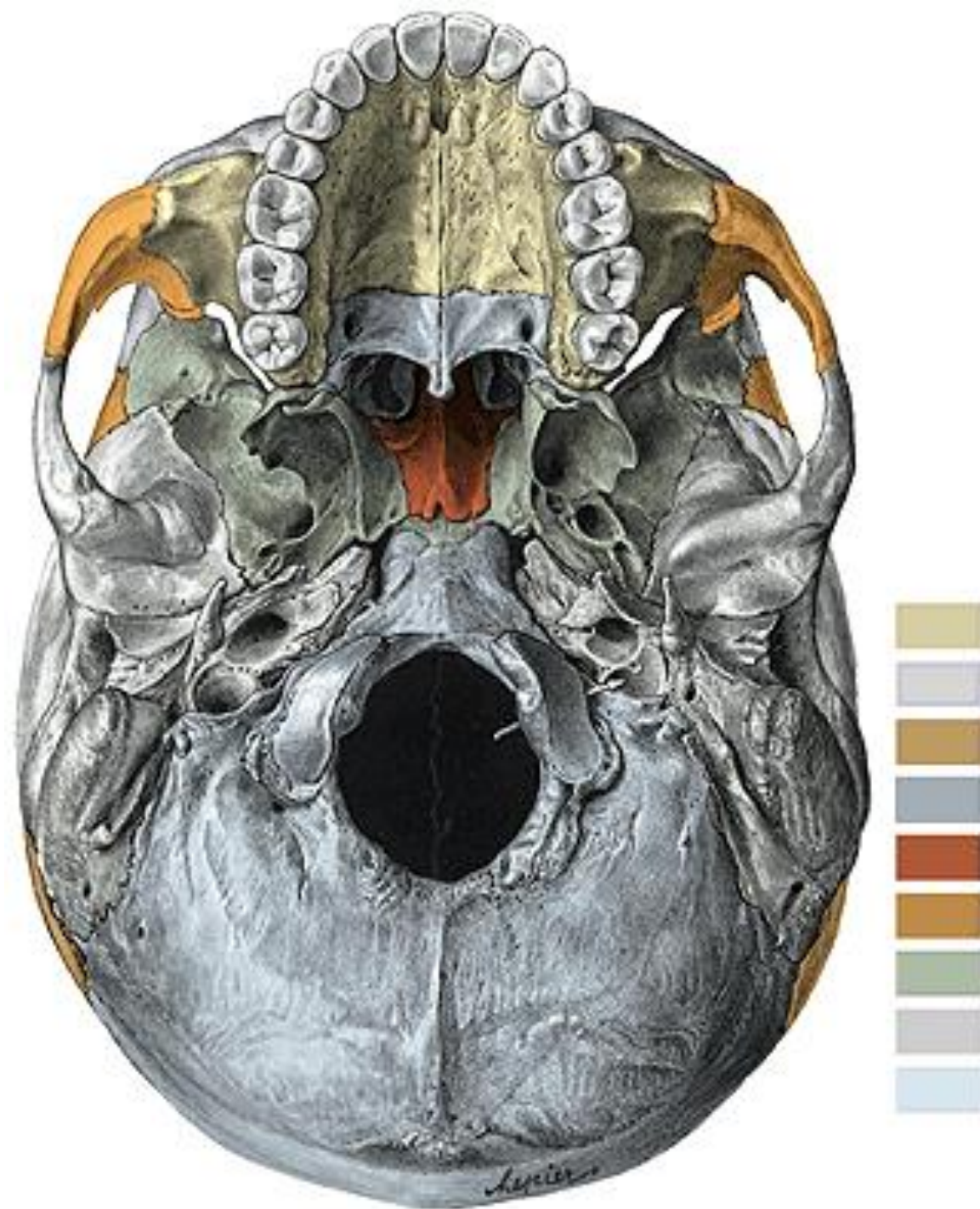
Sublingual gland:
almost completely mucous

PALATUM

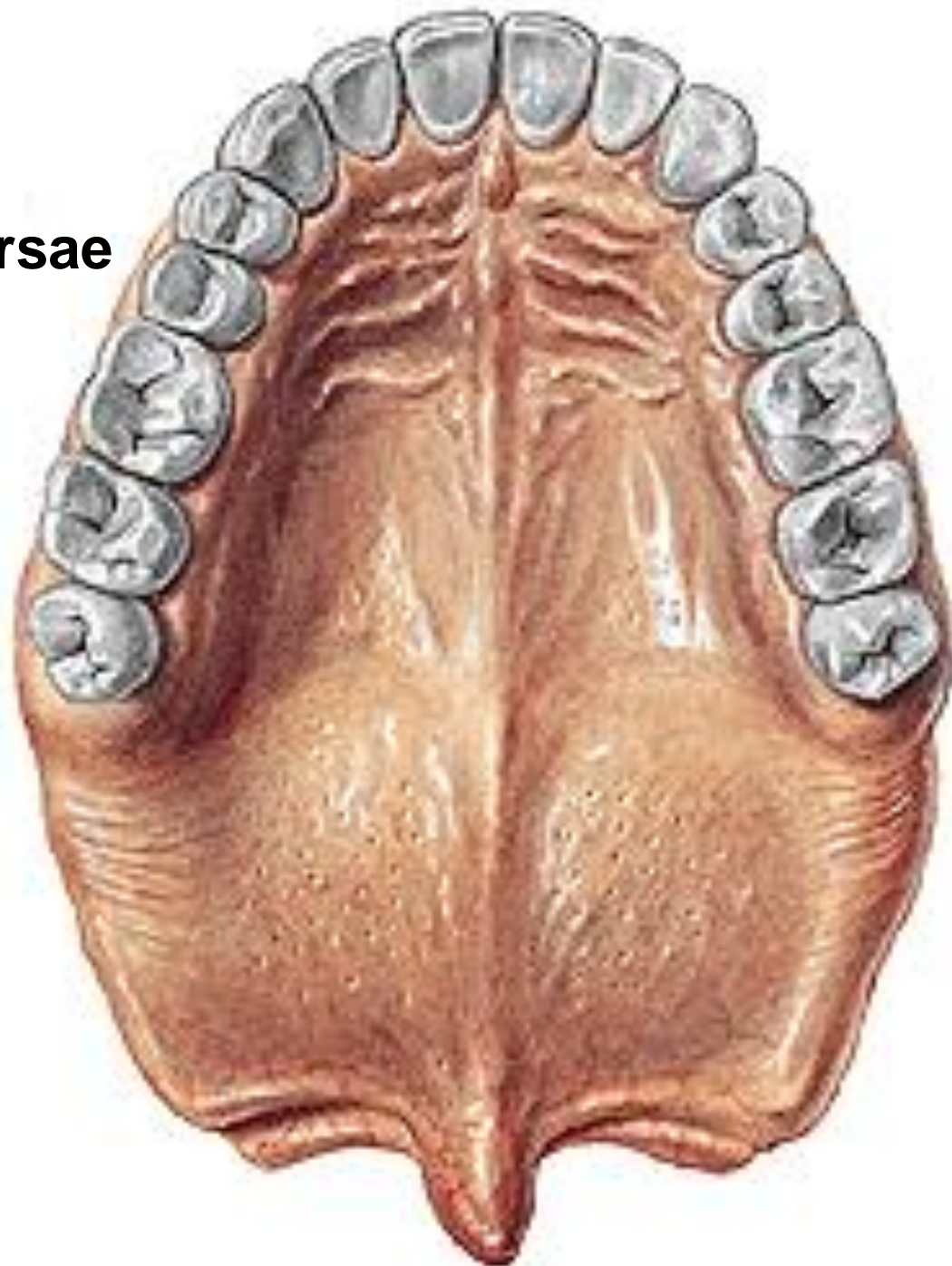
Glandulae palatinae
Aa. et vv. palatinae
majores et minores
Nn. palatini
majores et minores
N. napasopalatinus



PALATUM DURUM



Raphe palati
Papilla incisiva
Plicae palatinae transversae



**PALATUM MOLLE
(VELUM PALATINUM)**

Uvula

Arcus palatoglossus

Arcus palatopharyngeus

Isthmus faucium



TONSILLA PALATINA

Fossa tonsillaris

Plica semilunaris

Fossa supratonsillaris

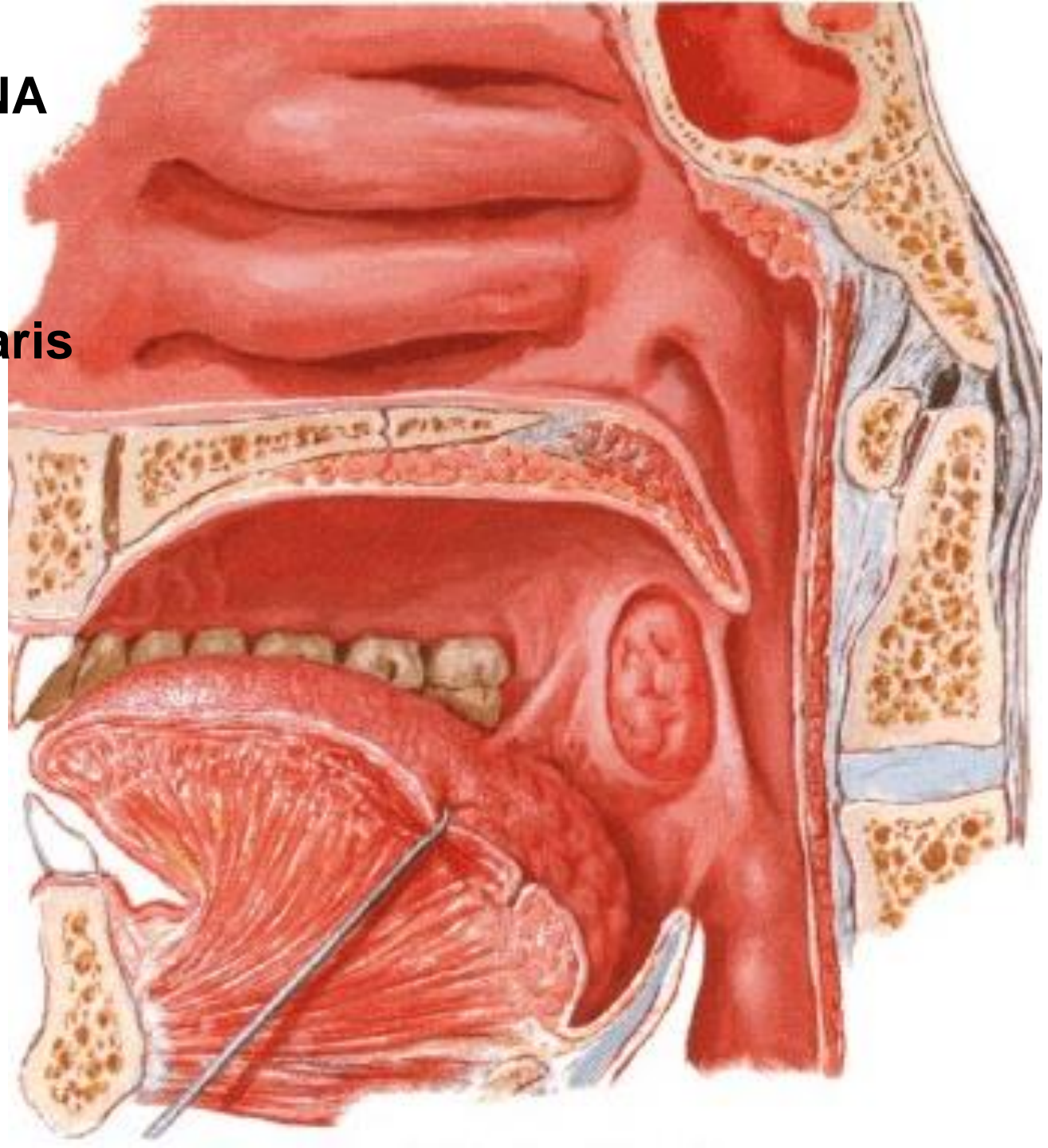
Plica triangularis

Capsula tonsillaris

Paratonsillar vein

Cryptae tonsillares

Tonsillar pegs

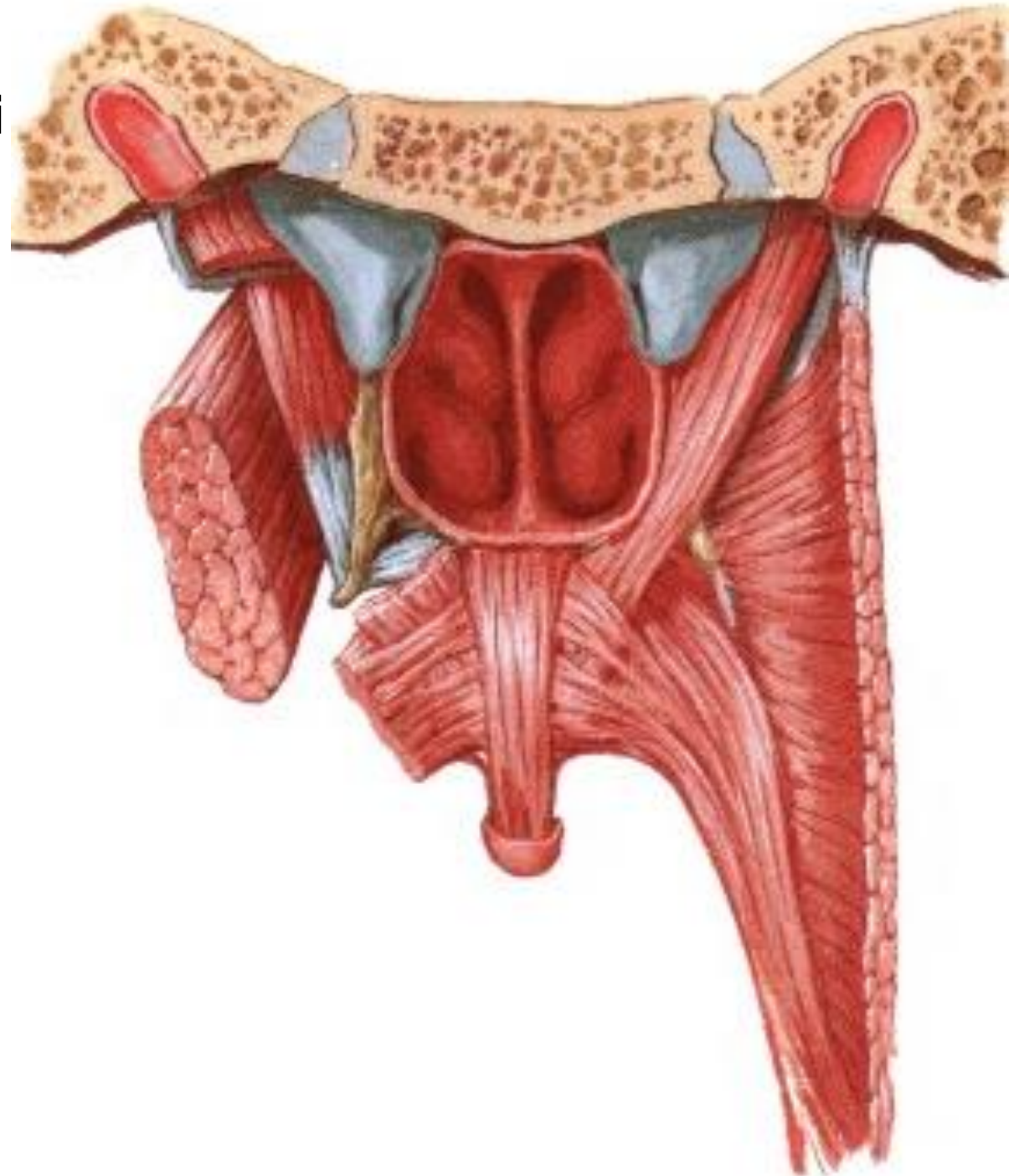


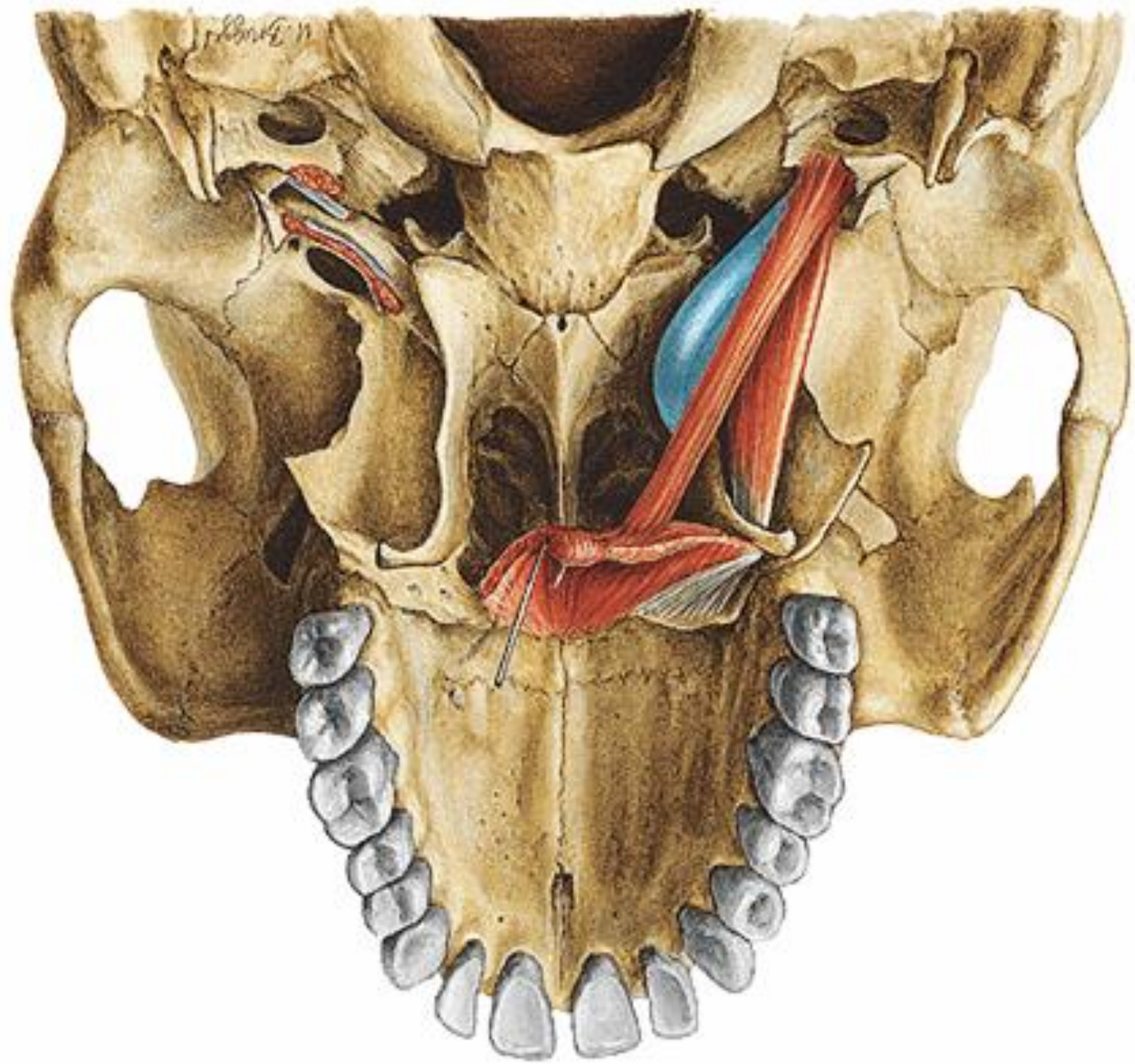
M. levator veli palatini
M. tensor veli palatini
M. uvulae
M. palatopharyngeus
M. palatoglossus

Aponeurosis palatina

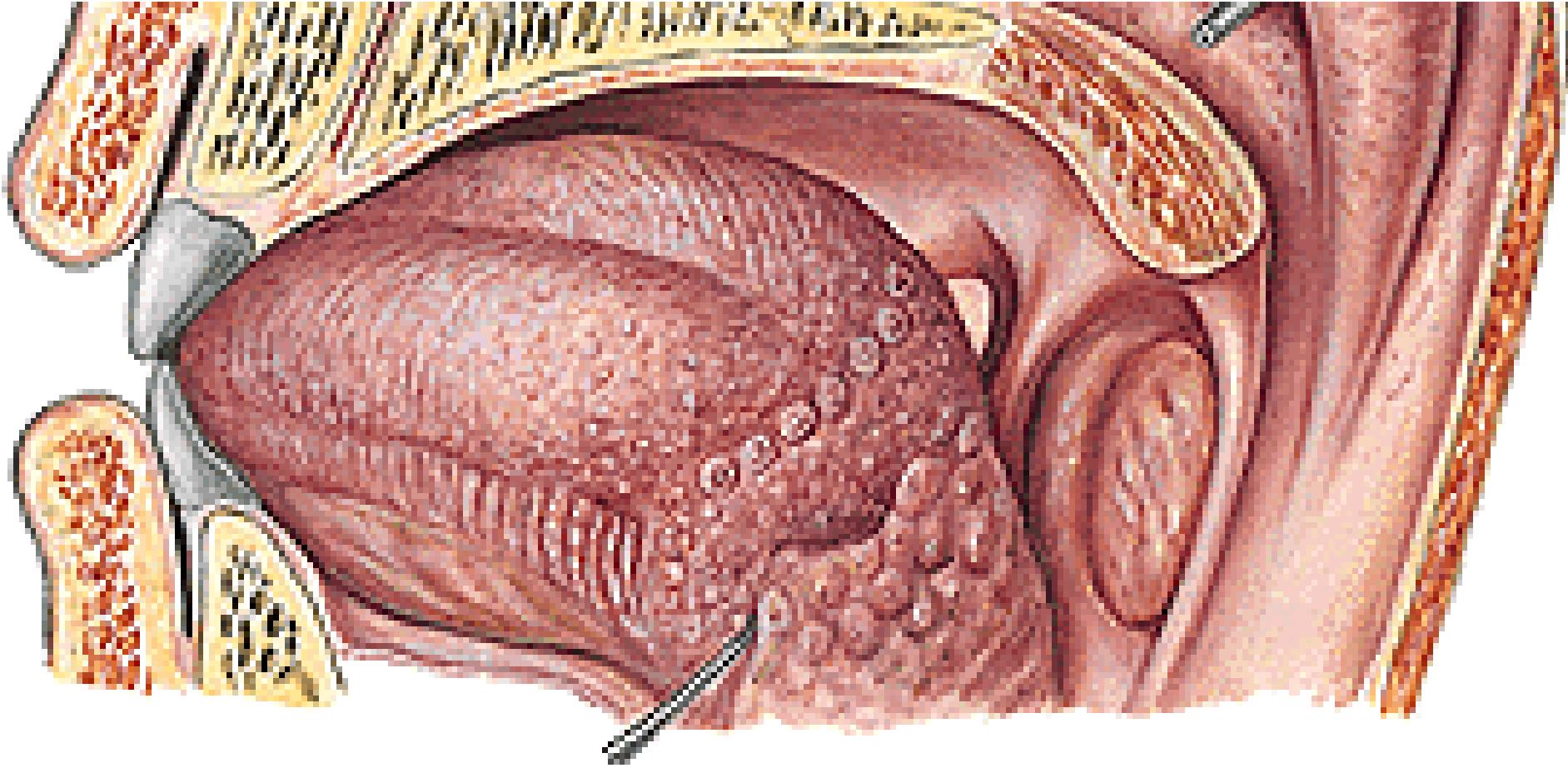
Plexus pharyngeus
– CN IX, X

Tensor – CN V





LINGUA – APEX, CORPUS, RADIX



DORSUM LINGUAE

Sulcus terminalis

Sulcus medianus

Foramen caecum

Ductus thyroglossus

Margines linguae

Papillae filiformes

Papillae fungiformes

Papillae foliatae

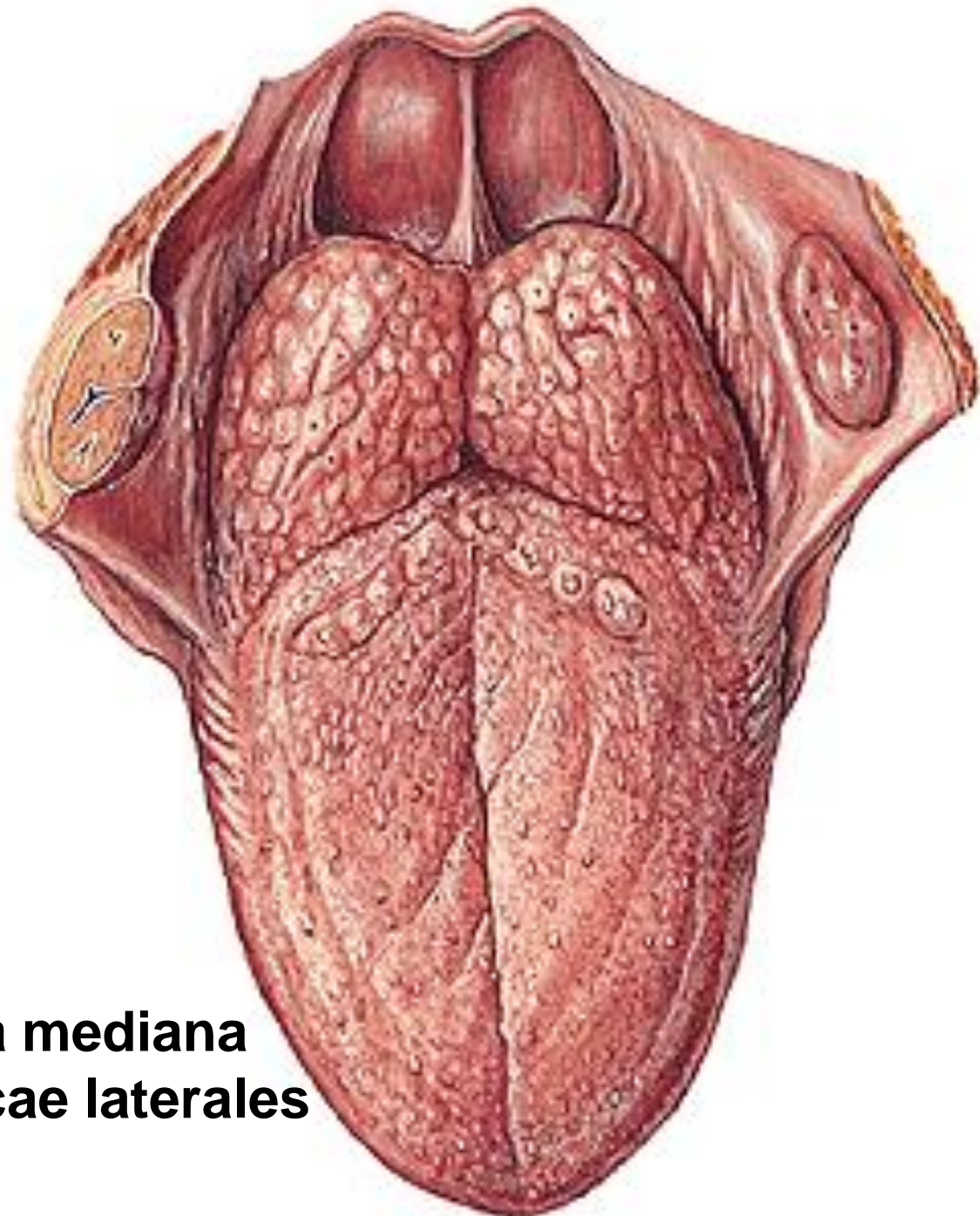
Papillae vallatae

Tonsilla lingualis

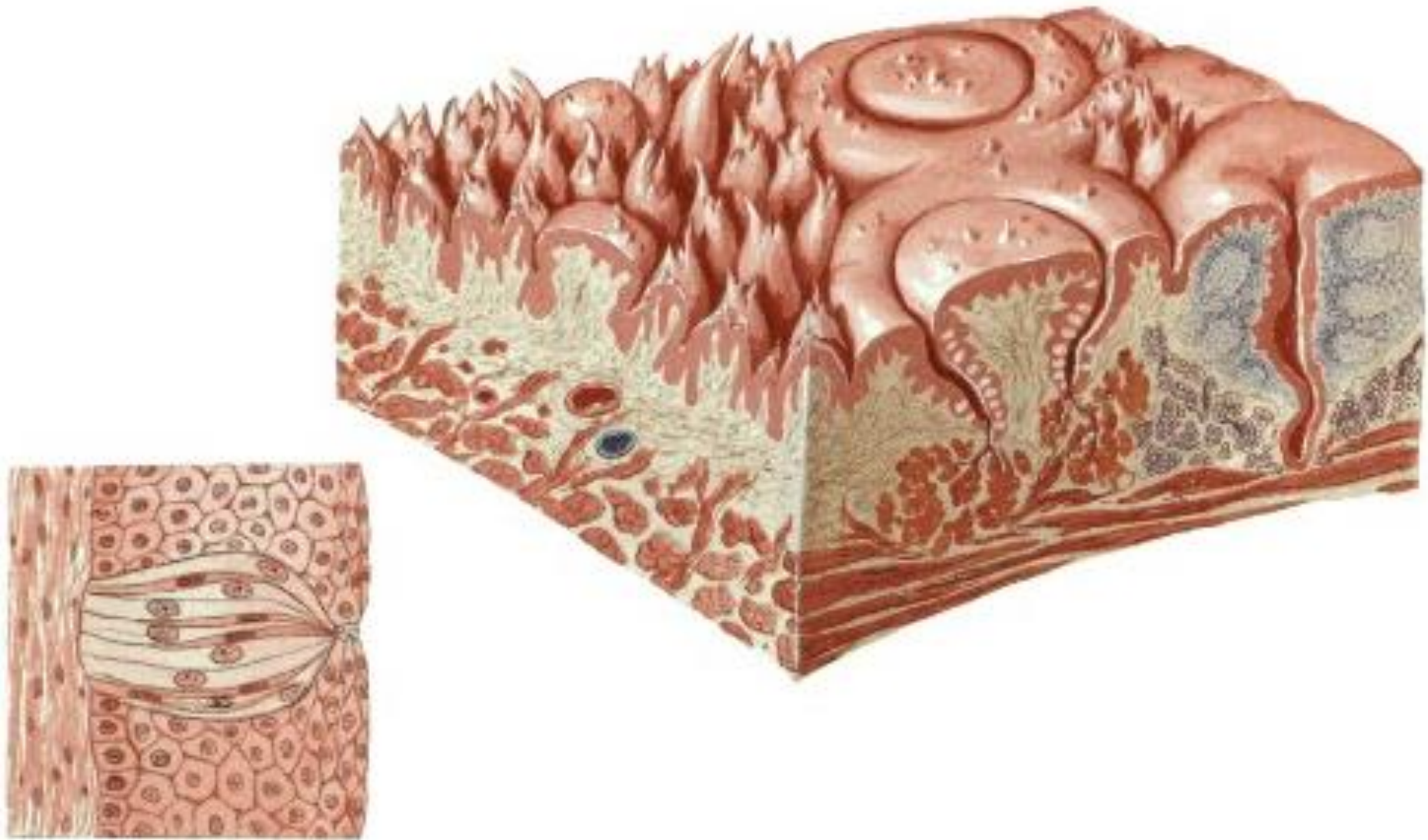
Plica glossoepiglottica mediana

Plicae glossoepiglotticae laterales

Valleculae epiglotticae



Caliculi gustatorii



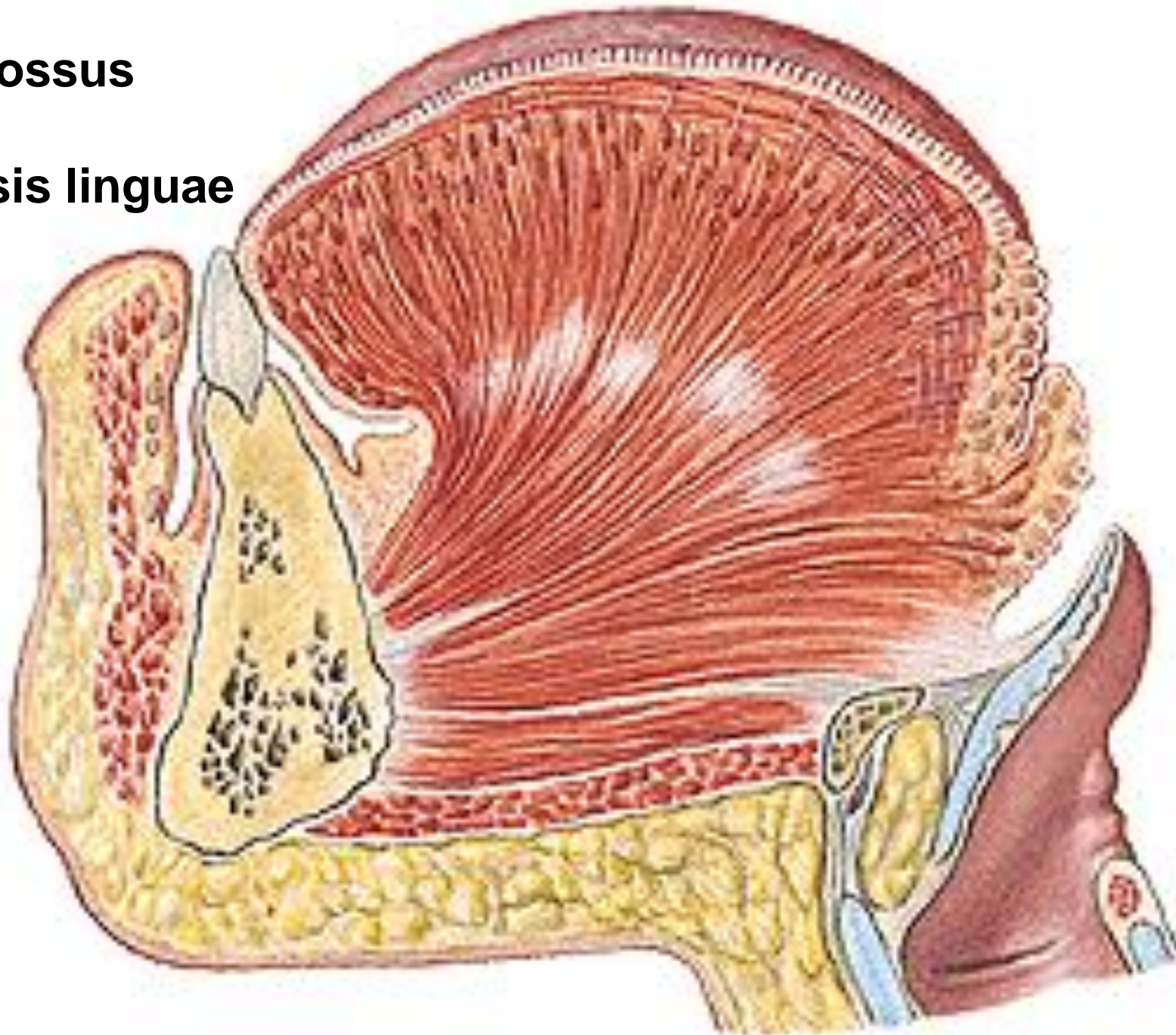
Facies inferior linguae
Plica fimbriata

Frenulum linguae
Plica sublingualis

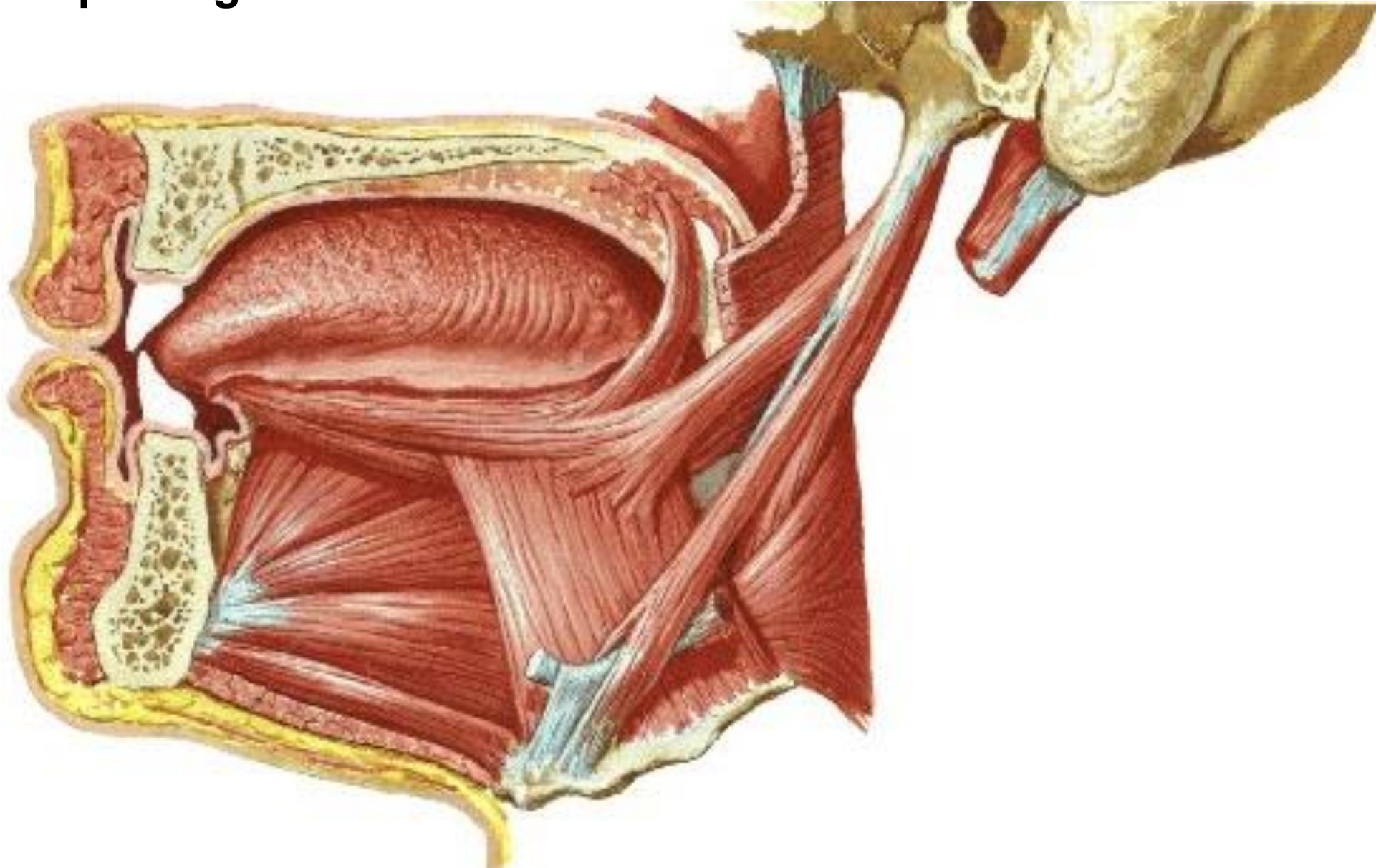


M. genioglossus

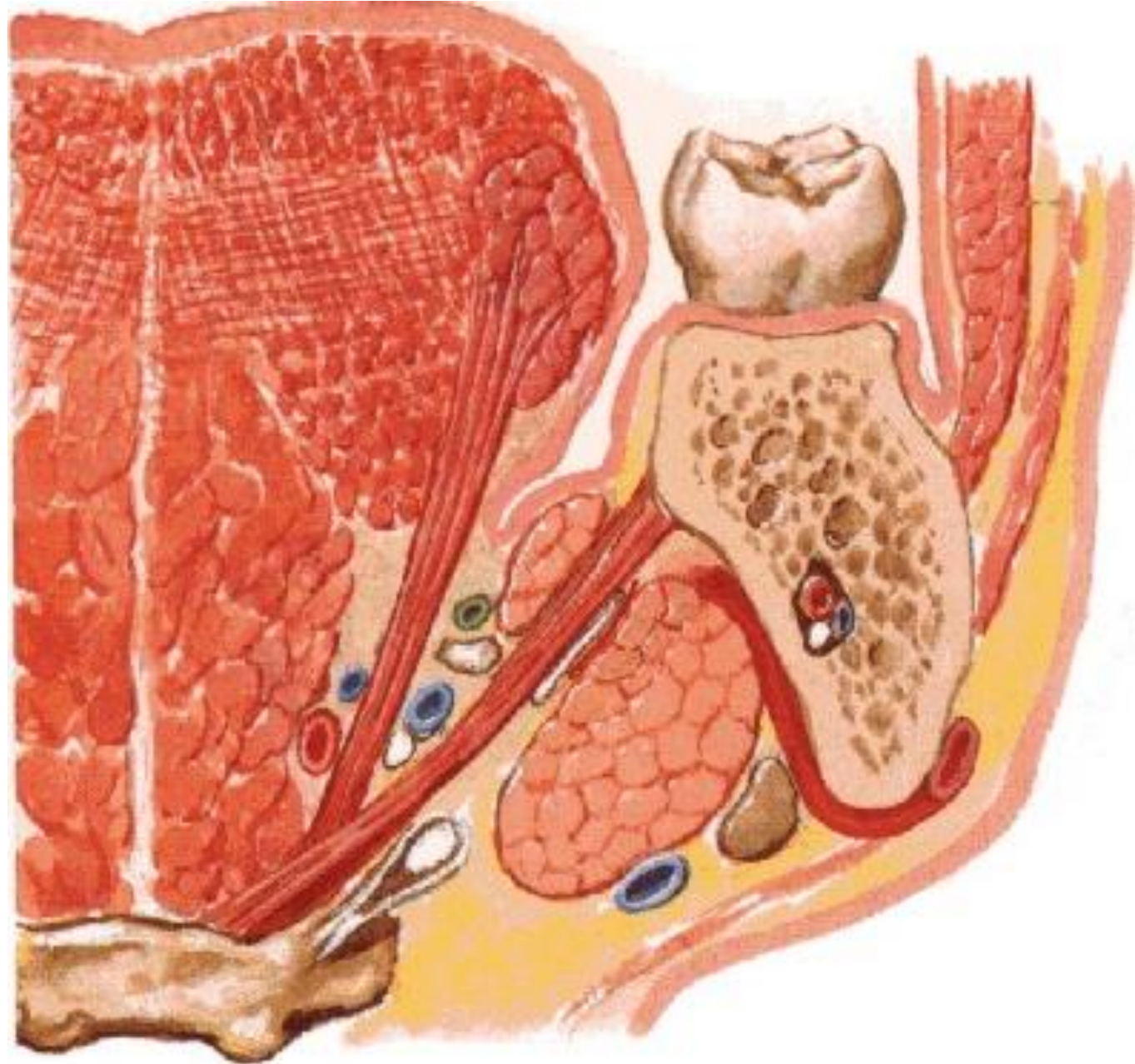
Aponeurosis linguae



M. hyoglossus
M. styloglossus
M. palatoglossus



Canalis paralingualis – a. et v. lingualis



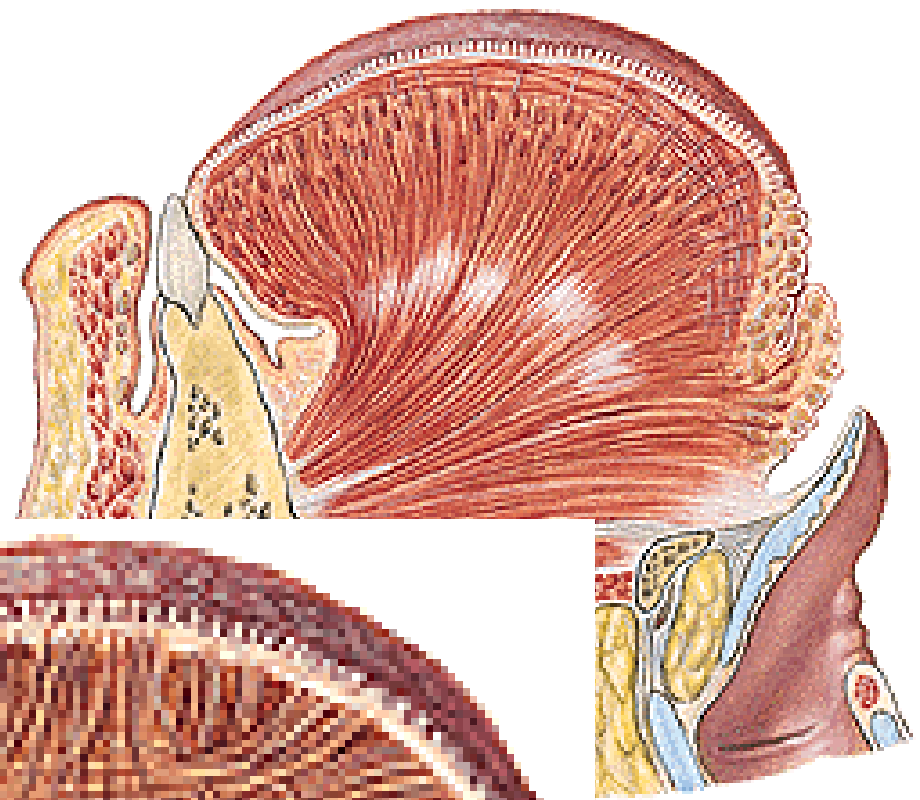
Septum linguae

M. longitudinalis sup.

M. longitudinalis inf.

M. transversus linguae

M. verticalis linguae

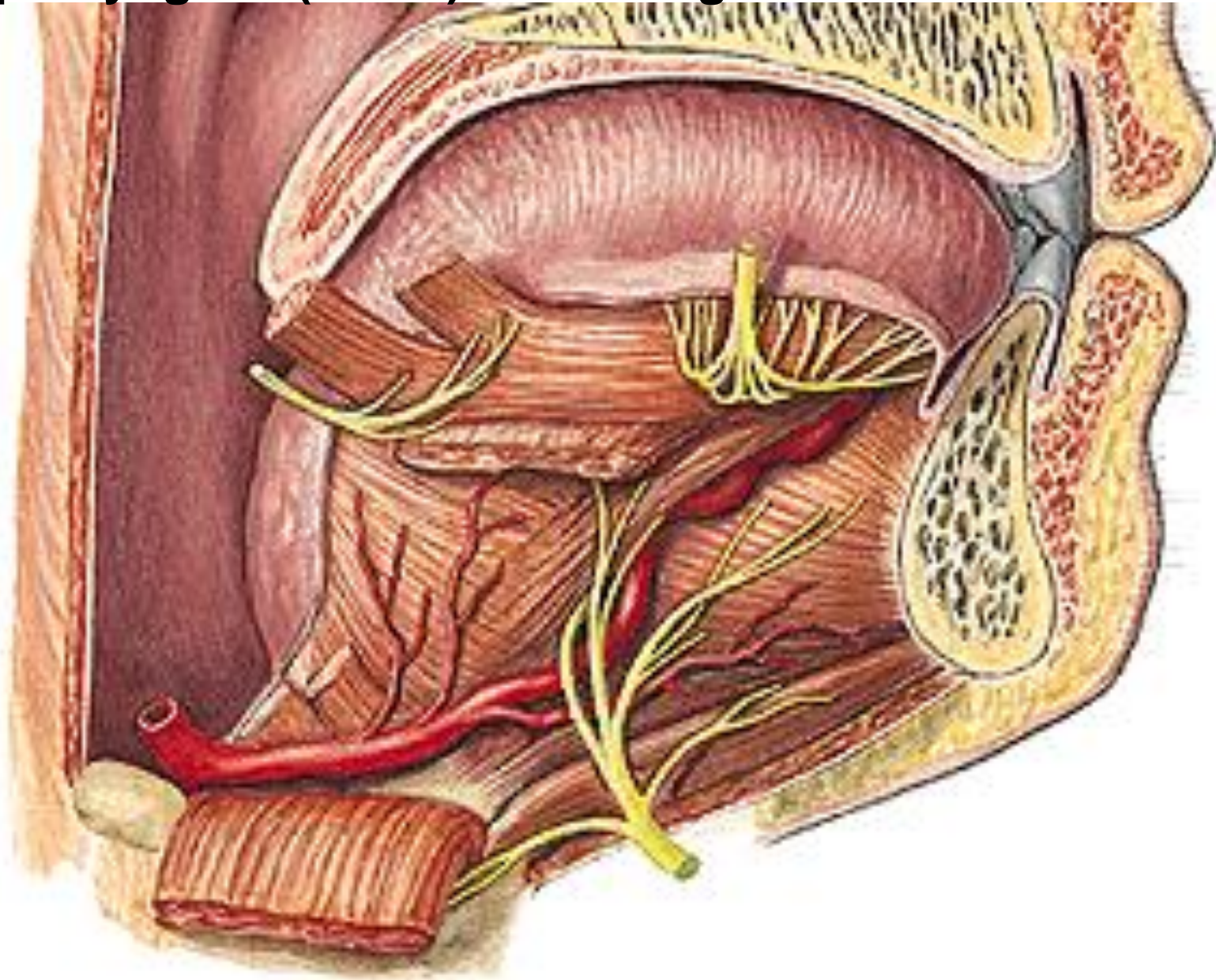


N. lingualis

N. glossopharyngeus (CN IX)

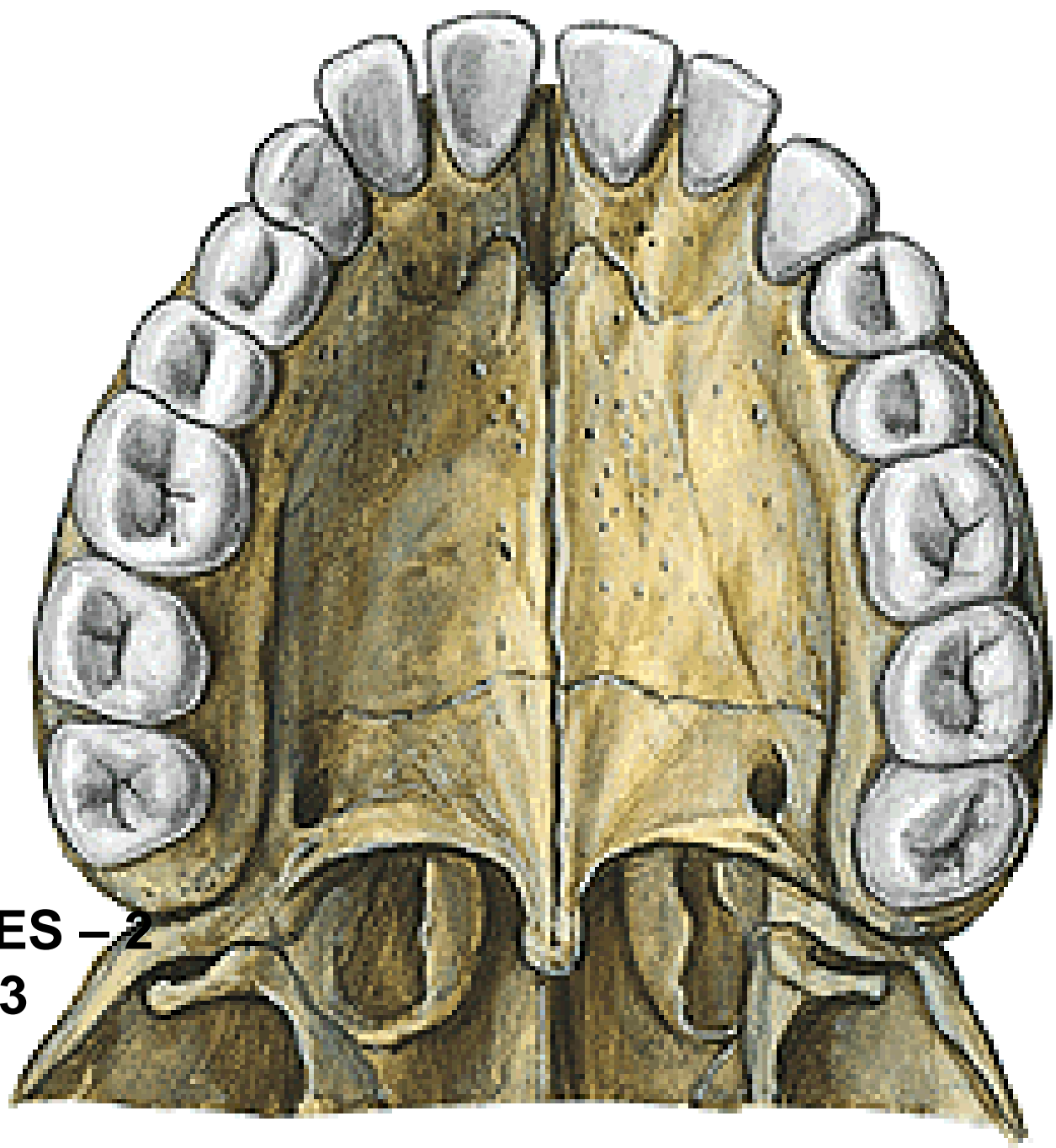
N. hypoglossus (CN XII)

A. lingualis



**DENTES
PERMANENTES**

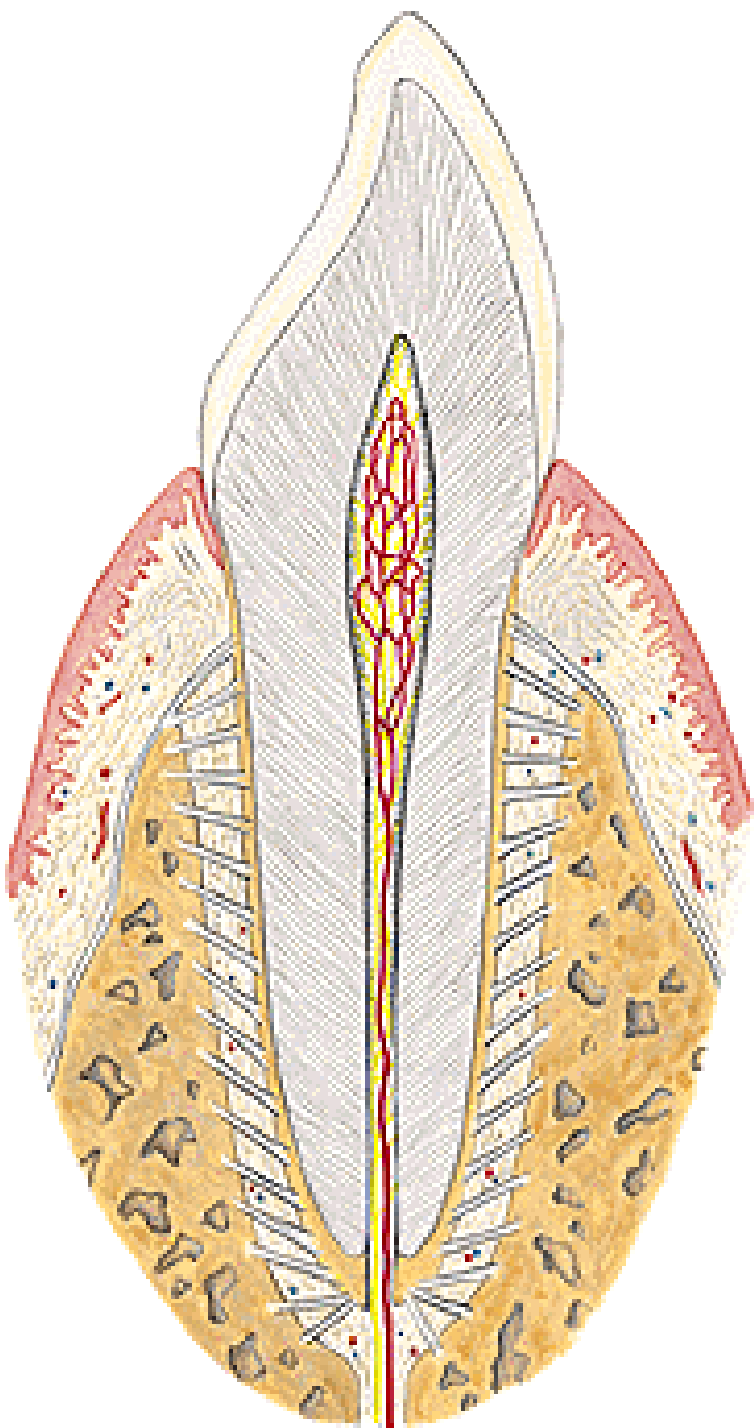
DENTES INCISIVI - 2
DENS CANINUS - 1
DENTES PREMOLARES - 2
DENTES MOLARES - 3



CORONA DENTIS

COLLUM DENTIS

RADIX DENTIS



CORONA:

Facies occlusalis

- tubercula dentalia

Facies approximales

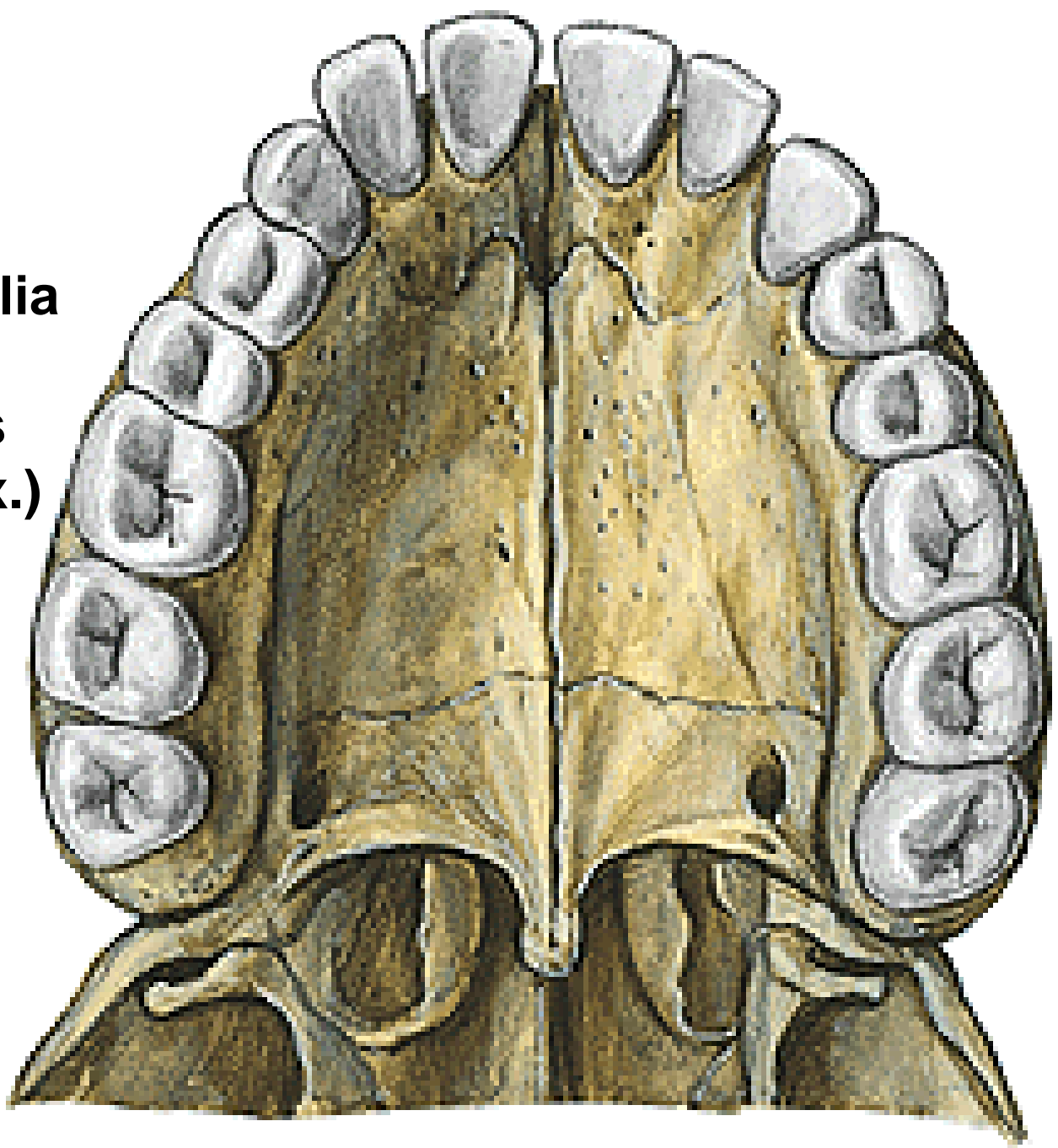
- f. mesialis (prox.)
- f. distalis

Facies vestibularis

- f. labialis
- f. buccalis

Facies oralis

- f. palatina
- f. lingualis



CAVUM DENTIS

CANALIS RADICIS DENTIS

FORAMEN APICIS DENTIS

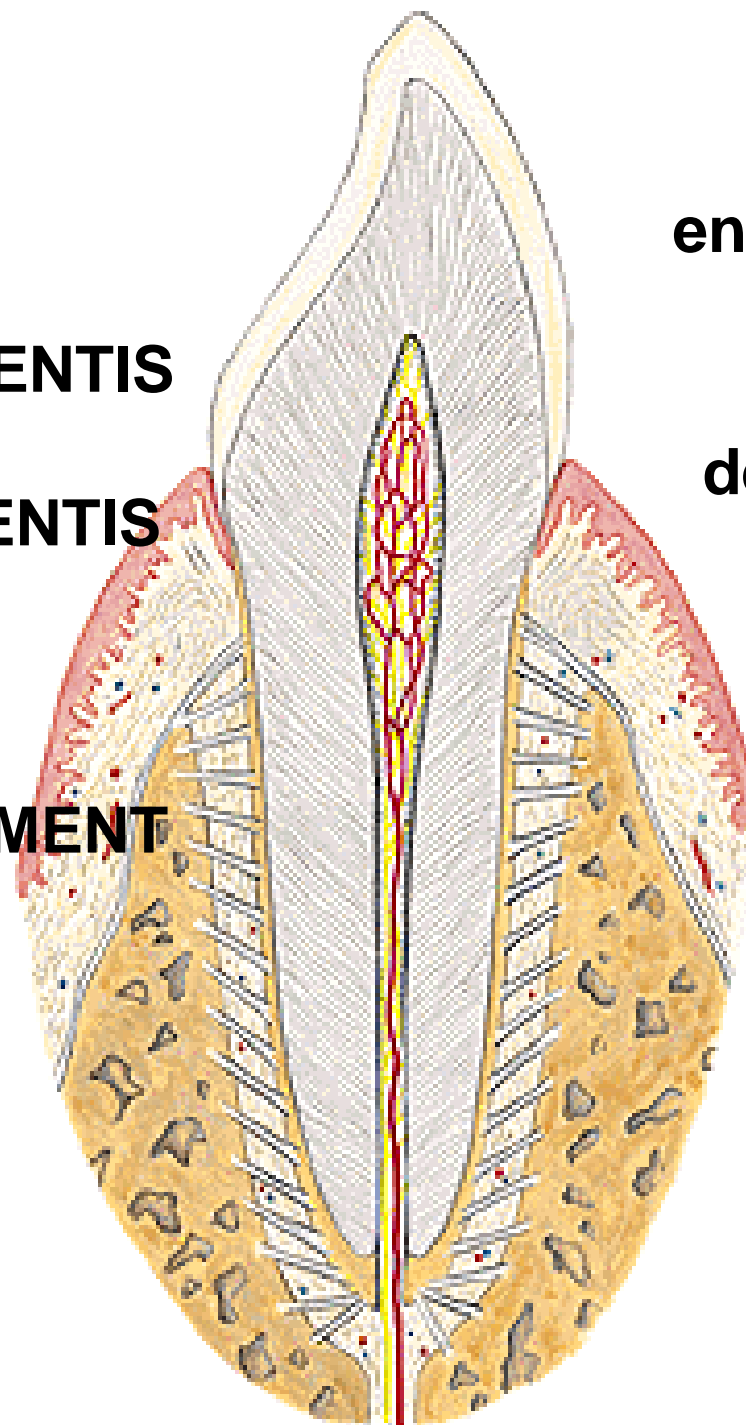
GOMPHOSIS

**PERIODONTAL LIGAMENT
(P. MEMBRANE;
PARODONTIUM)
Sharpey's fibers**

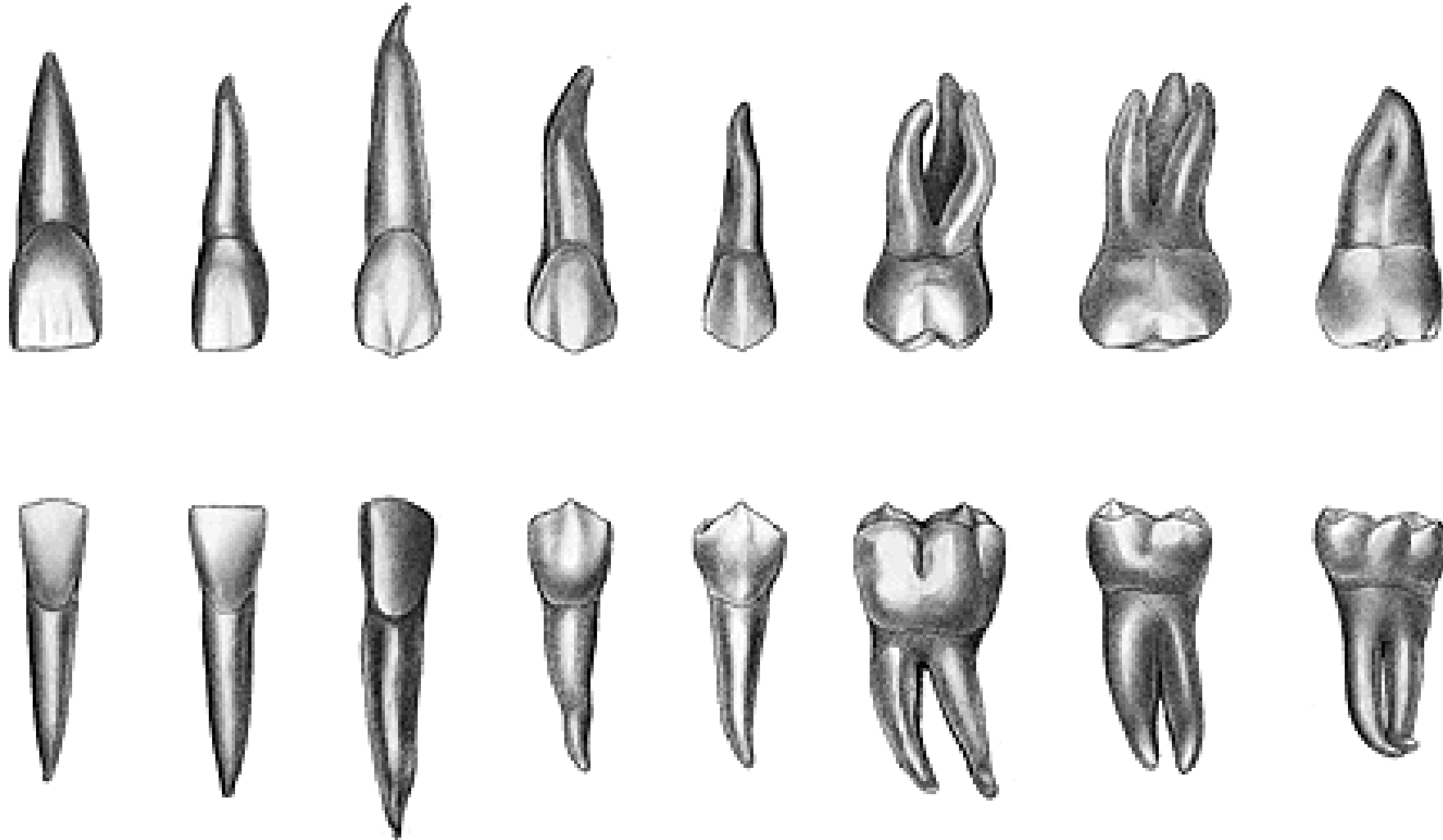
enamelum

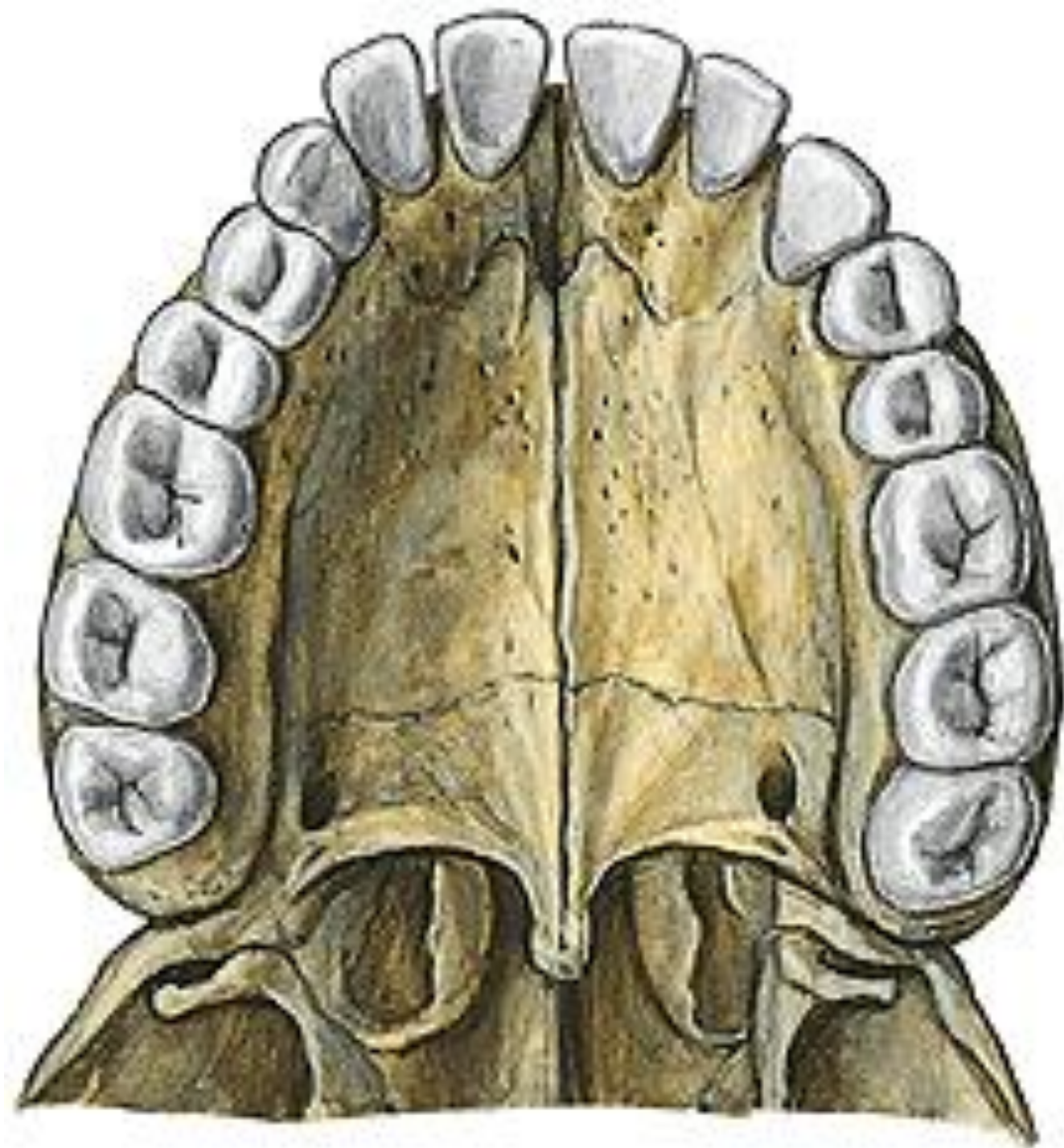
dentinum

cementum

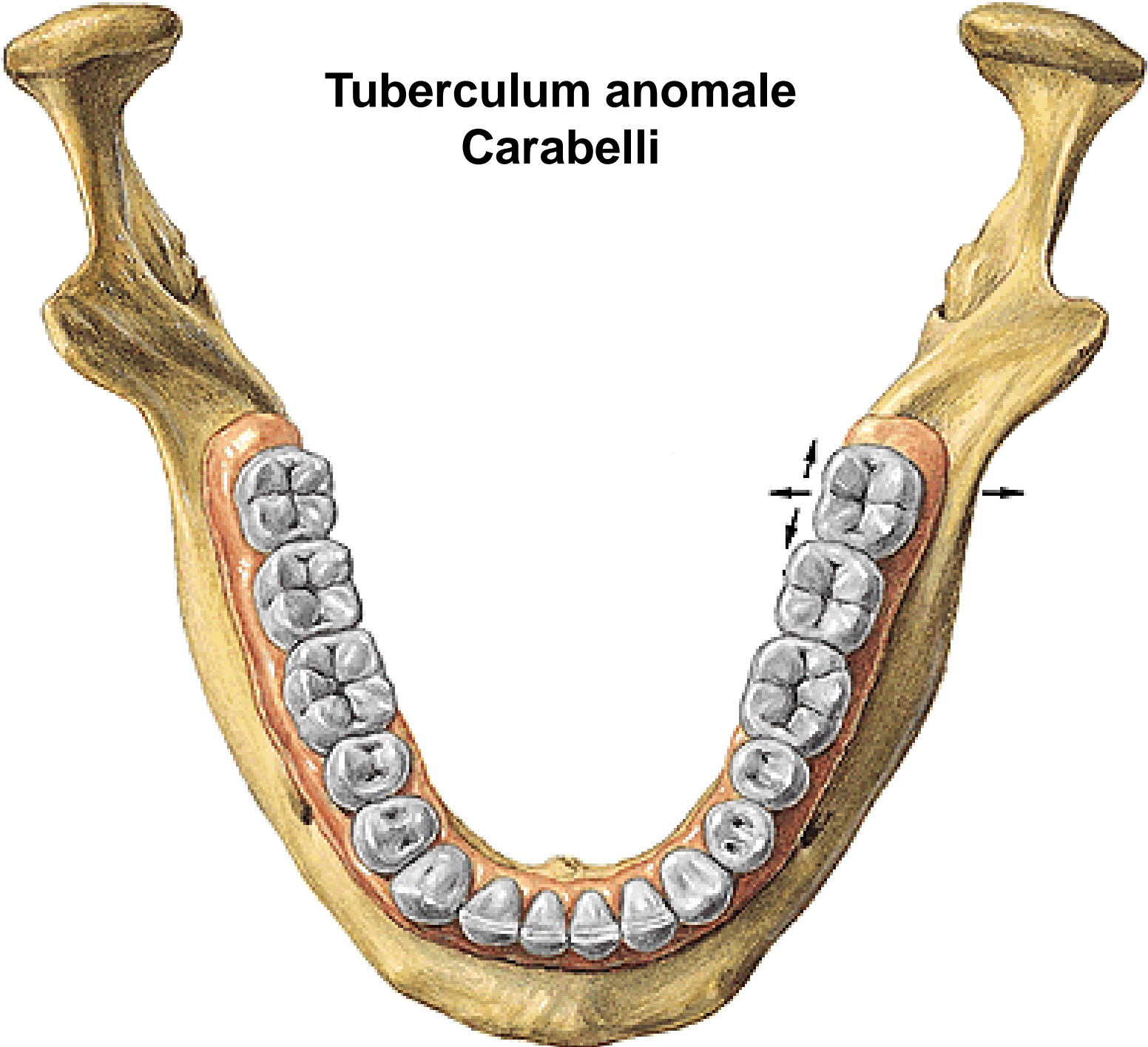


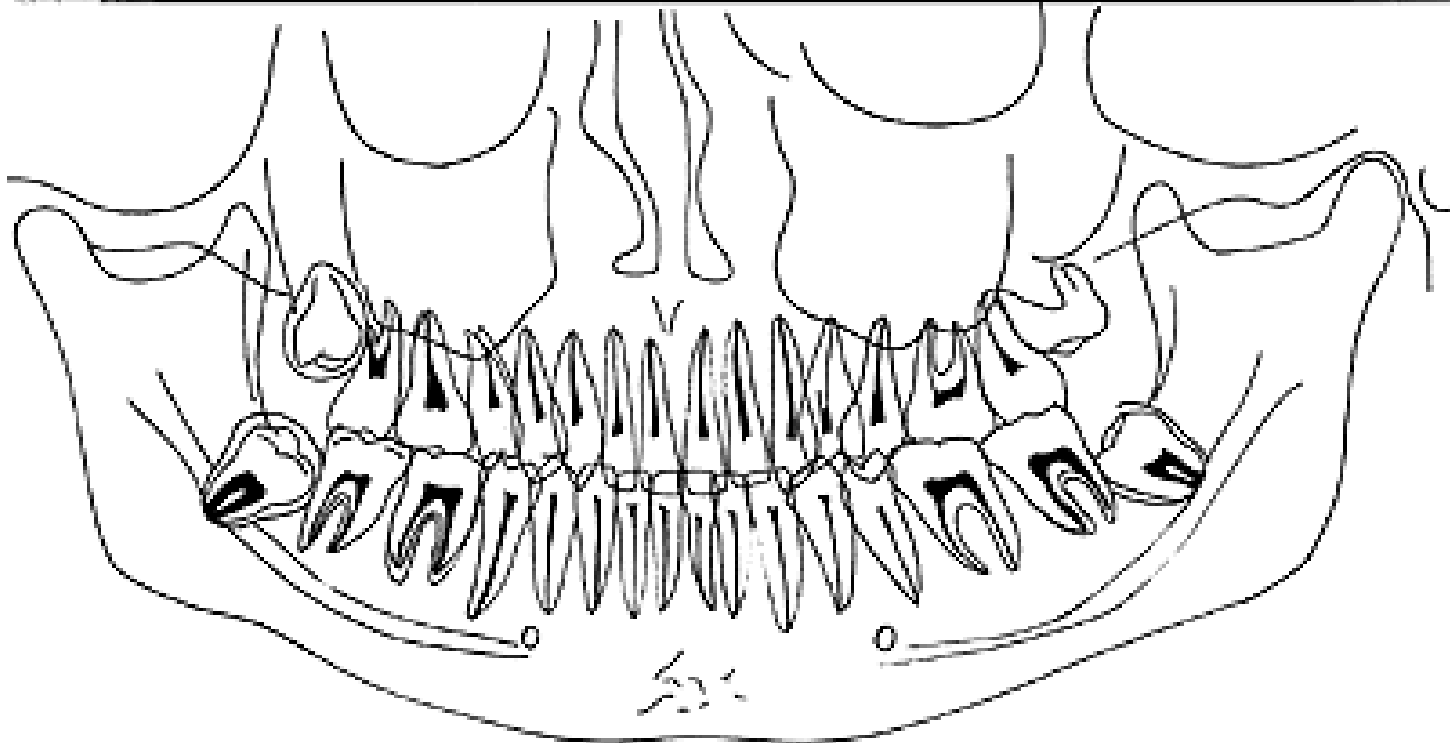
DENTES INCISIVI - 2
DENS CANINUS - 1
DENTES PREMOLARES - 2
DENTES MOLARES - 3





**Tuberculum anomale
Carabelli**

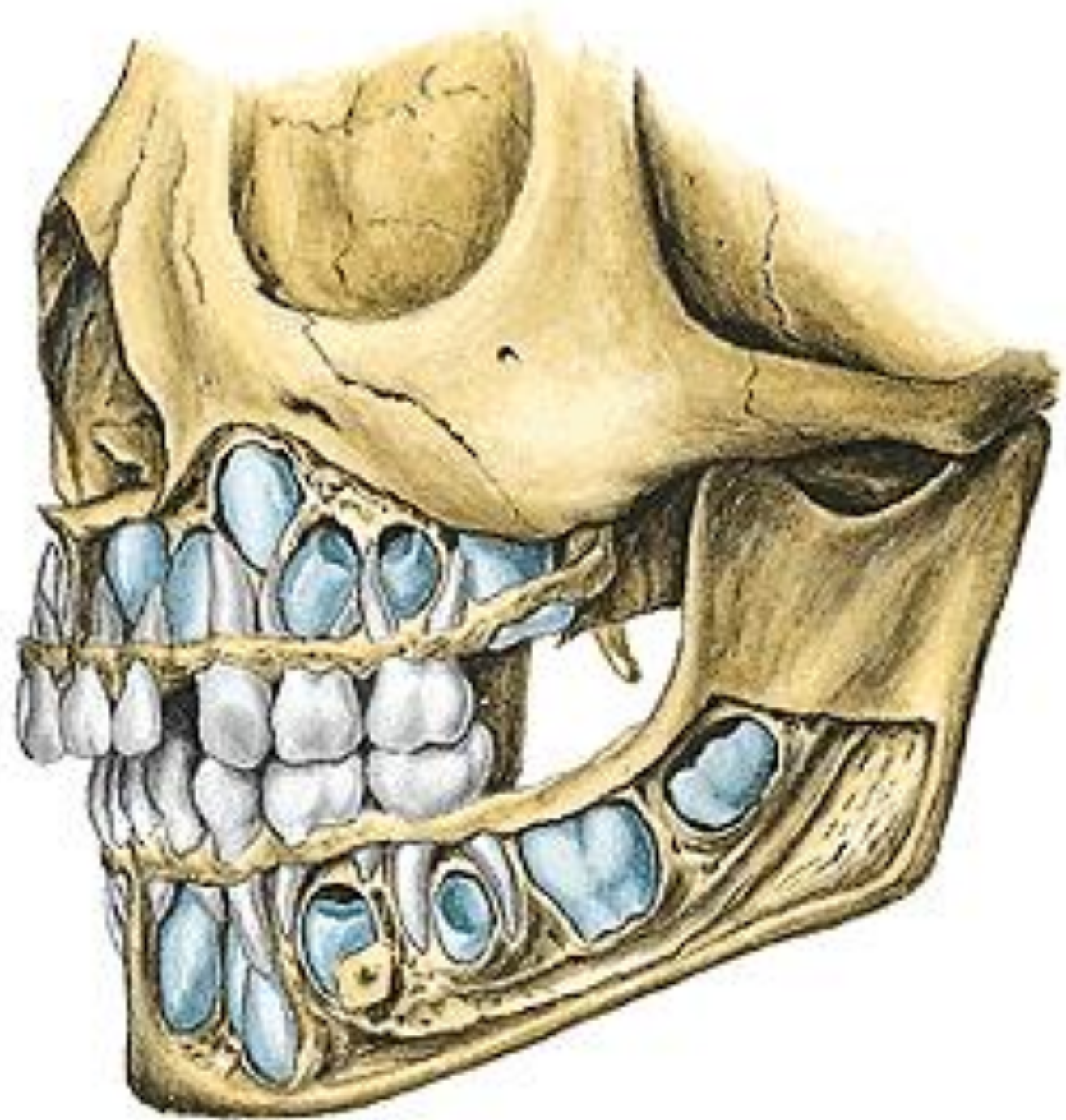




DENTES INCISIVI - 2
DENS CANINUS - 1
DENTES MOLARES - 2

DENTES DECIDUI





Eruption:

I 6th- 8th month

II 8th-12th month

III 16th-20th month

IV 12th-16th month

V 20th-36th month

I, II, IV, III, V

Exchange of the teeth:

1 7th-8th year

2 8th-9th year

3 11th-13th year

4 9th-11th year

5 11th-13th year

6 6th-7th year

7 12th-14th year

8 17th-40th year

6, 1, 2, 4, 3, 5, 7, 8

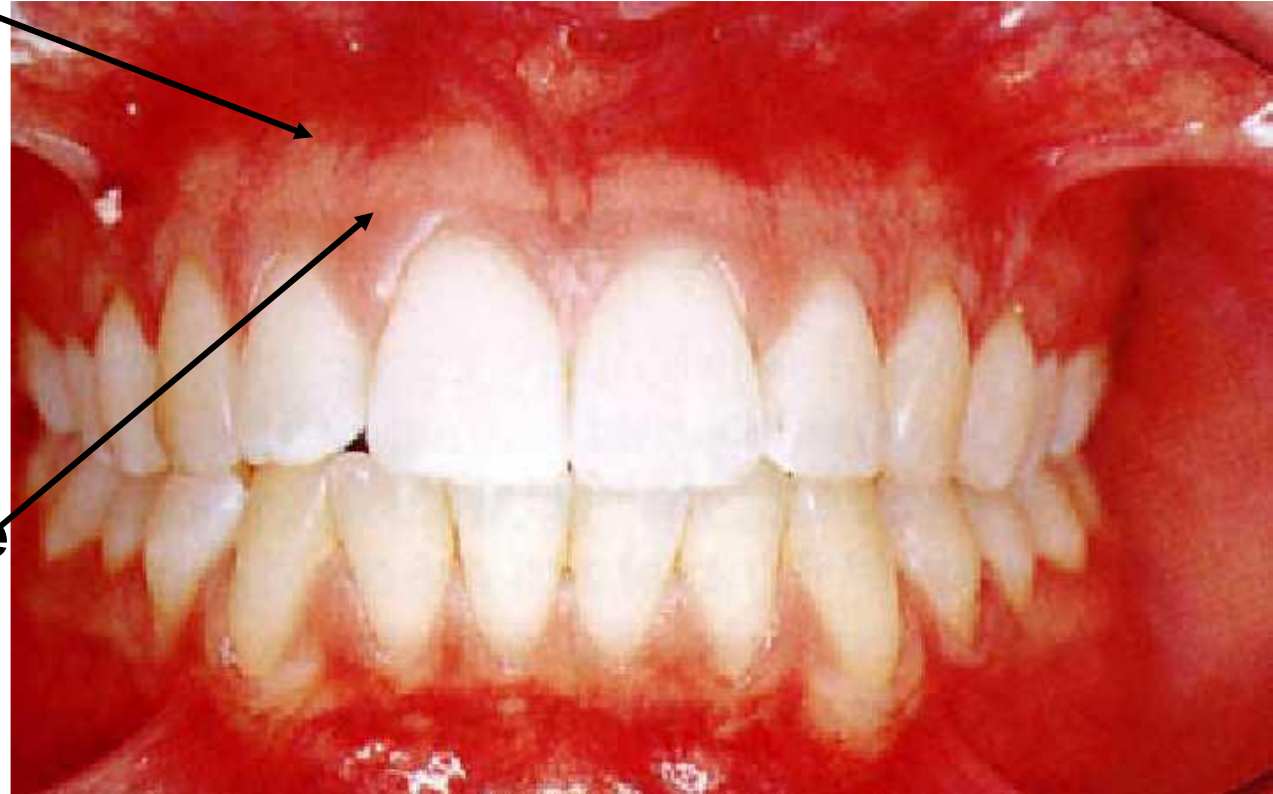
Alveolar mucosa

Gingiva - gingiva fixa (attached g.)

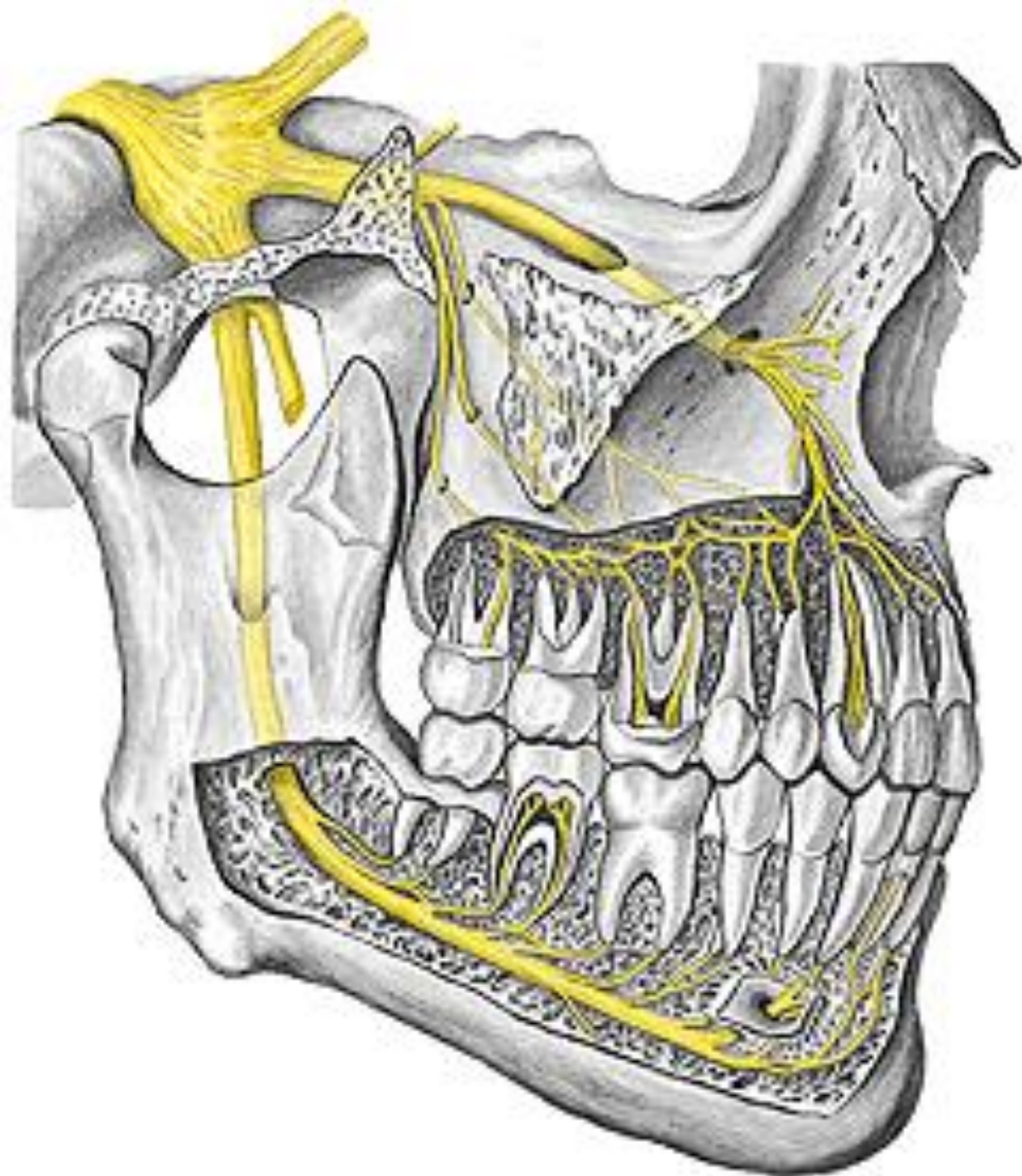
- gingiva libera (marginal g.), gingival sulcus

Mucogingival border

Paramarginal groove



OCCLUSION (PROGNATHISM, PROGENISM)

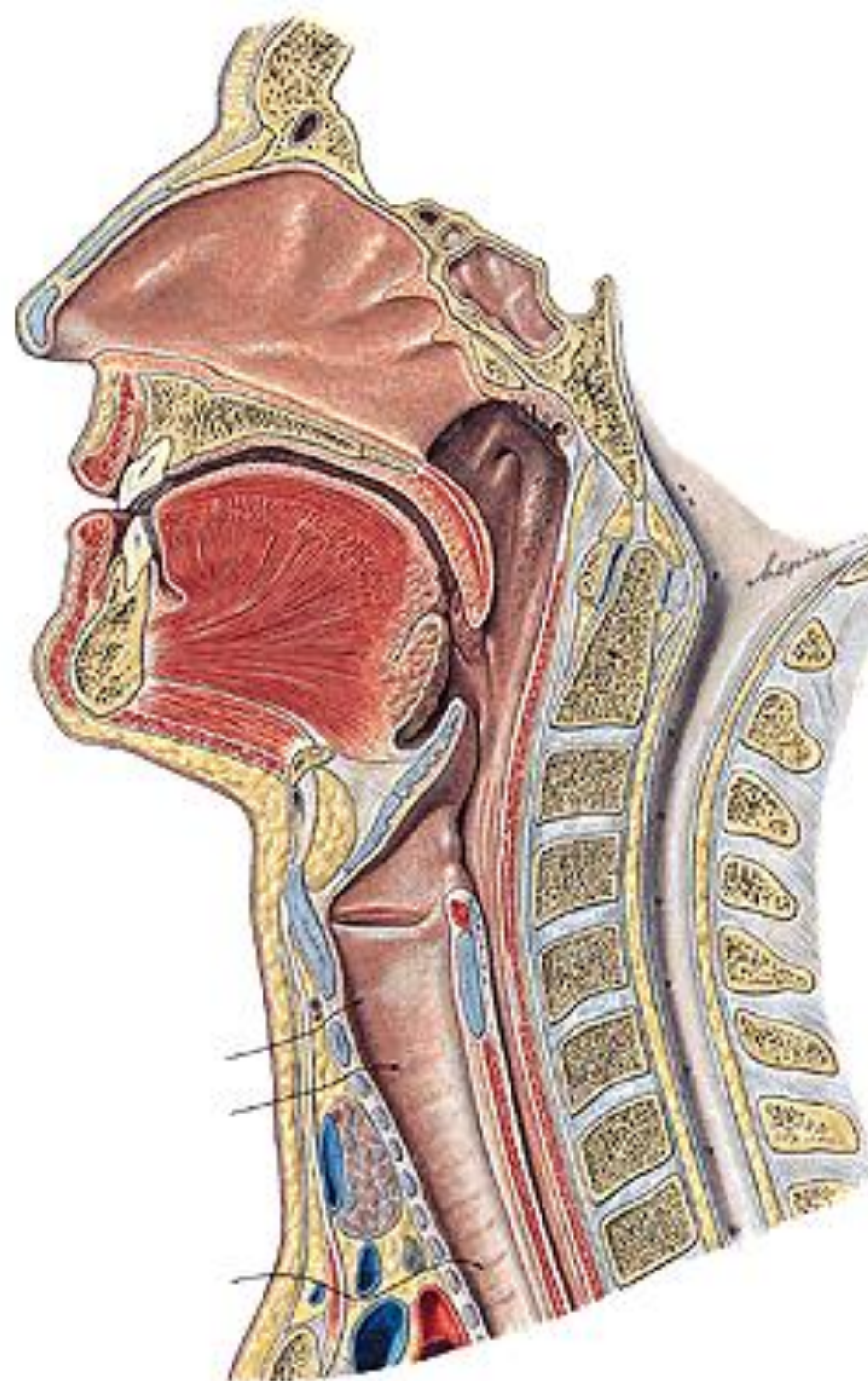


DIGESTIVE SYSTEM II.

pharynx-rectum

PHARYNX

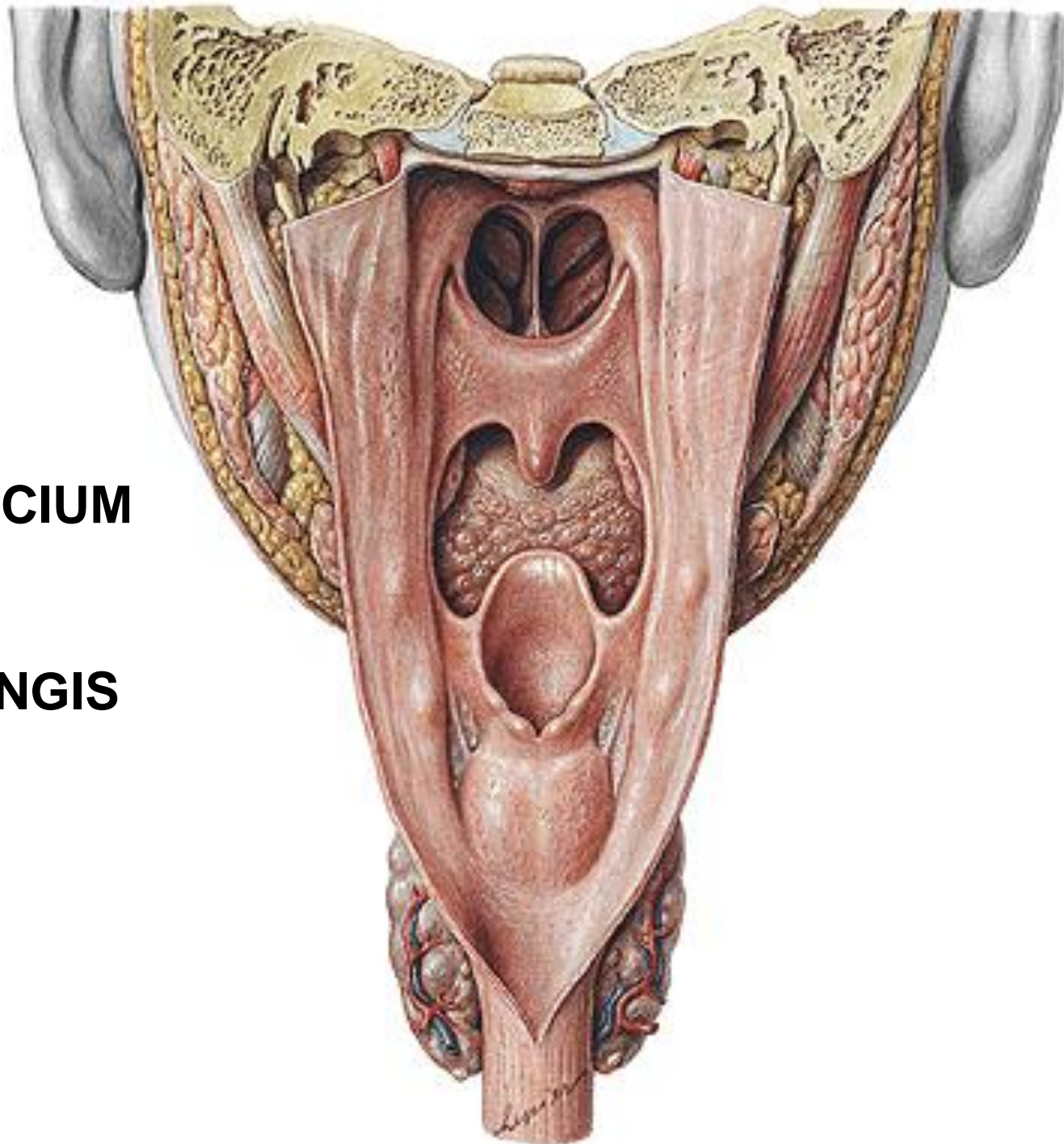
Fornix pharyngis
Cavum pharyngis



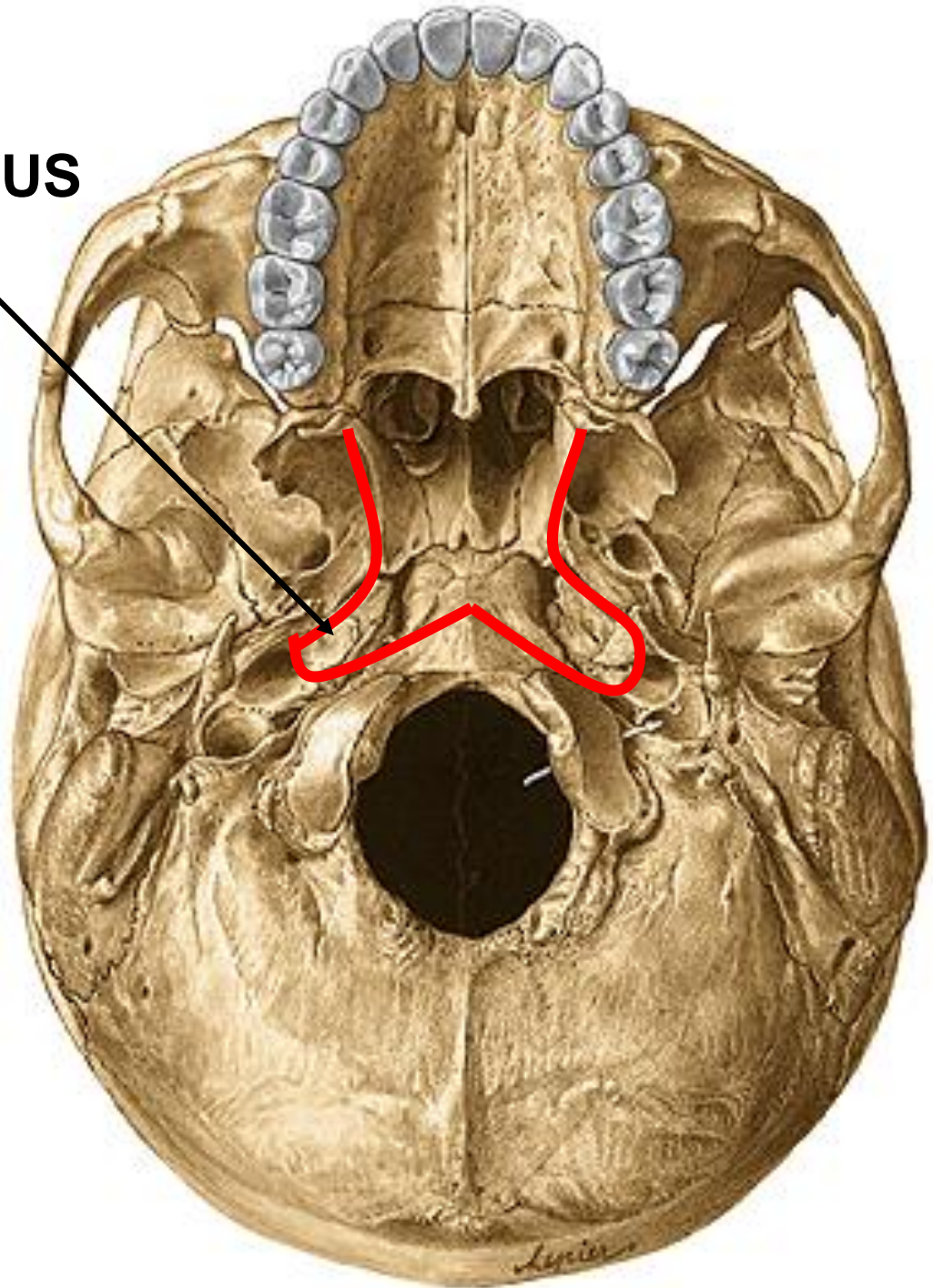
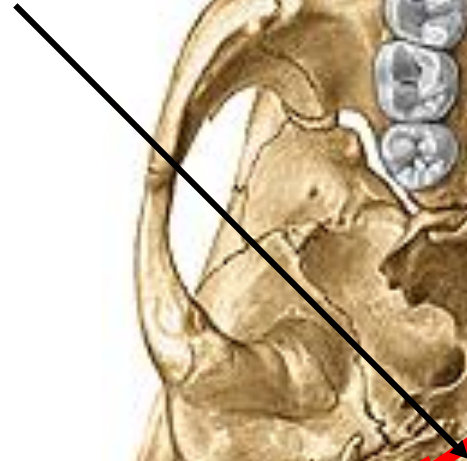
CHOANAE

ISTHMUS FAUCIUM

ADITUS LARYNGIS

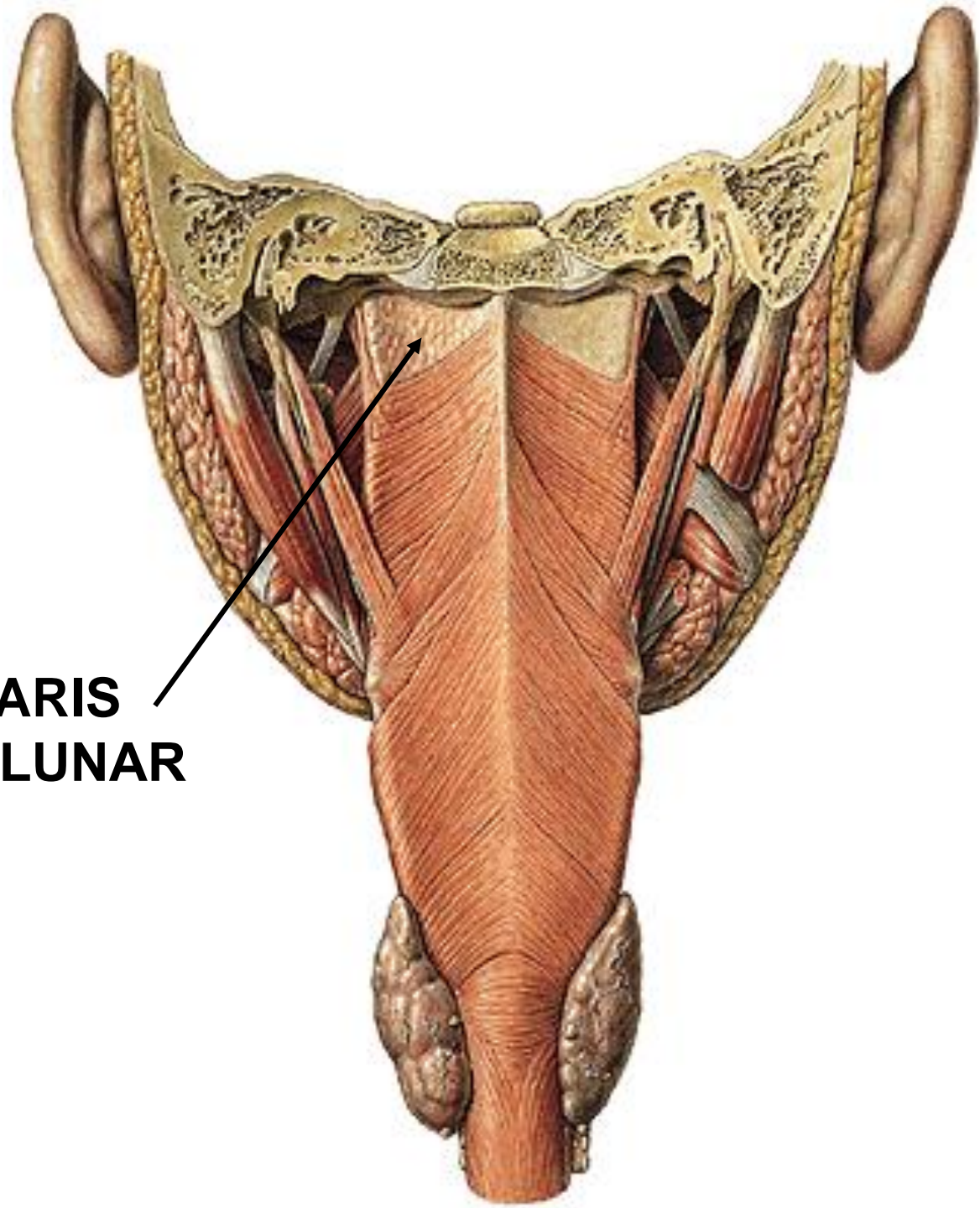


**RECESSUS
PHARYNGEUS**



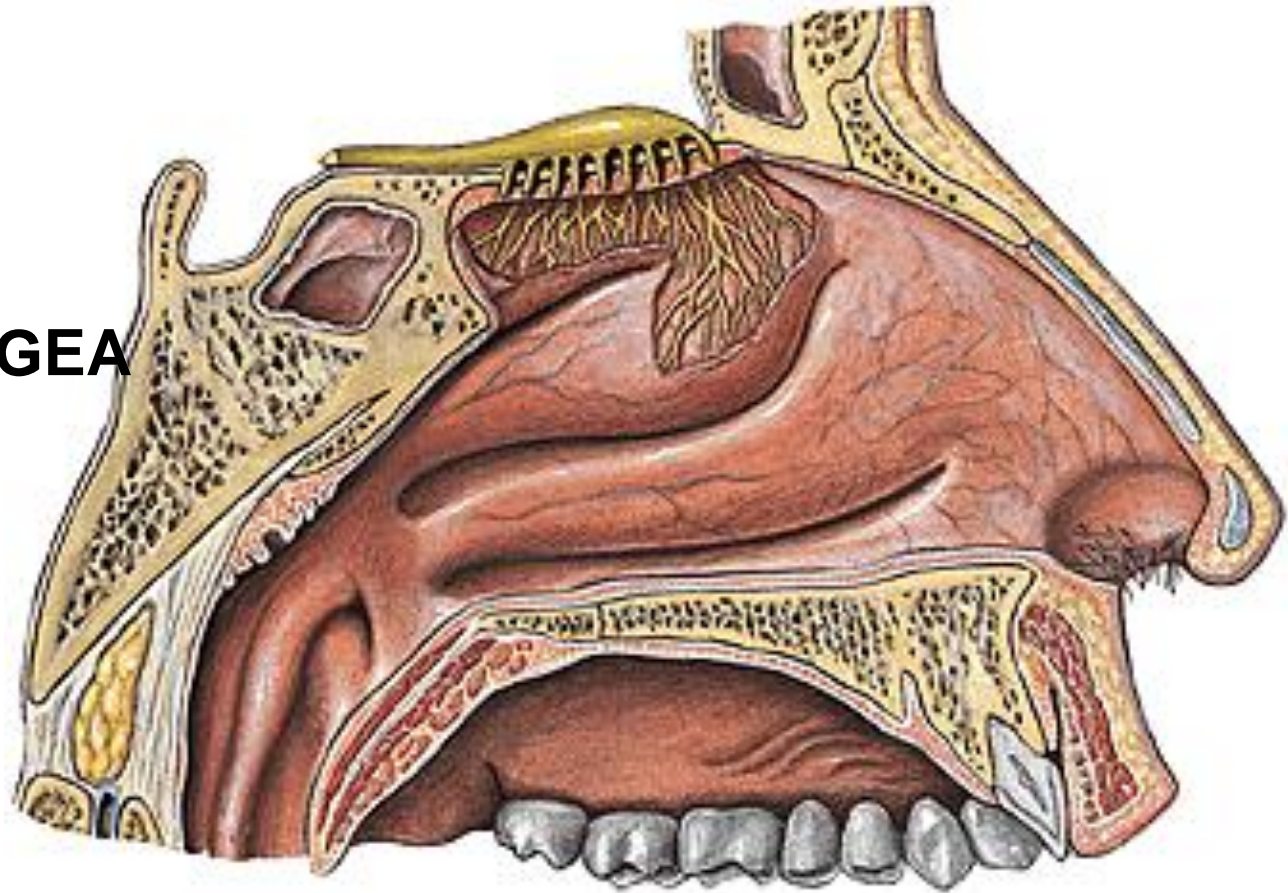
Leprieu

**FASCIA
PHARYNGOBASILARIS
(LUSCHKA'S SEMILUNAR
SPACE)**



NASOPHARYNX:

TONSILLA PHARYNGEA

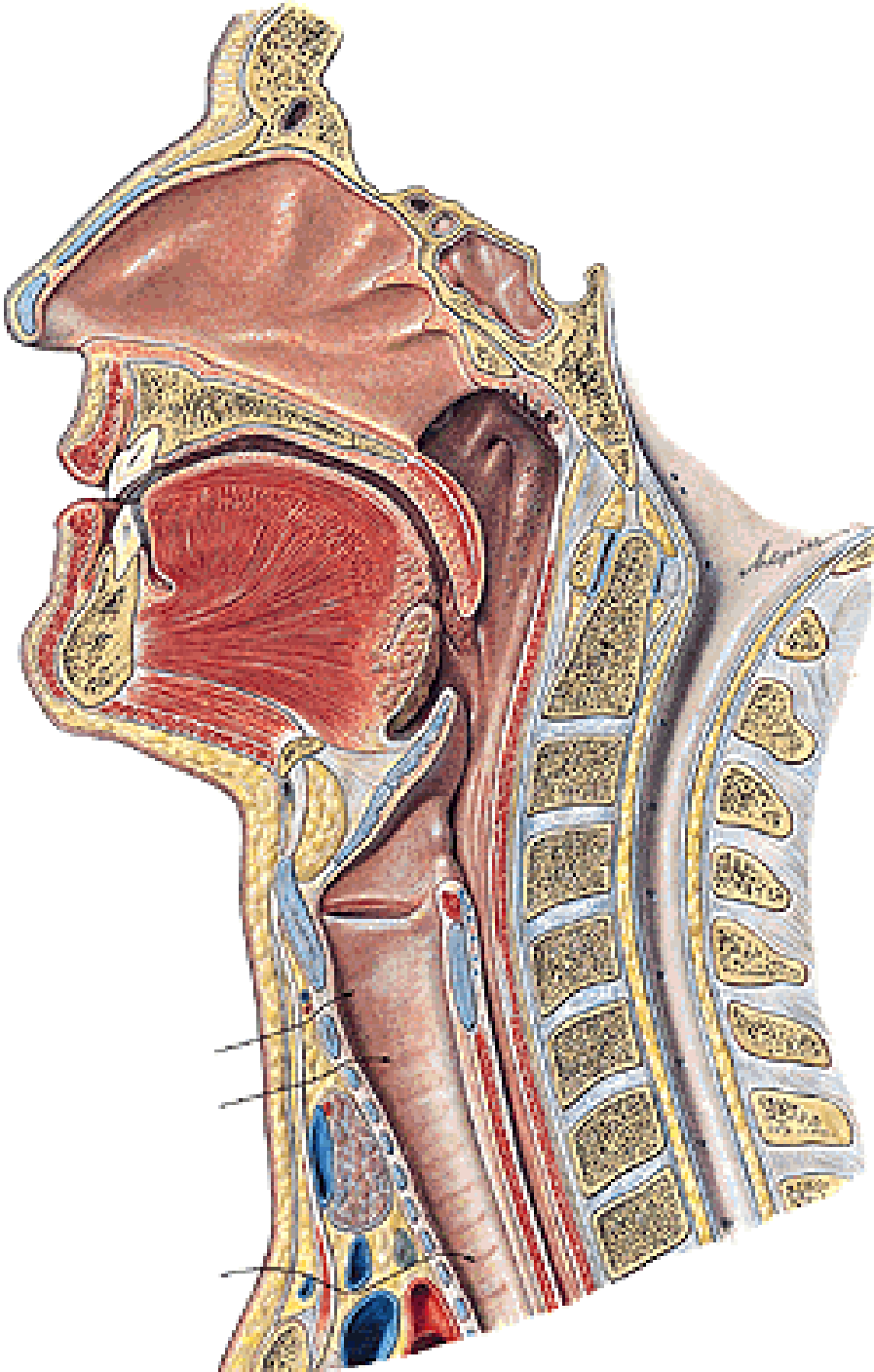


OSTIUM PHARYNGEUM TUBAE AUDITIVAE:

- TORUS TUBARIUS (PLICA SALPINGOPHARYNGEA)**
- TORUS LEVATORIUS**
- PLICA SALPINGOPALATINA**

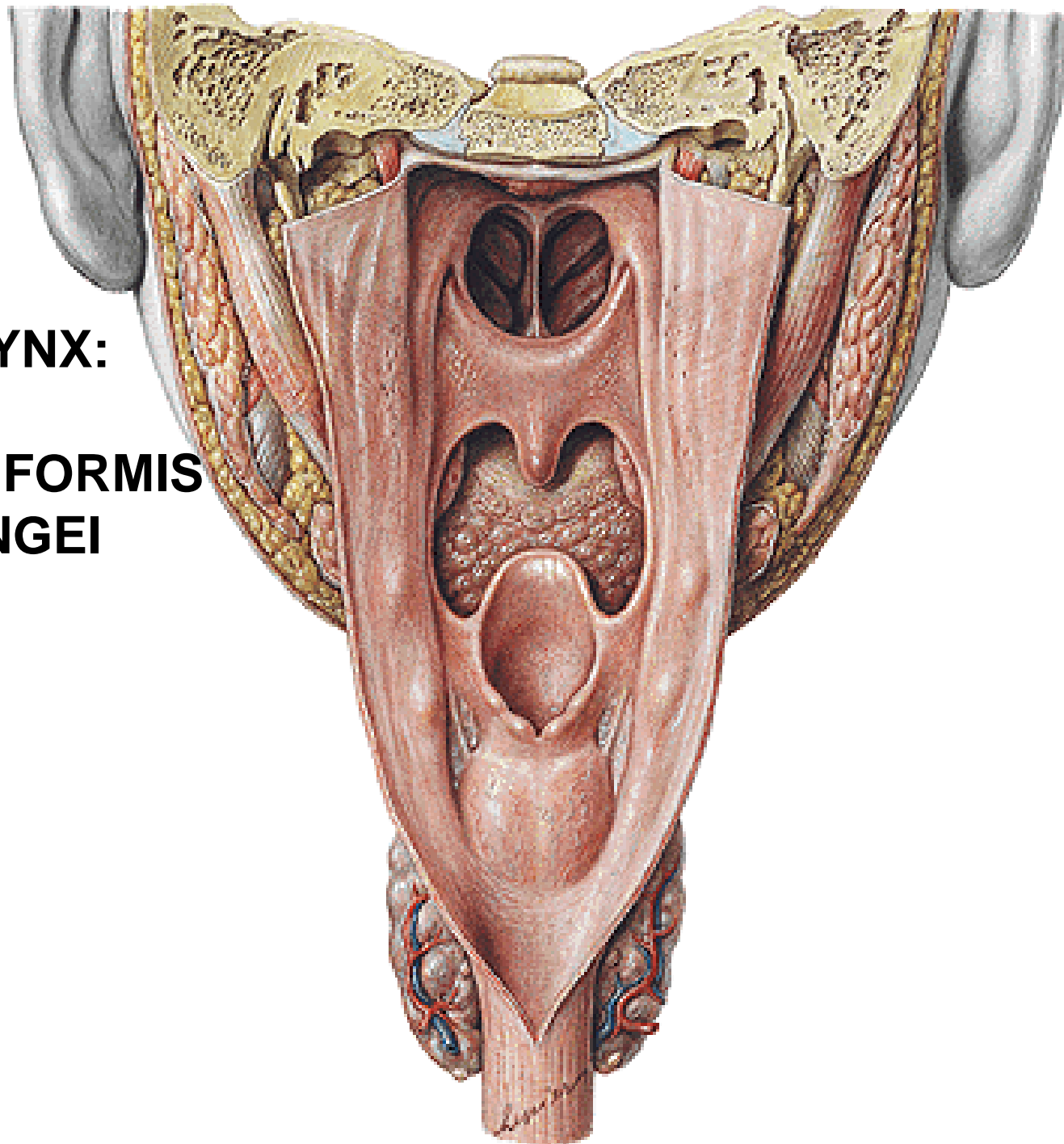
TONSILLA TUBARIA

OROPHARYNX



LARYNGOPHARYNX:

- RECESSUS PIRIFORMIS**
- PLICA N. LARYNGEI**

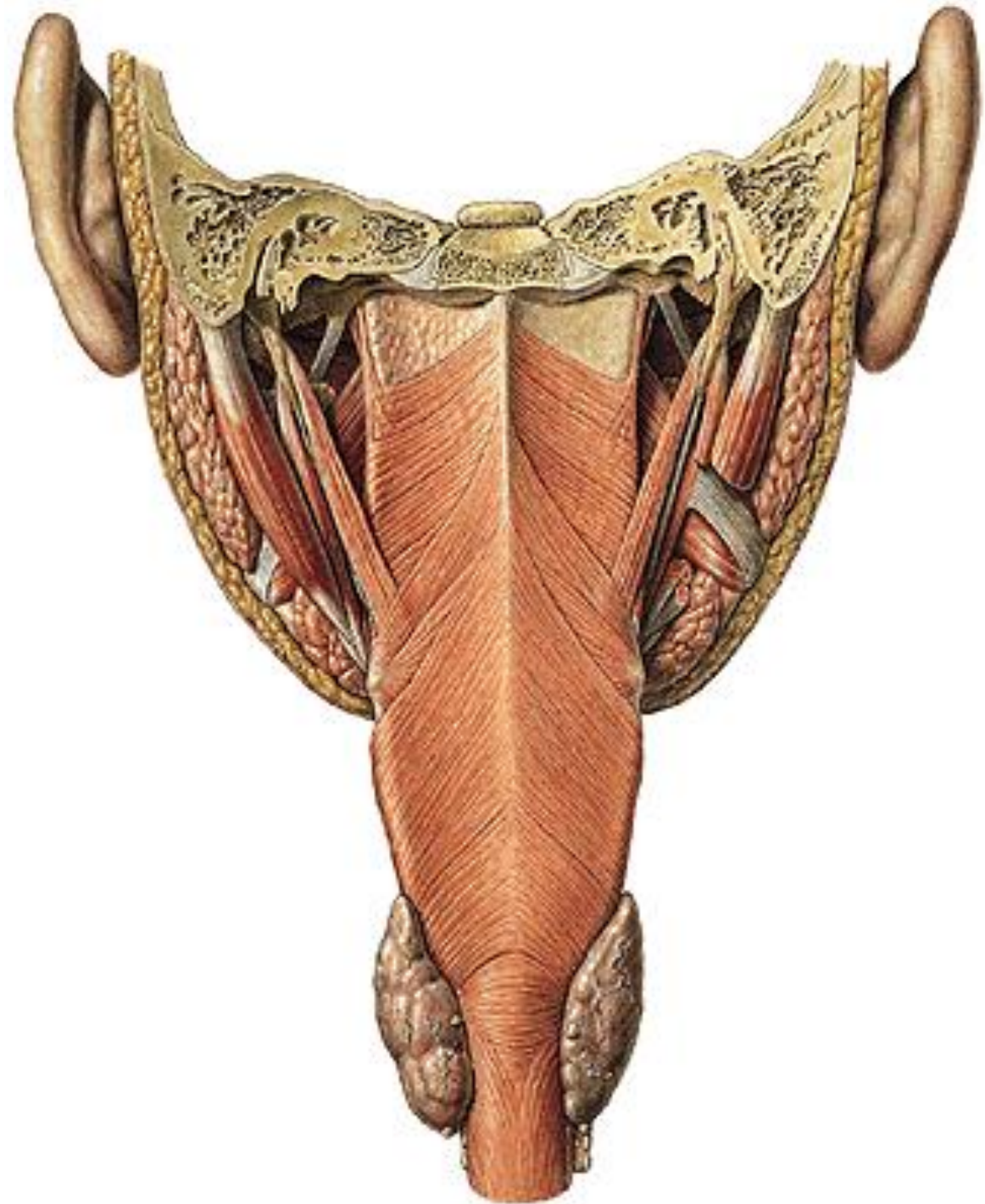


**M. CONSTRICTOR
PHARYNGIS SUP.**

**M. CONSTRICTOR
PHARYNGIS MEDIUS**

**M. CONSTRICTOR
PHARYNGIS INF.**

- RAPHE PHARYNGIS



M. CONSTRICTOR
PHARYNGIS SUP.:

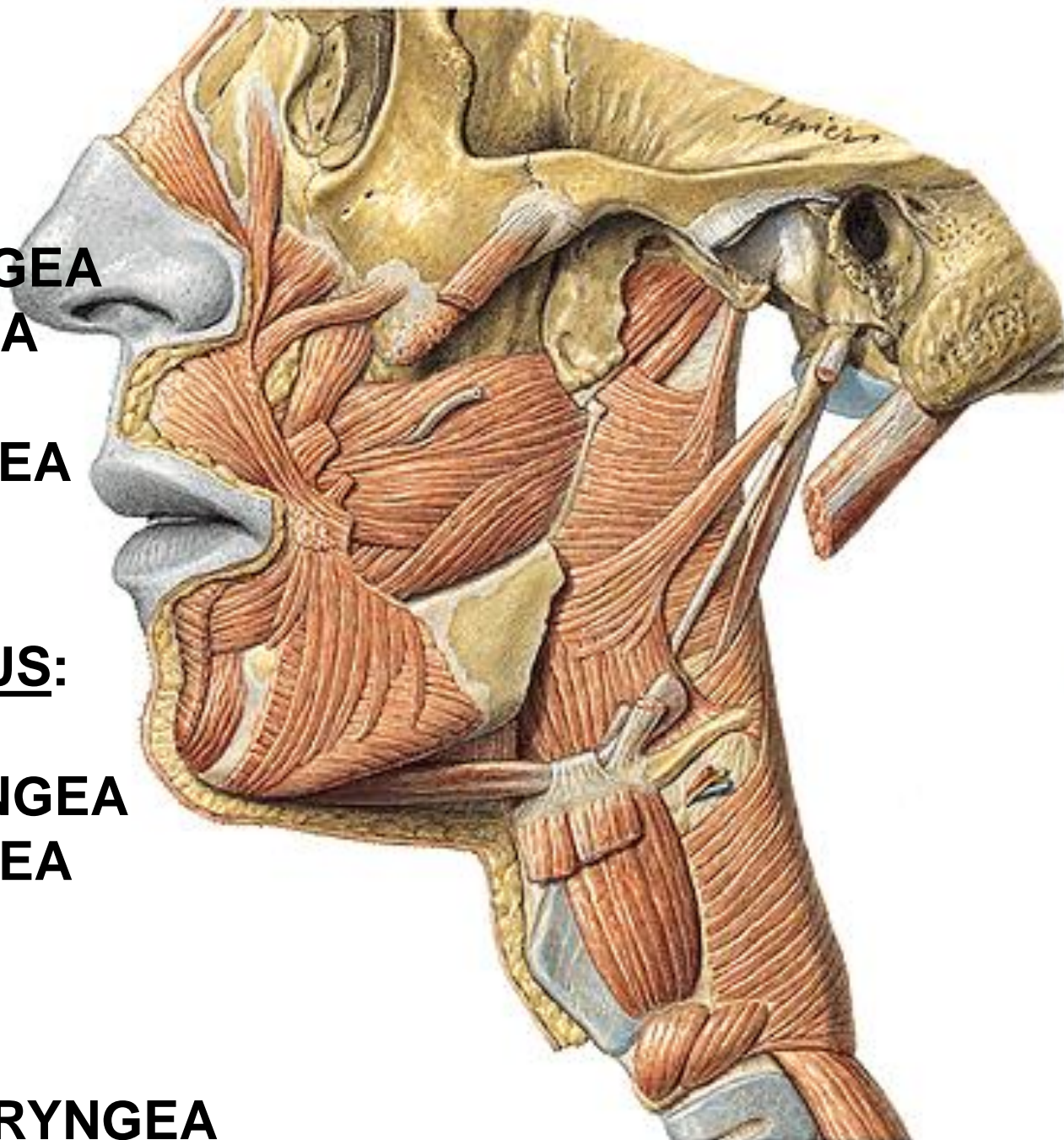
- PARS
PTERYGOPHARYNGEA
- BUCCOPHARYNGEA
- MYLOPHARYNGEA
- GLOSSOPHARYNGEA

M. CONSTRICTOR
PHARYNGIS MEDIUS:

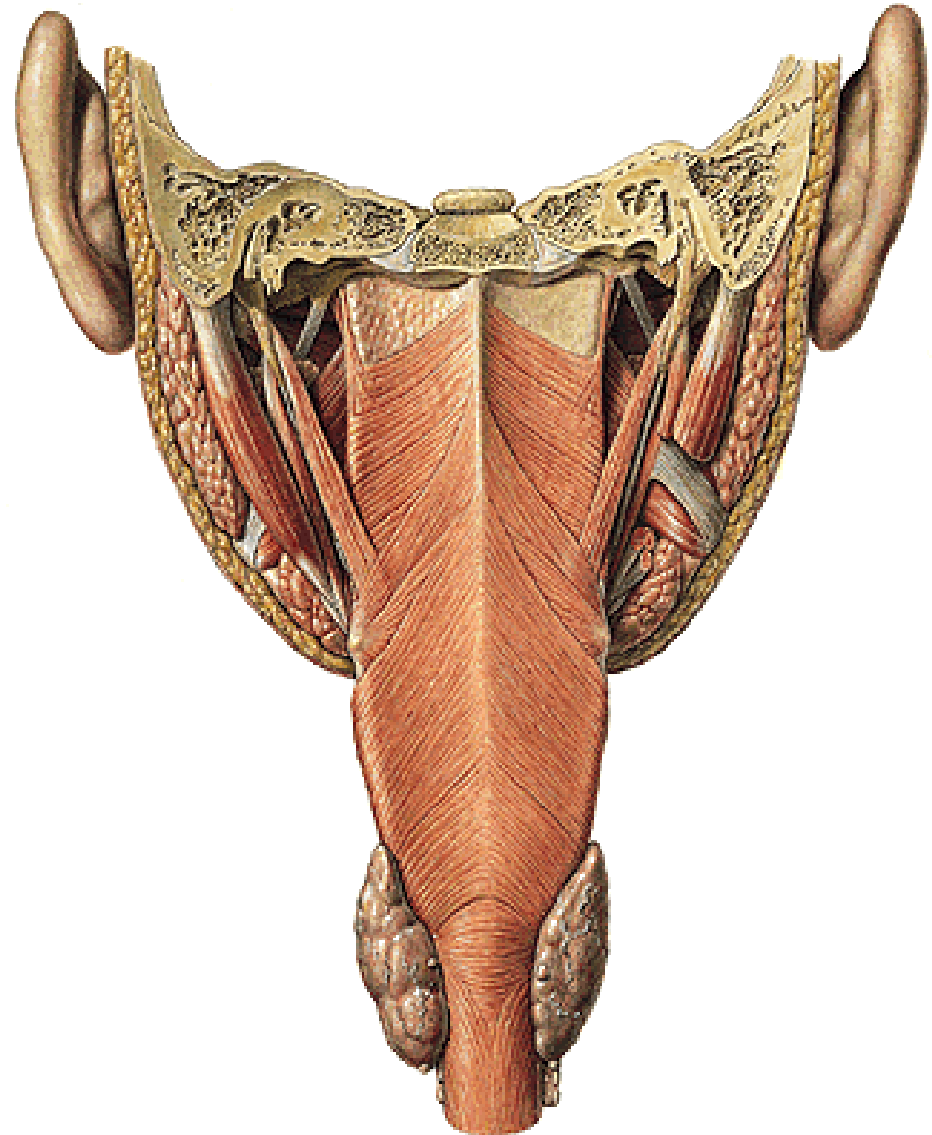
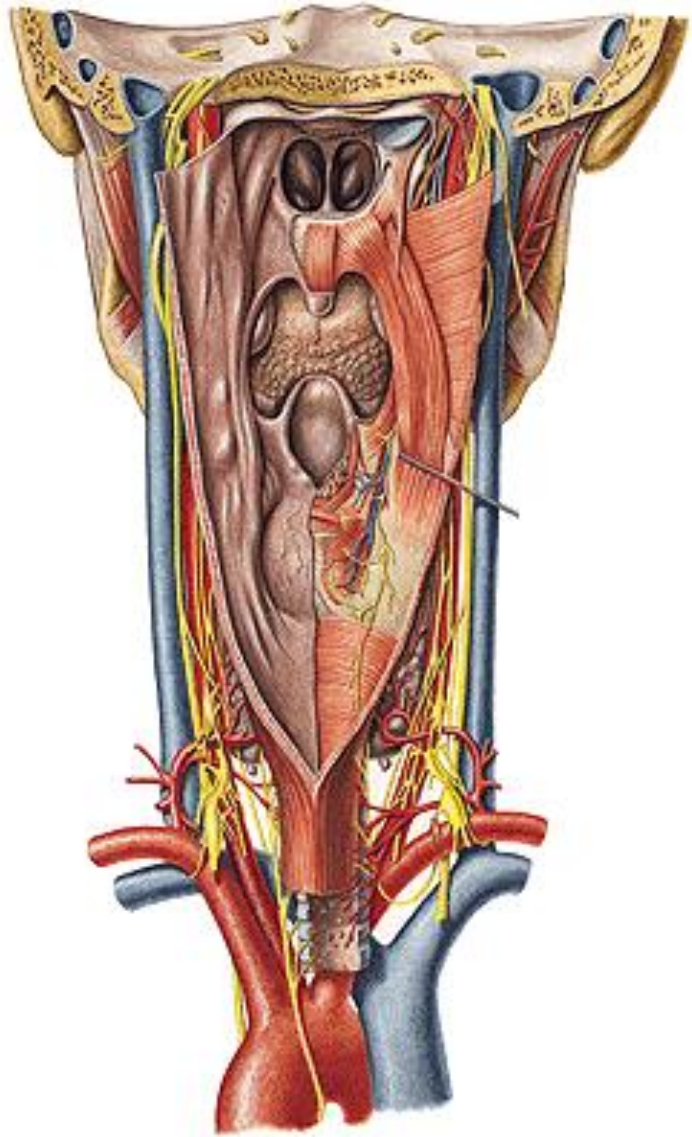
- PARS
CHONDROPHARYNGEA
- CERATOPHARYNGEA

M. CONSTRICTOR
PHARYNGIS INF.:

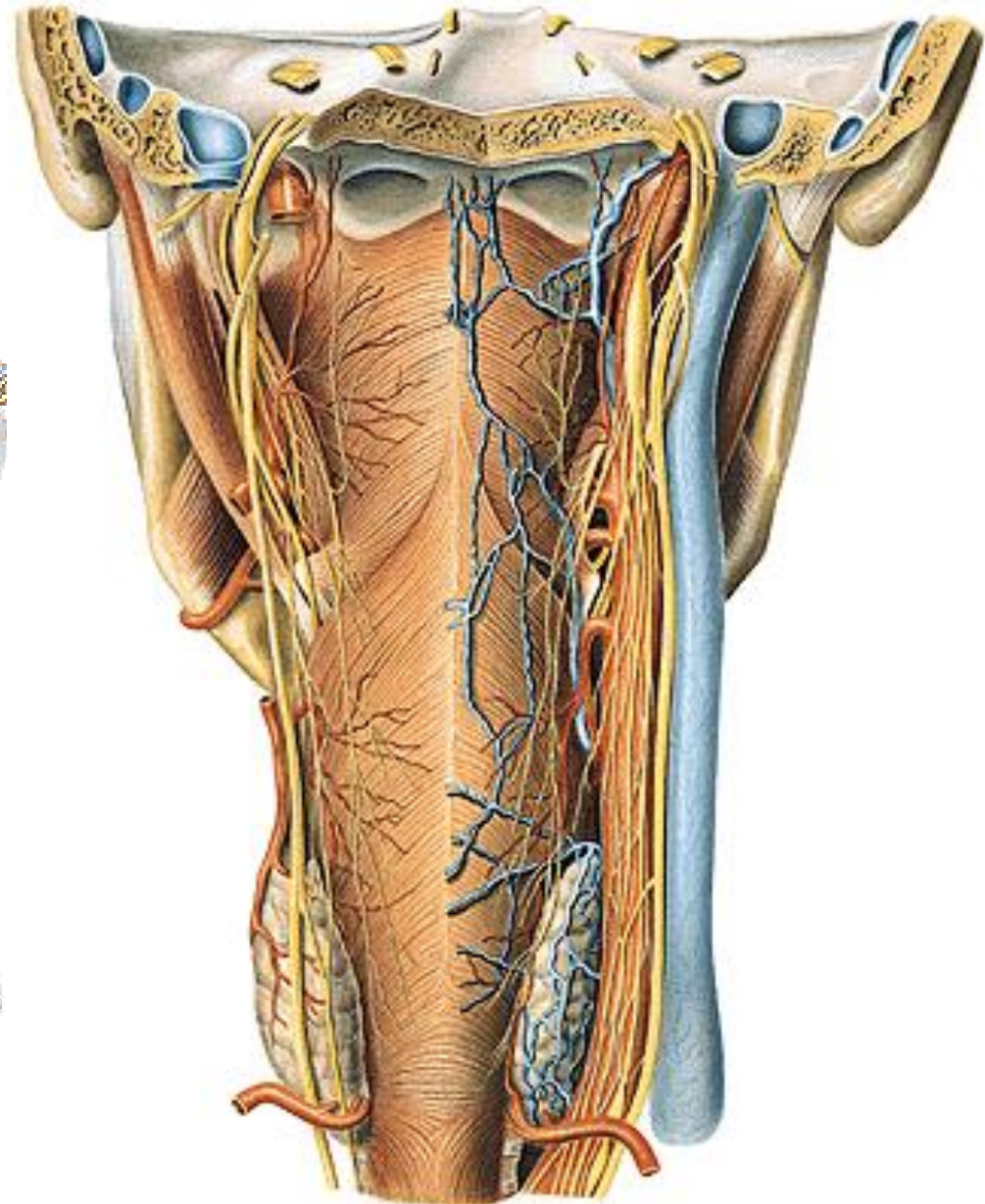
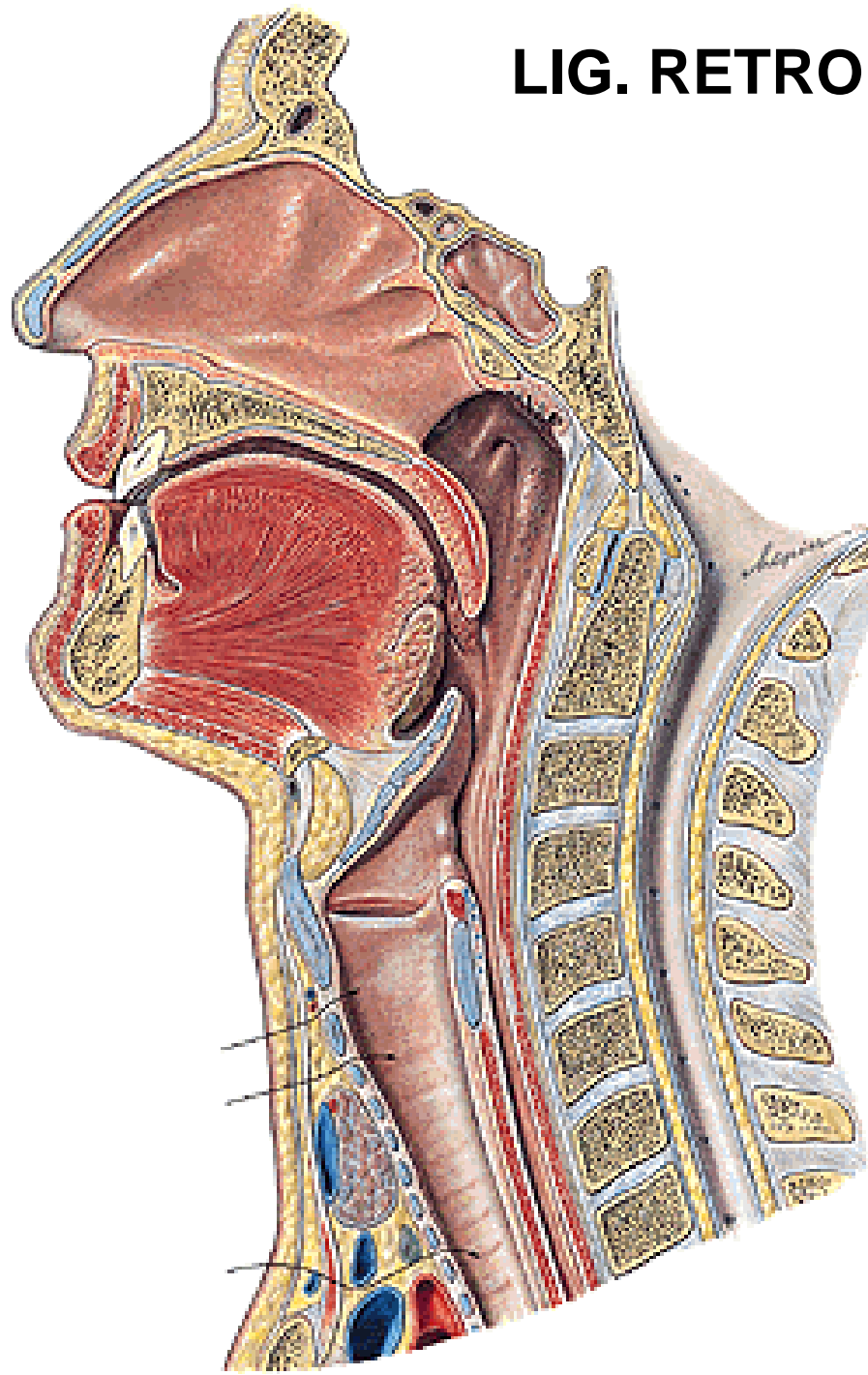
- PARS THYROPHARYNGEA
- CRICOPHARYNGEA



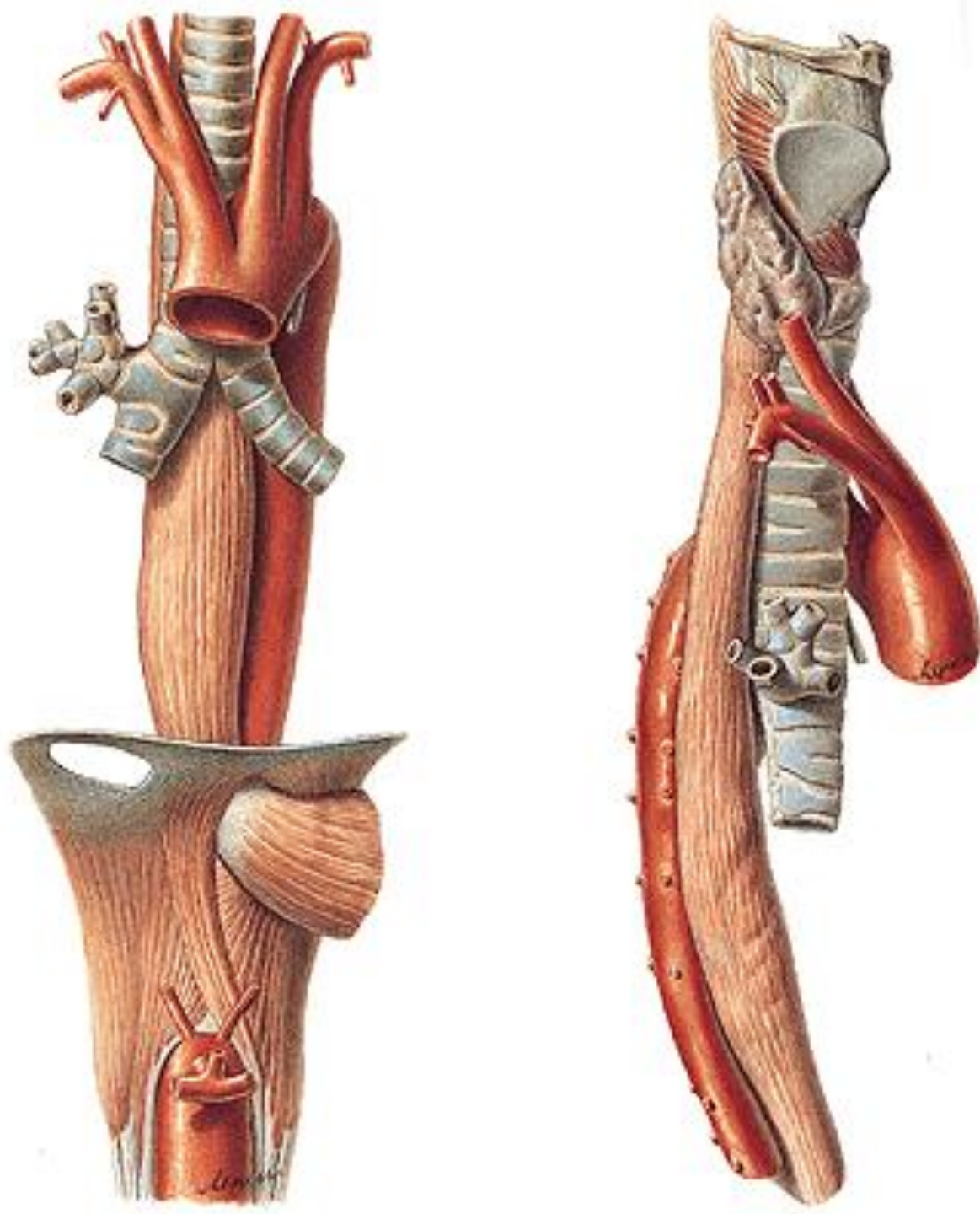
**LEVATORS: M. PALATOPHARYNGEUS
M. SALPINGOPHARYNGEUS
M. STYLOPHARYNGEUS**



LIG. RETROPHARYNGEUM MEDIANUM



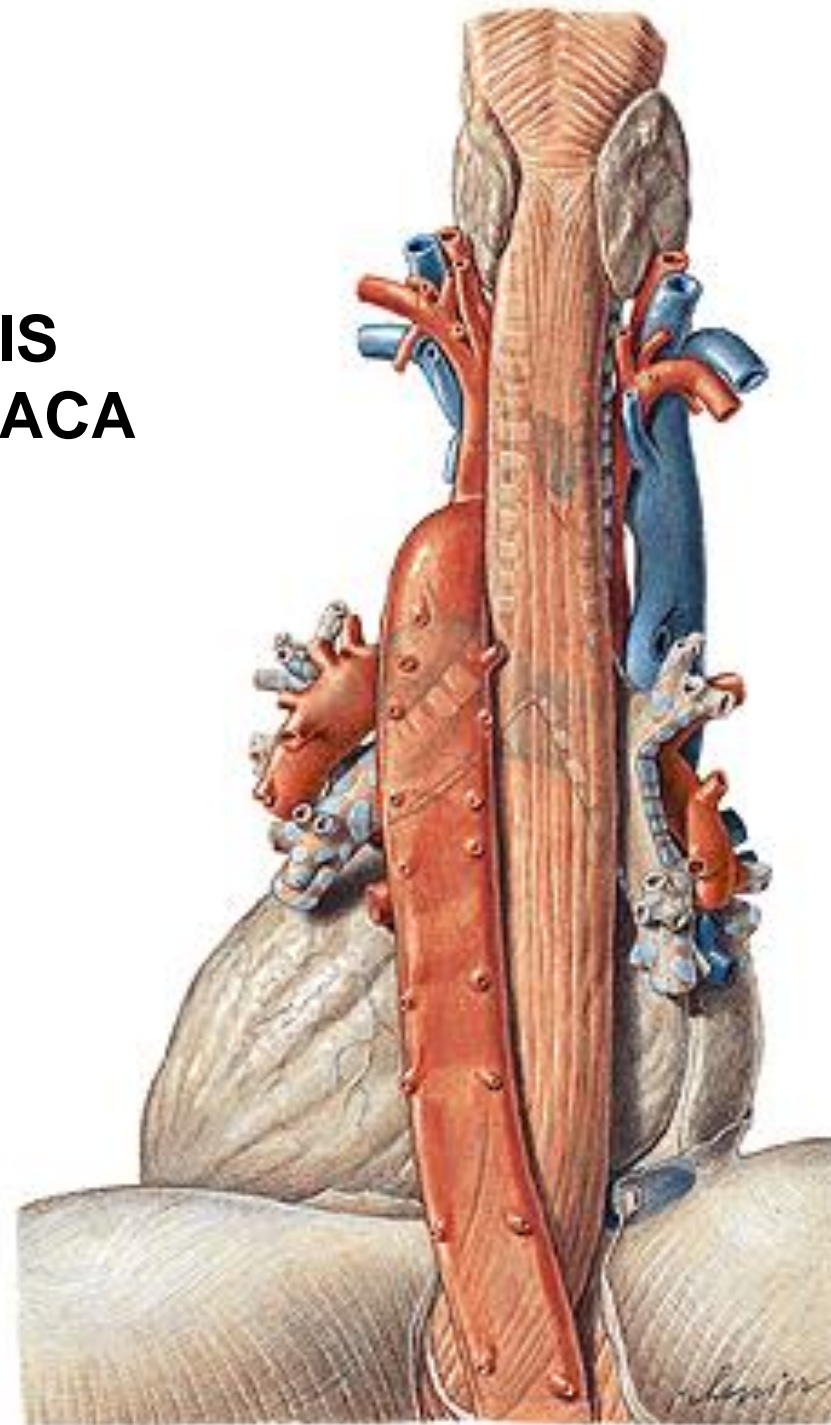
OESOPHAGUS



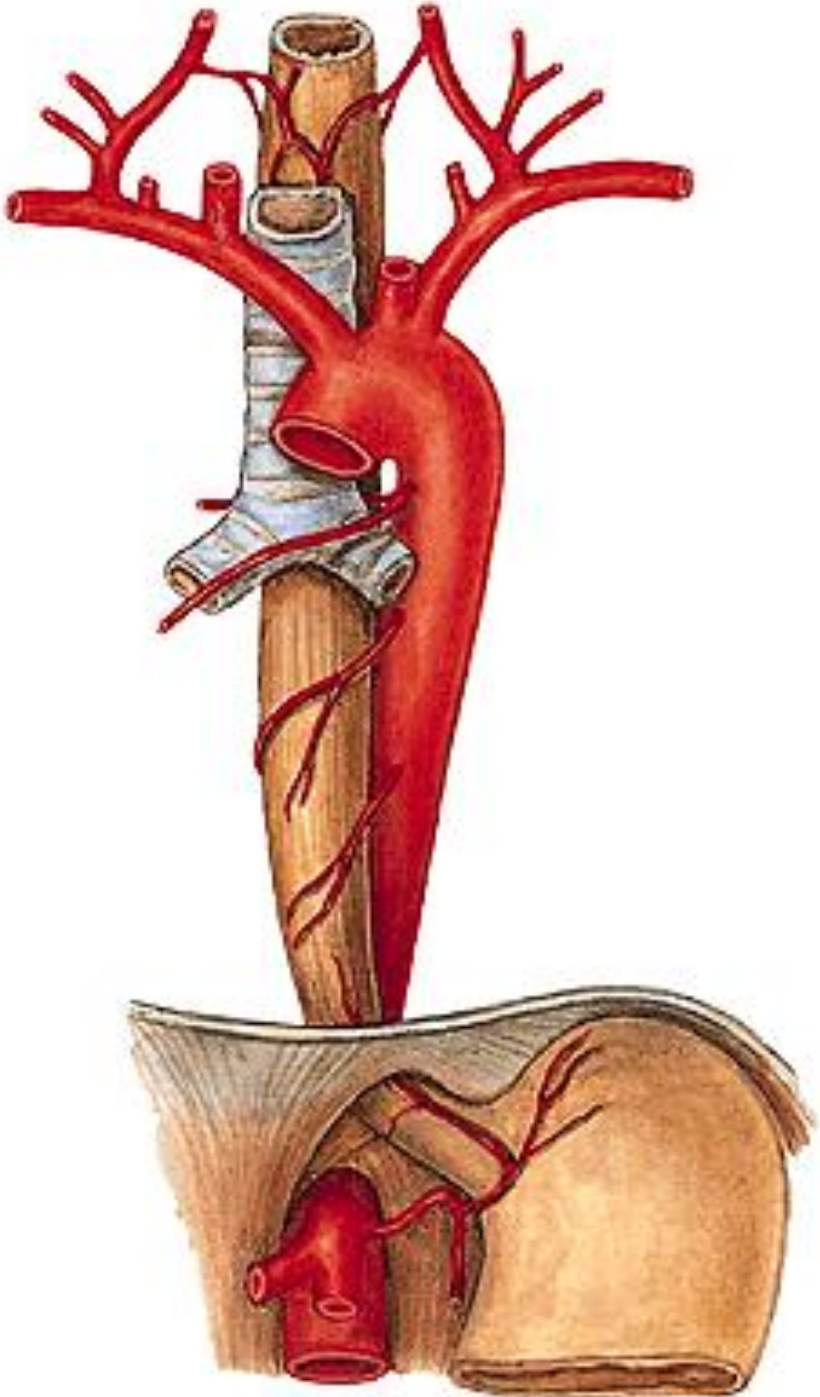
PARS CERVICALIS

PARS THORACICA

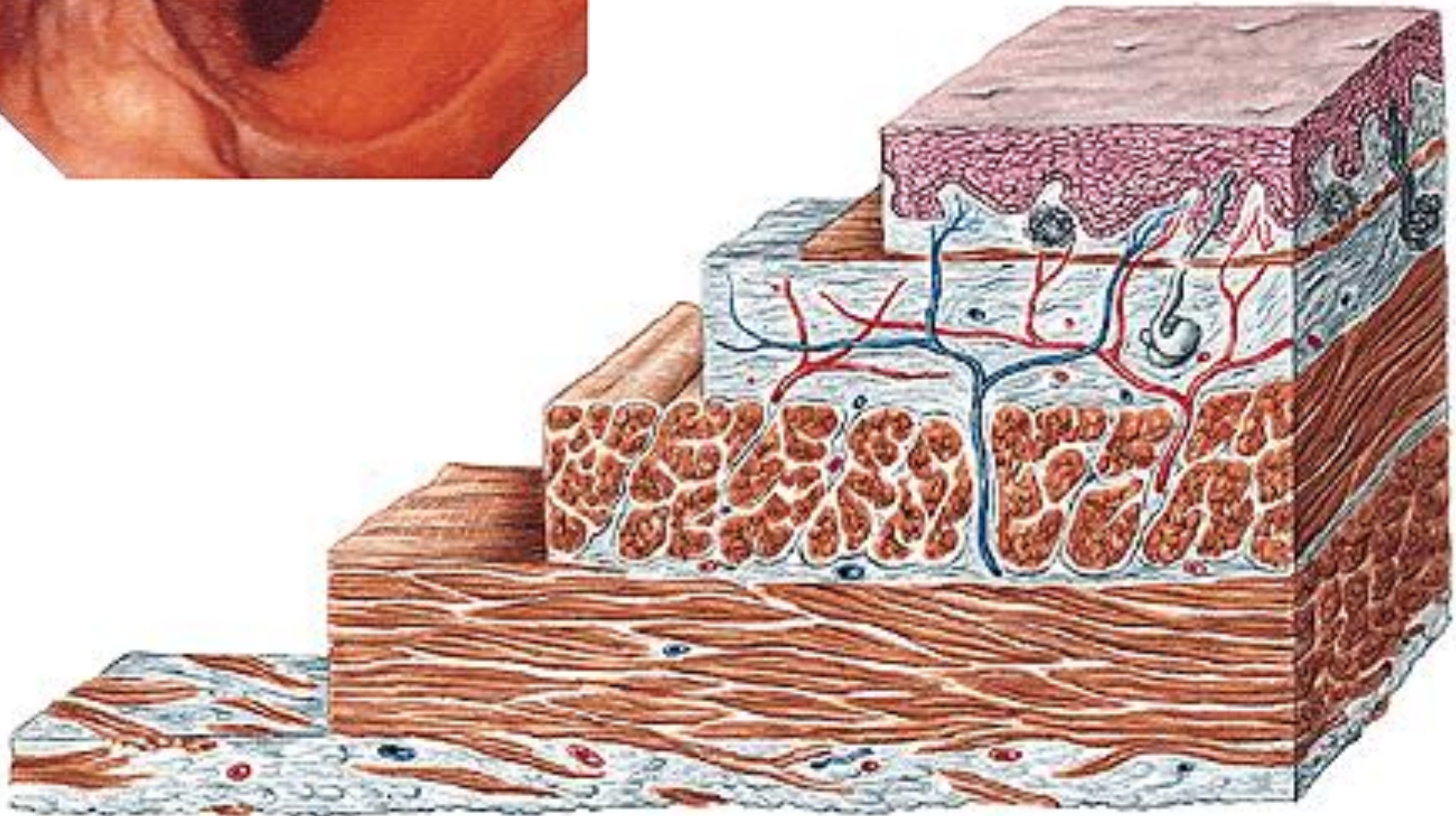
- **PARS RETROTRACHEALIS**
- **PARS RETROPERICARDIACA**



PARS ABDOMINALIS



GASTROESOPHAGEAL JUNCTION

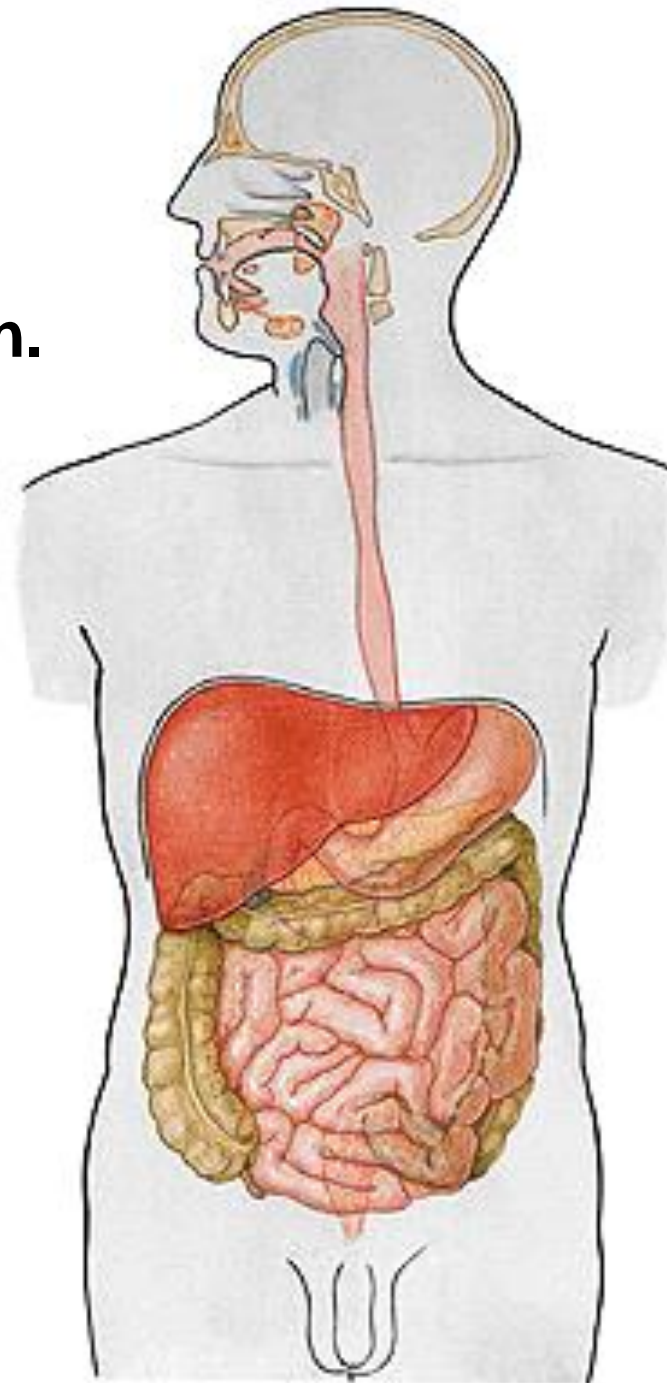


OESOPHAGOGGRAPHY



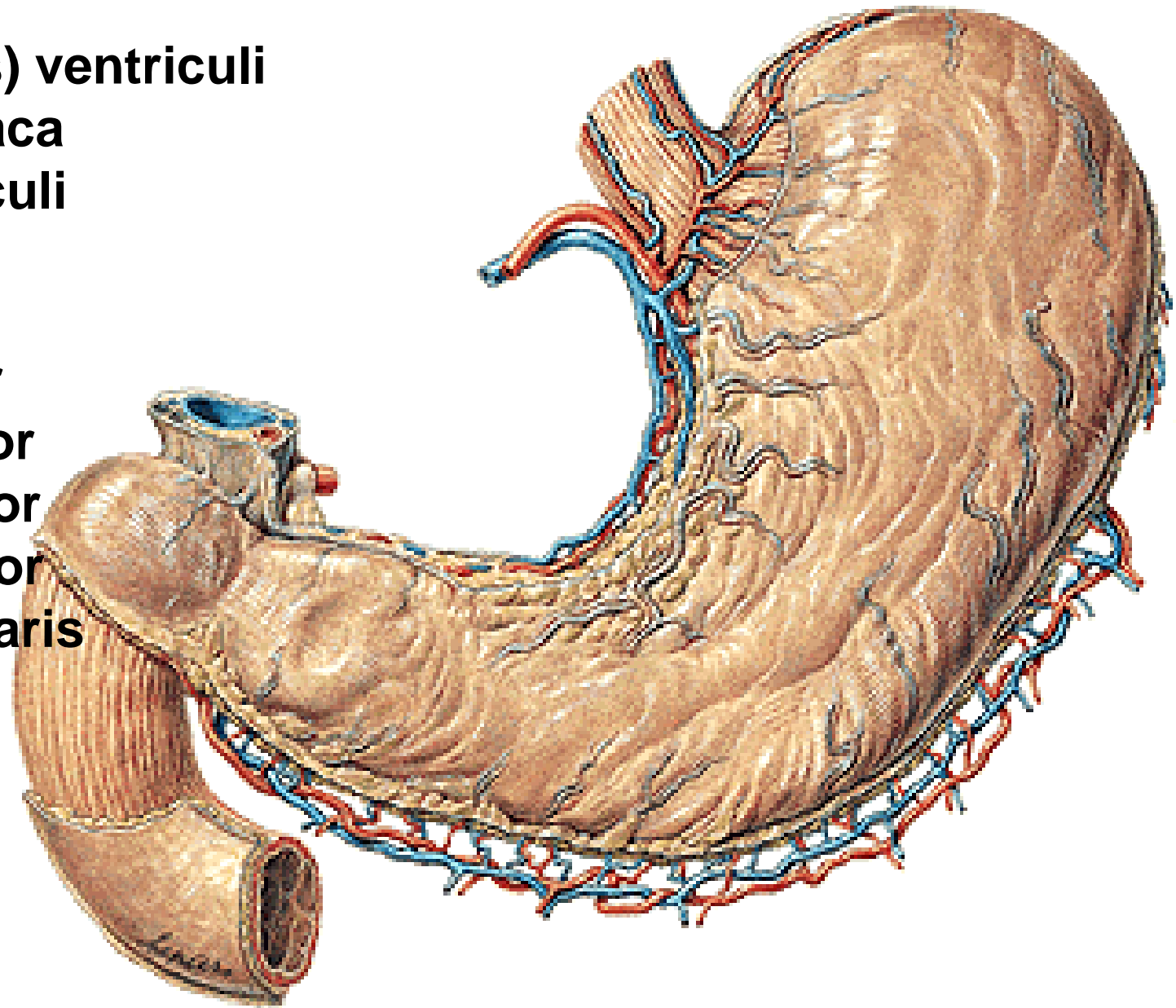
VENTRICULUS, GASTER

Regio hypochondriaca sin.

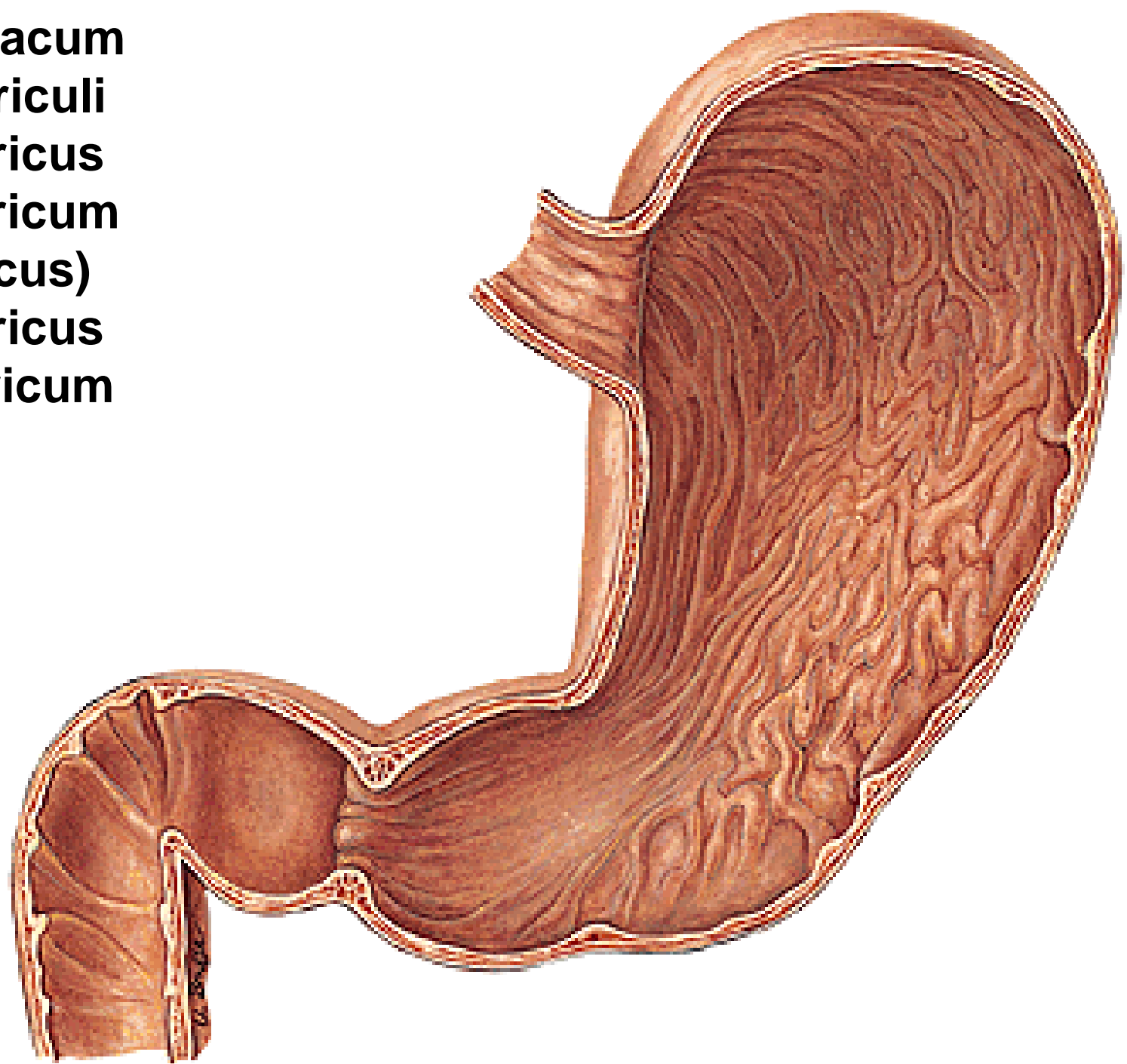




Cardia
Fornix (fundus) ventriculi
Incisura cardiaca
Corpus ventriculi
Pars pylorica
Pylorus
Paries anterior
Paries posterior
Curvatura major
Curvatura minor
Incisura angularis



Ostium cardiacum
Fundus ventriculi
Canalis gastricus
Antrum pyloricum
(sinus gastricus)
Canalis pyloricus
Ostium pyloricum



Plicae gastricae

Sulcus salivarius

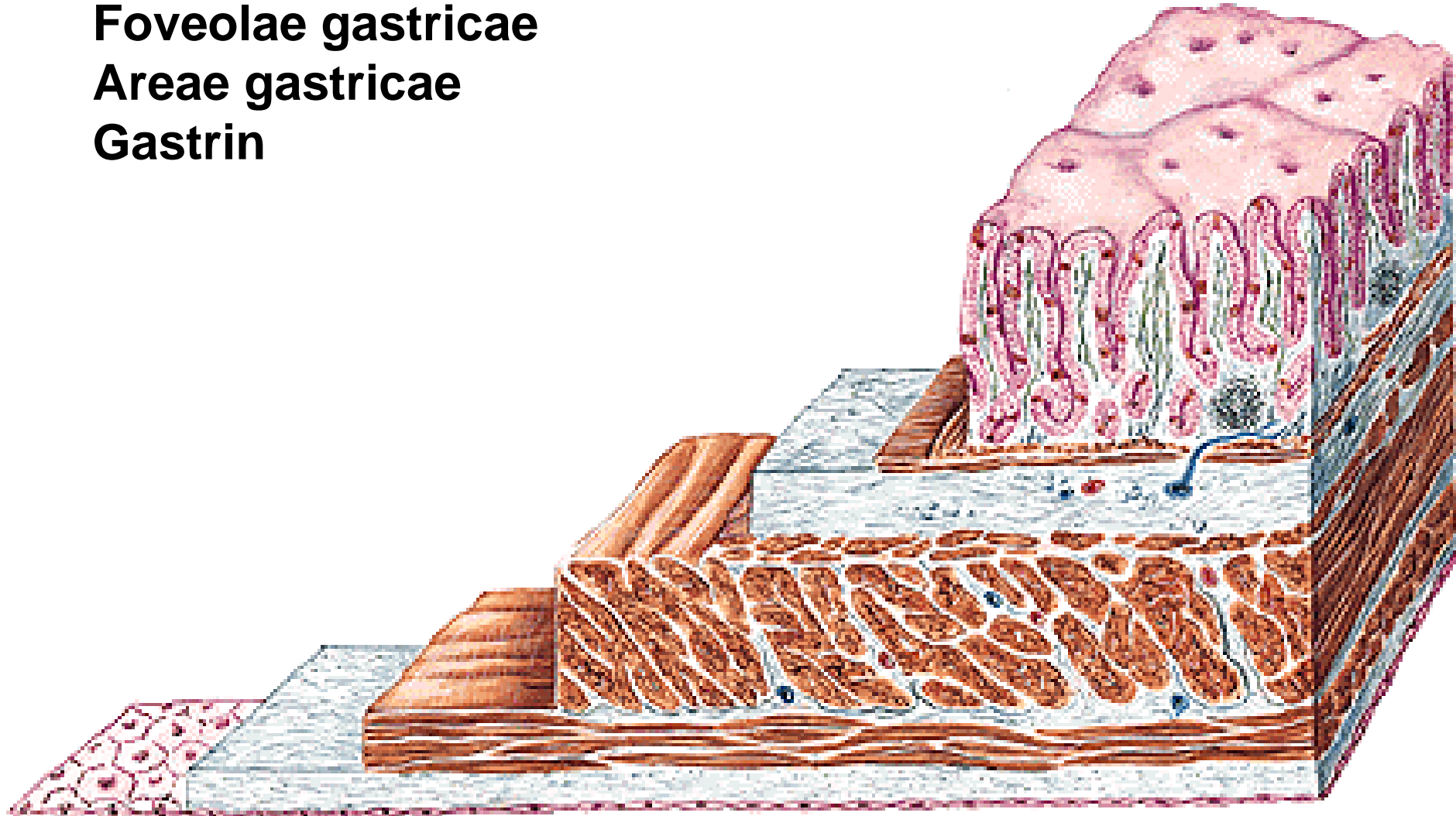
Glandulae gastricae - mucus

- succus gastricus

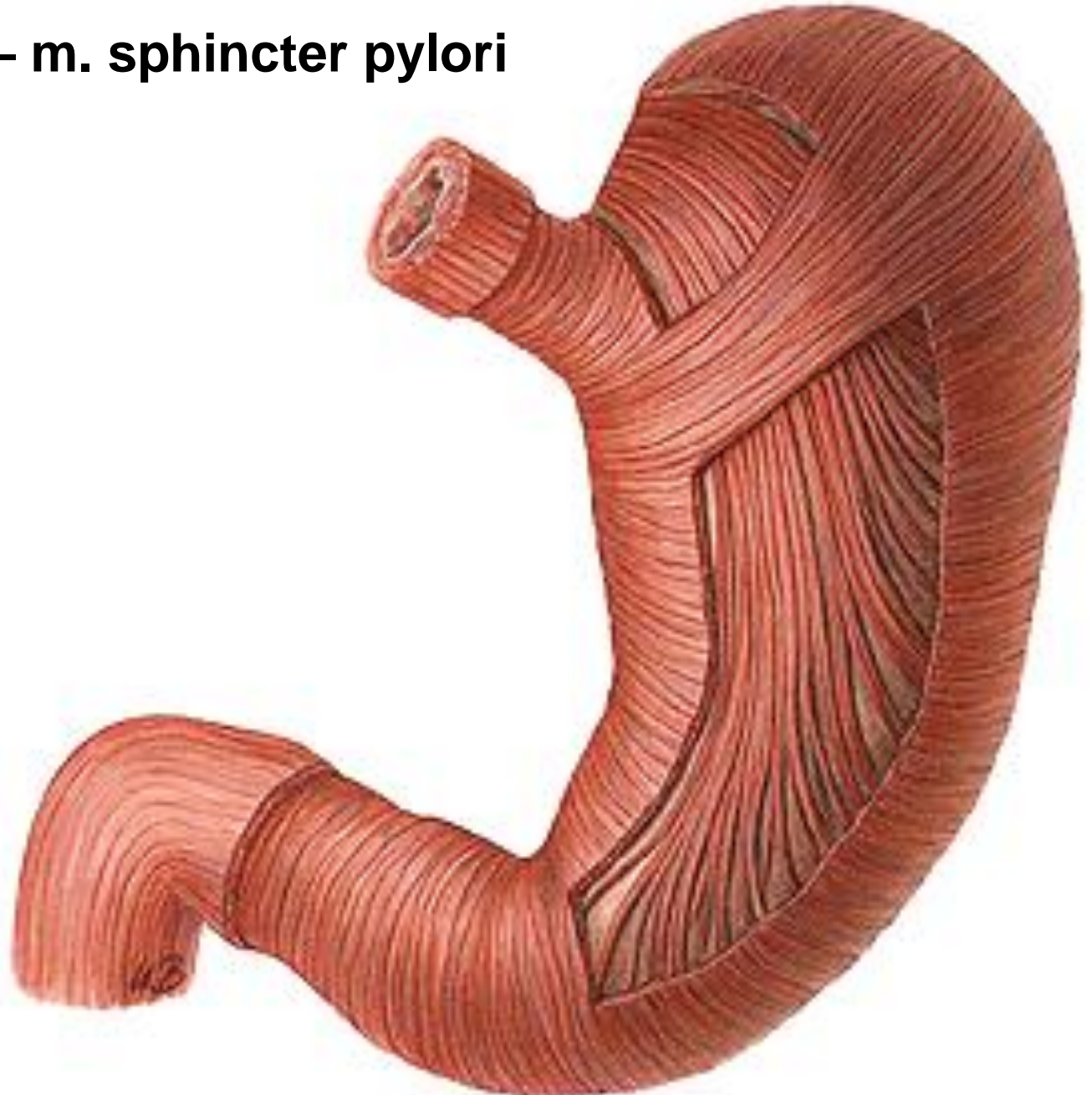
Foveolae gastricae

Areae gastricae

Gastrin



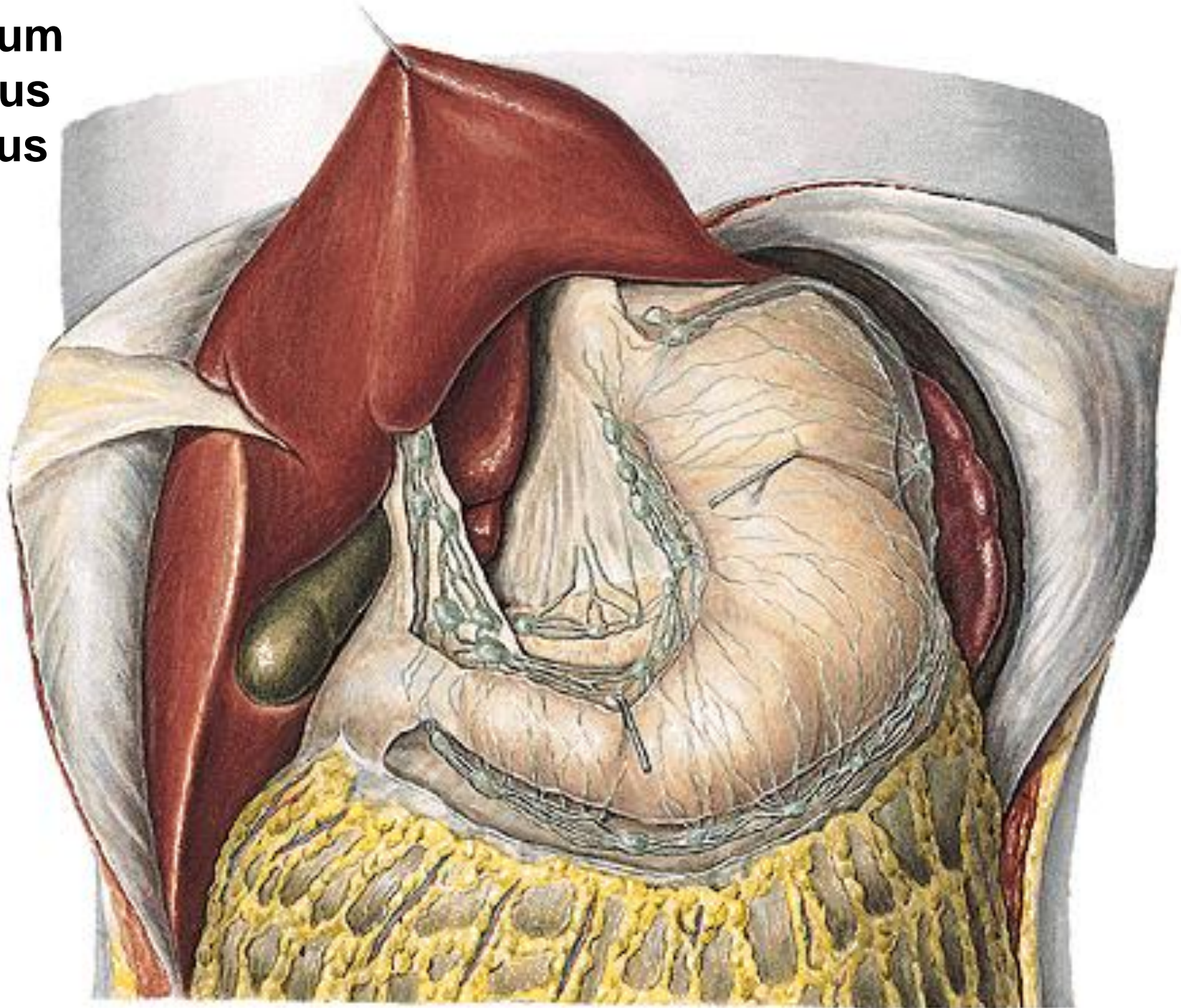
Fibrae obliquae
Stratum circulare – m. sphincter pylori

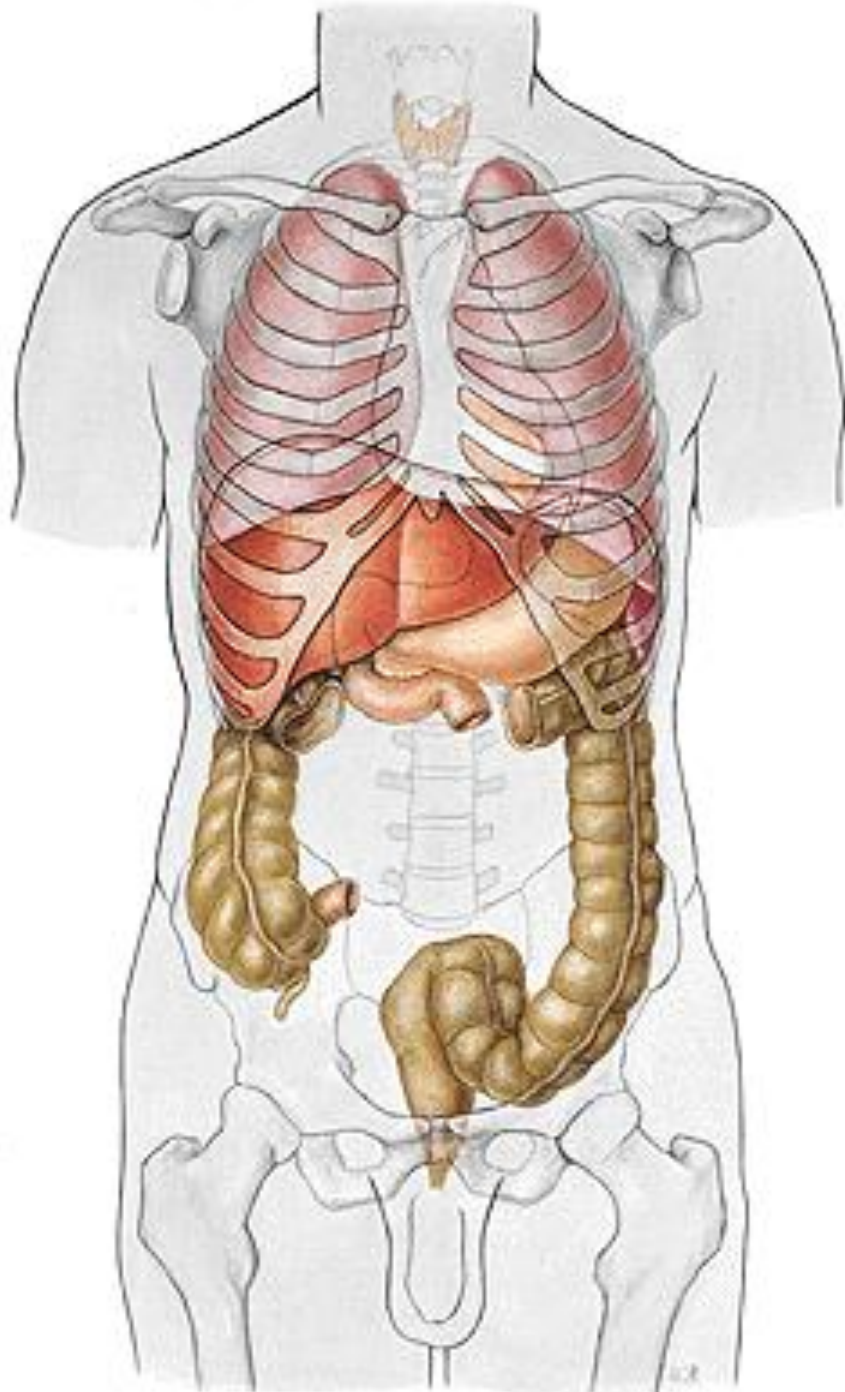


Stratum longitudinale

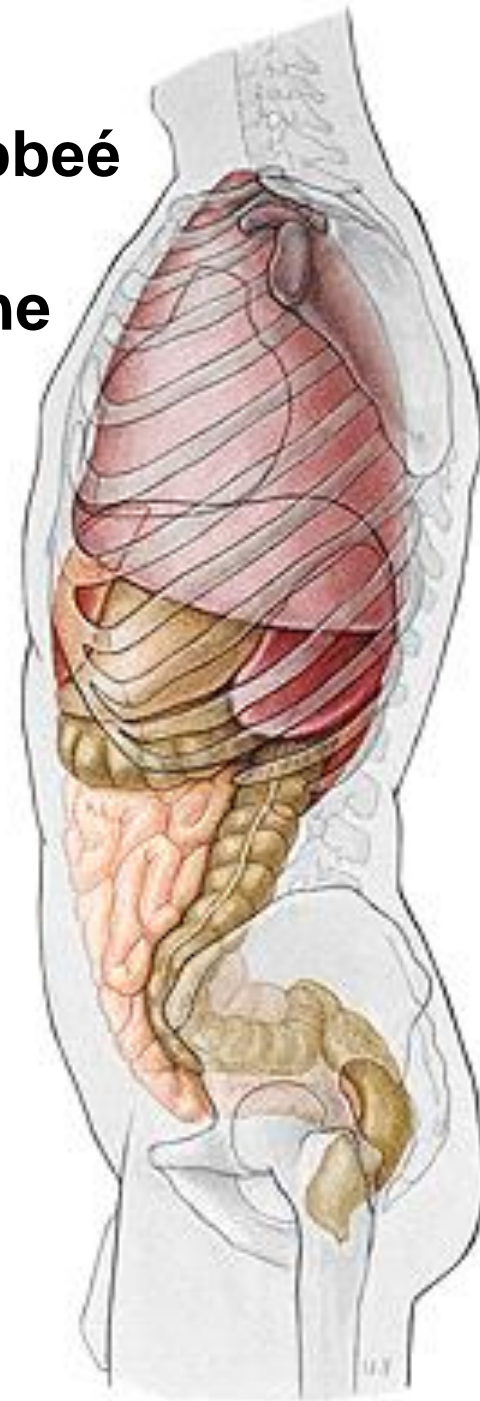


Omentum
- minus
- majus





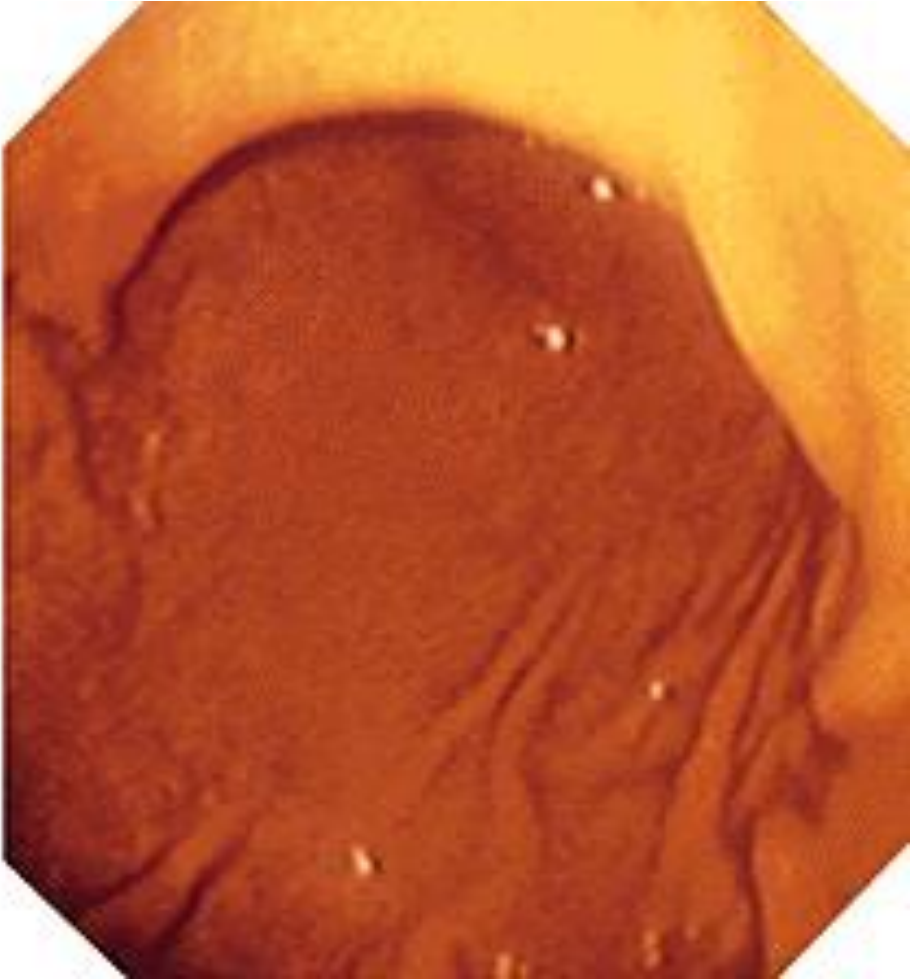
Triangle of Labbeé
transpyloric line

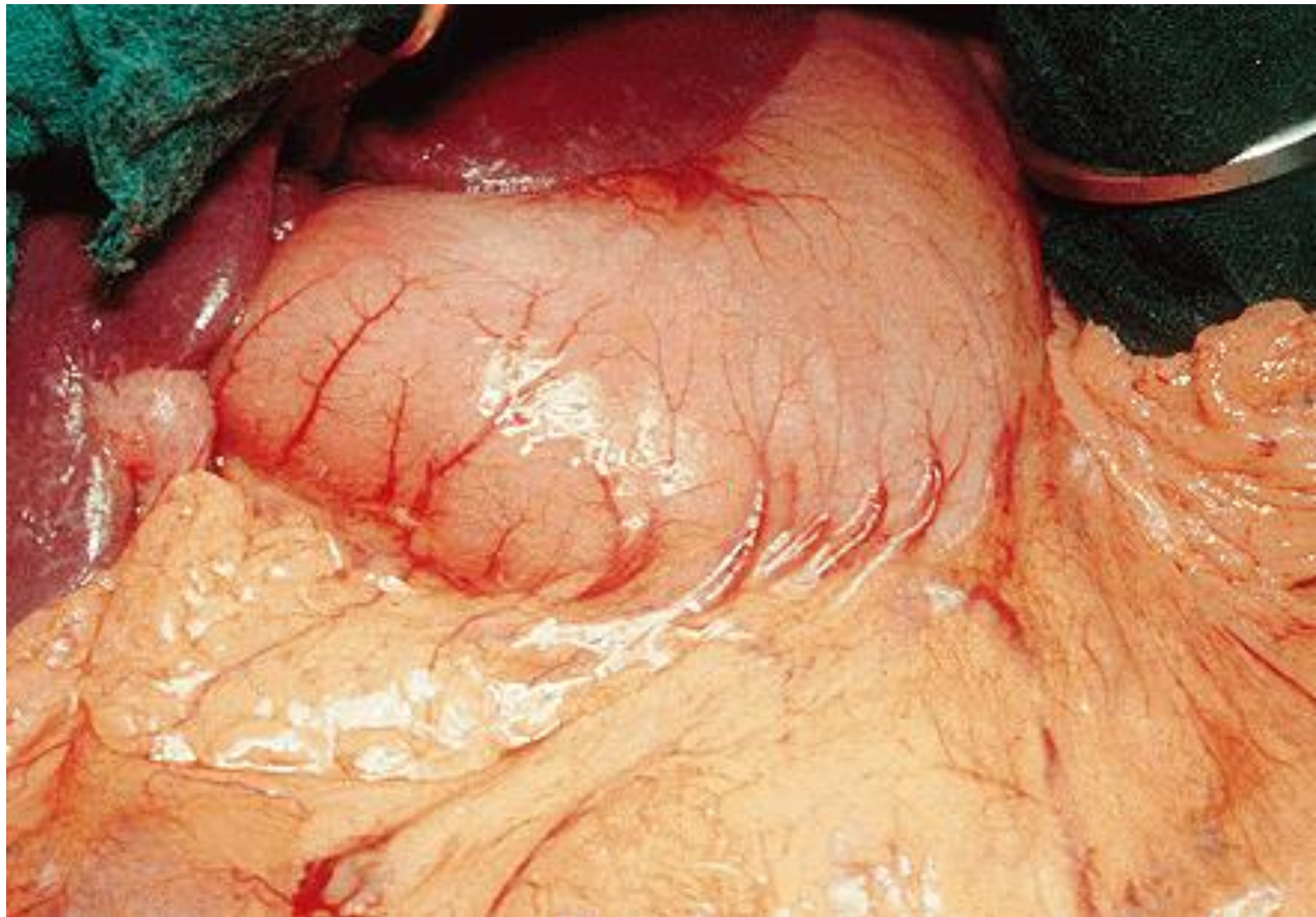


Incisura angularis
Pars digestoria
Pars egestoria



Gastroscopy

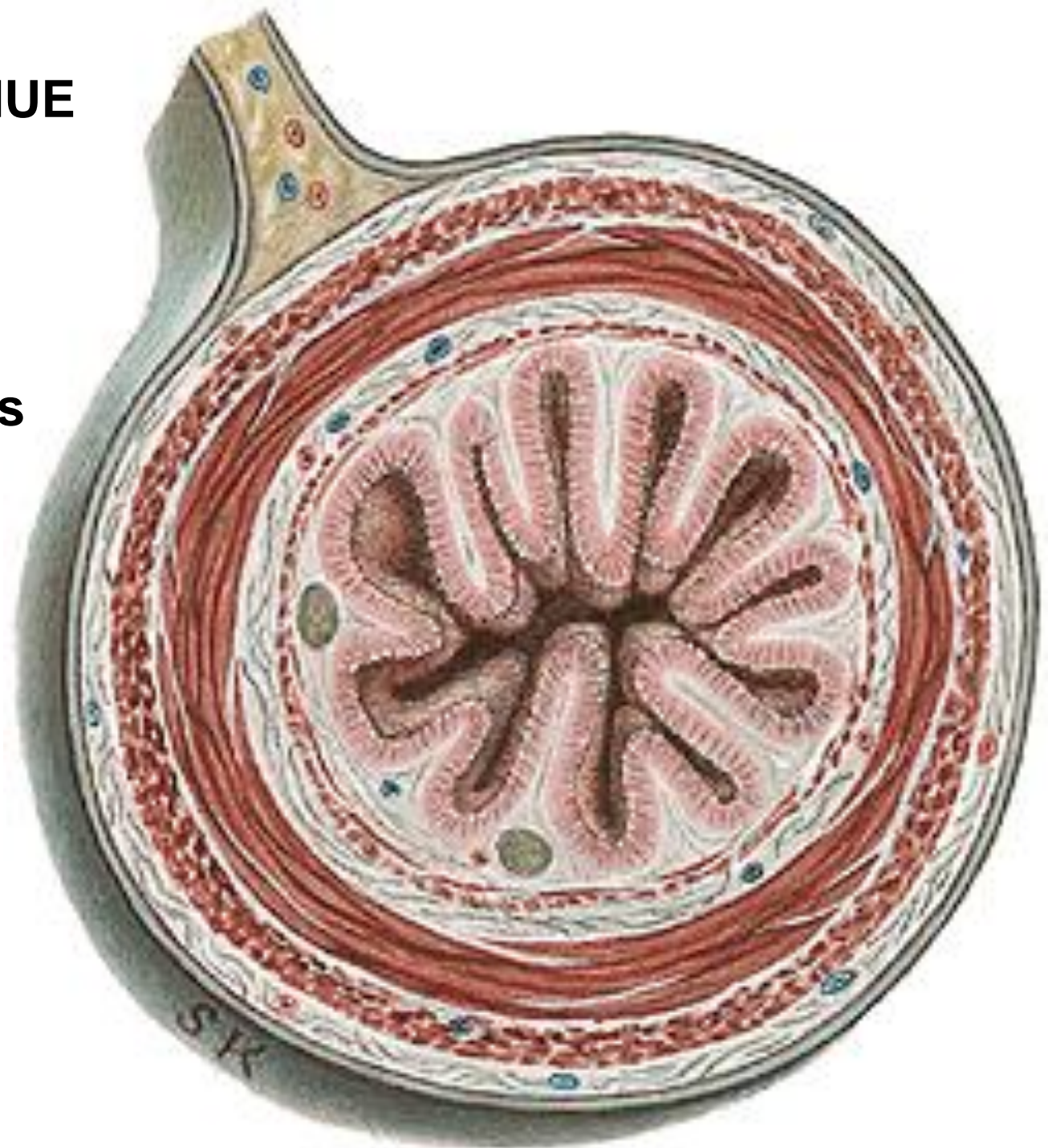




INTESTINUM TENUE

- duodenum
- jejunum
- ileum

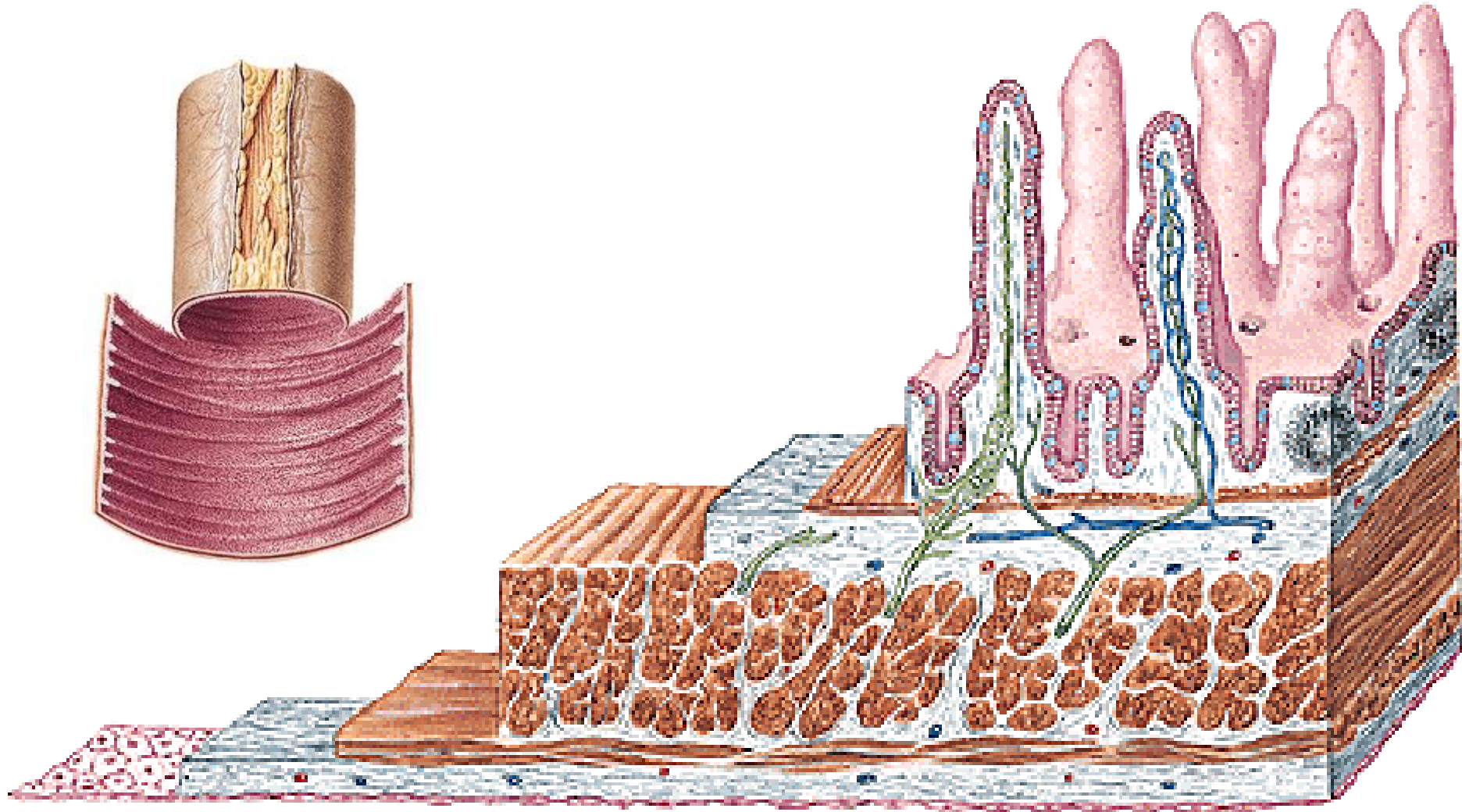
Ansae intestinales
Mesenterium



Plicae circulares Kerkringi

Villi intestinales

Glandulae intestinales – crypts of Lieberkuehn

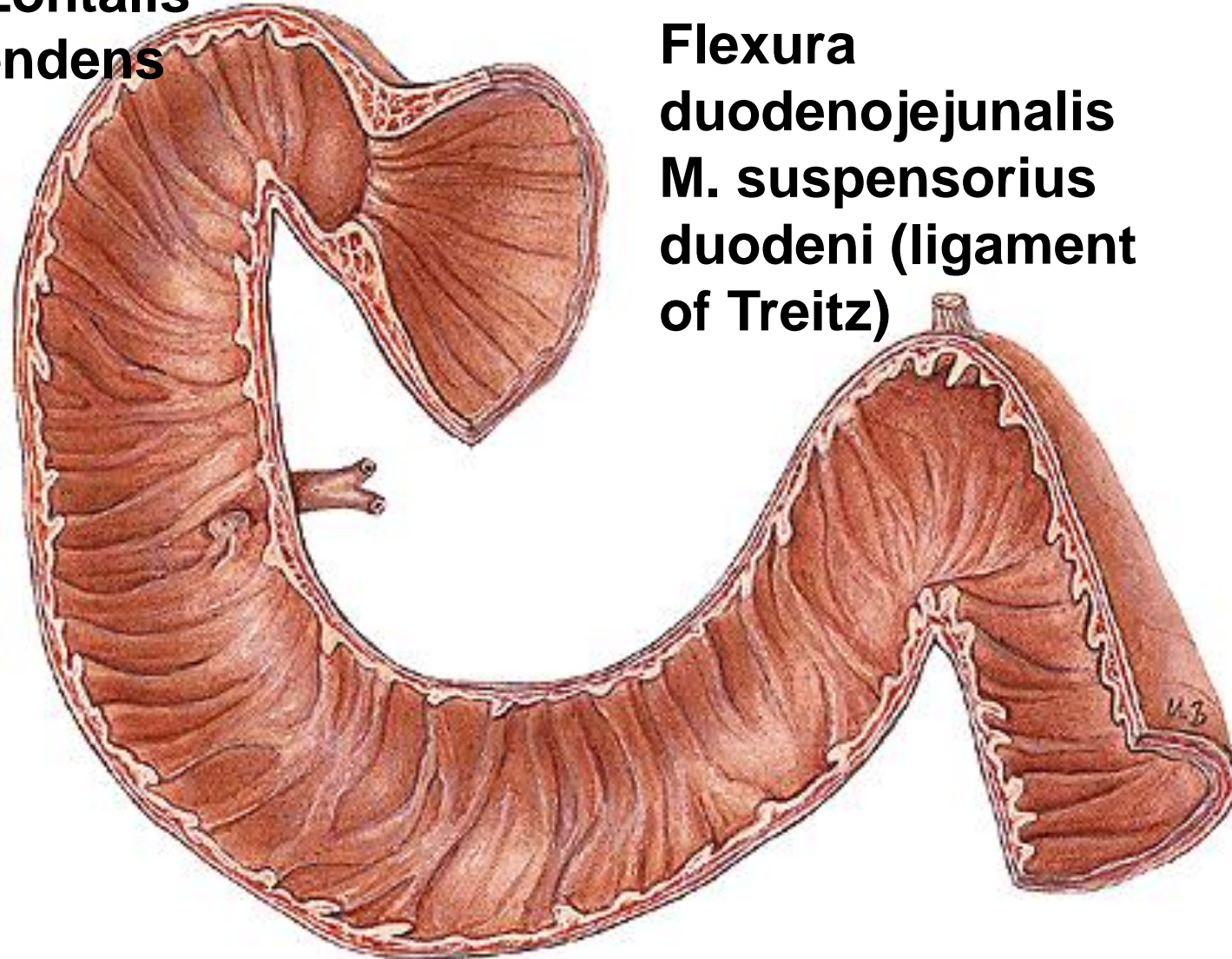


DUODENUM

- pars superior (bulbus duodeni), flexura duodeni sup
- pars descendens, flexura duodeni inf.
- pars horizontalis
- pars ascendens

Flexura
duodenojejunalis
M. suspensorius
duodeni (ligament
of Treitz)

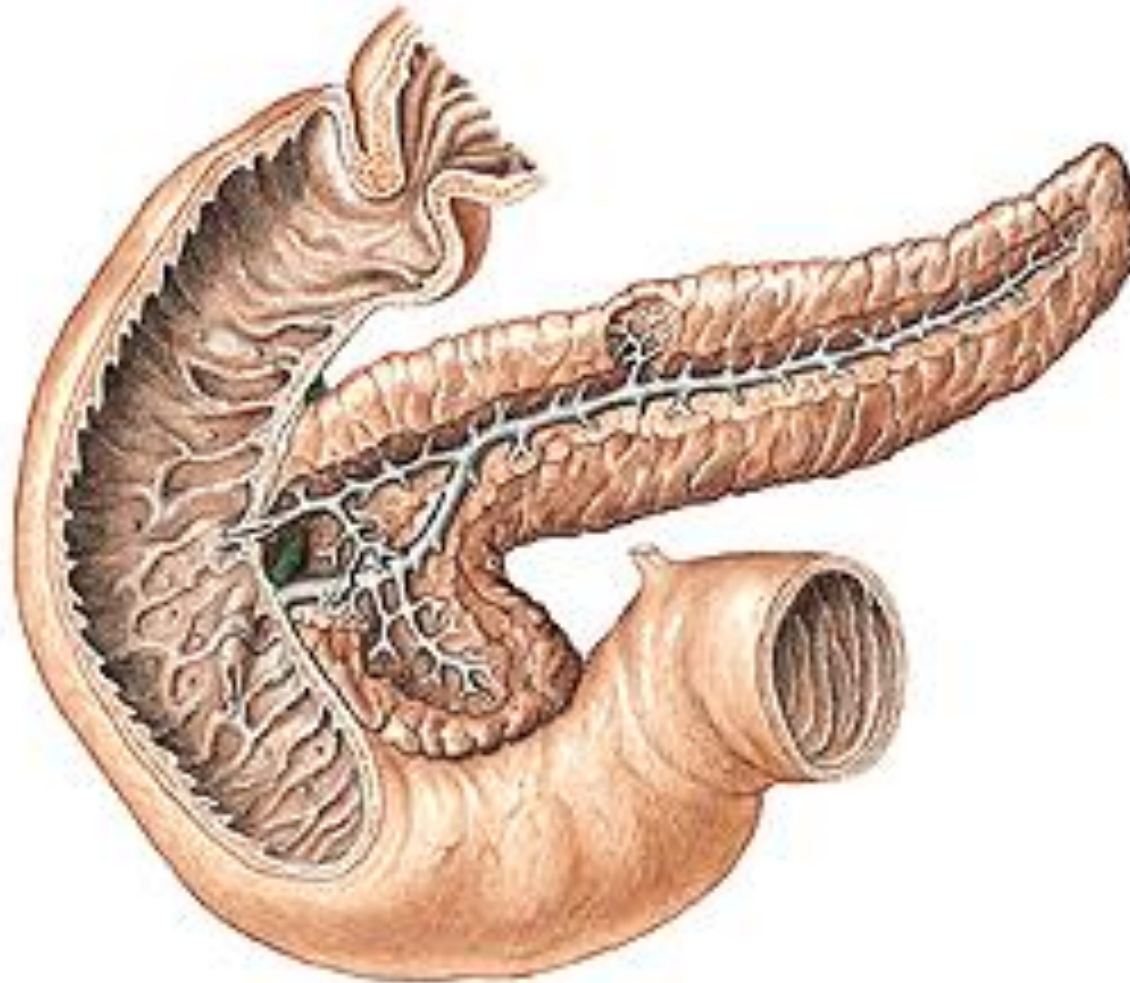
Glandulae
duodenales
Brunneri

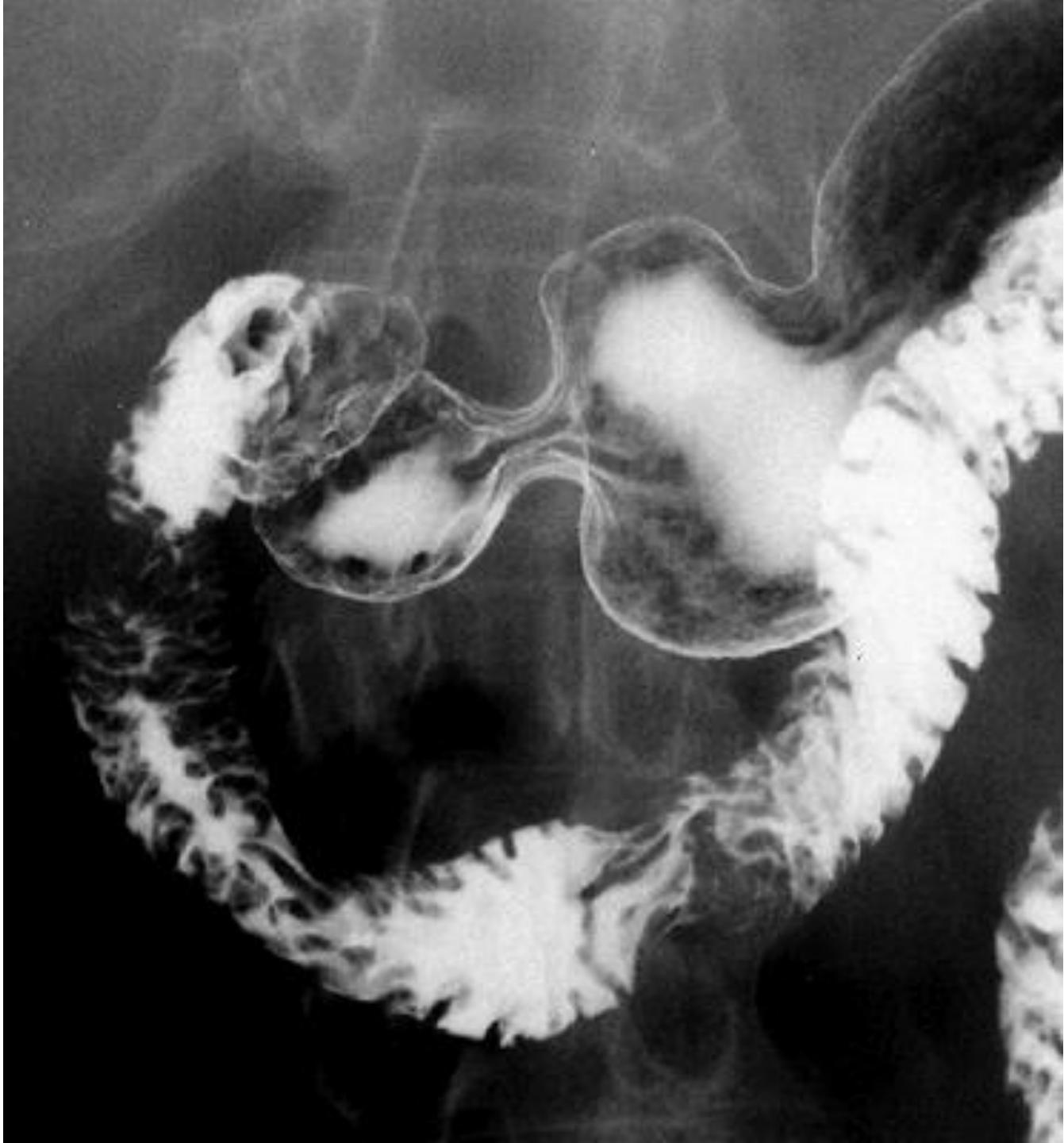


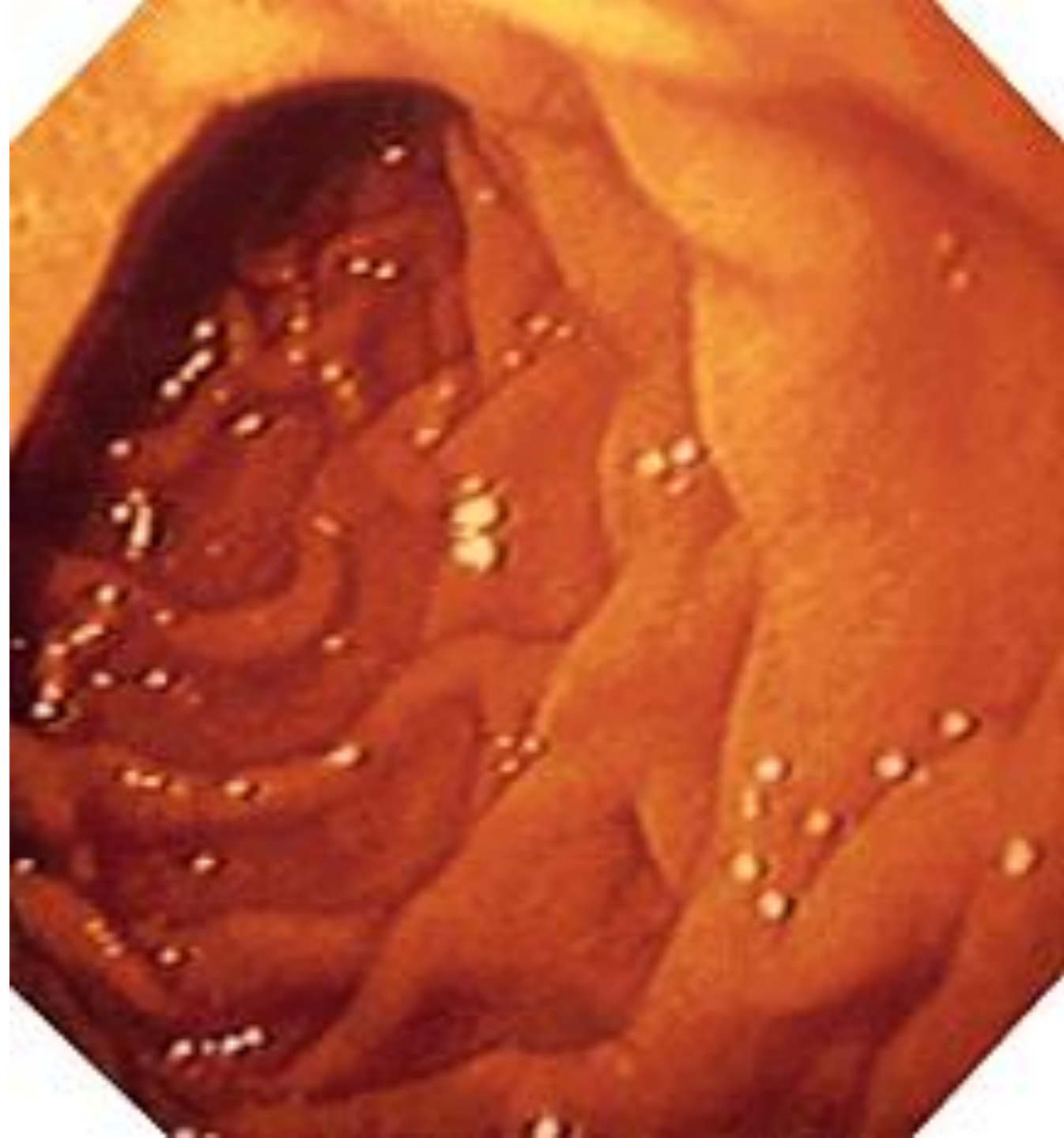
Plica longitudinalis duodeni

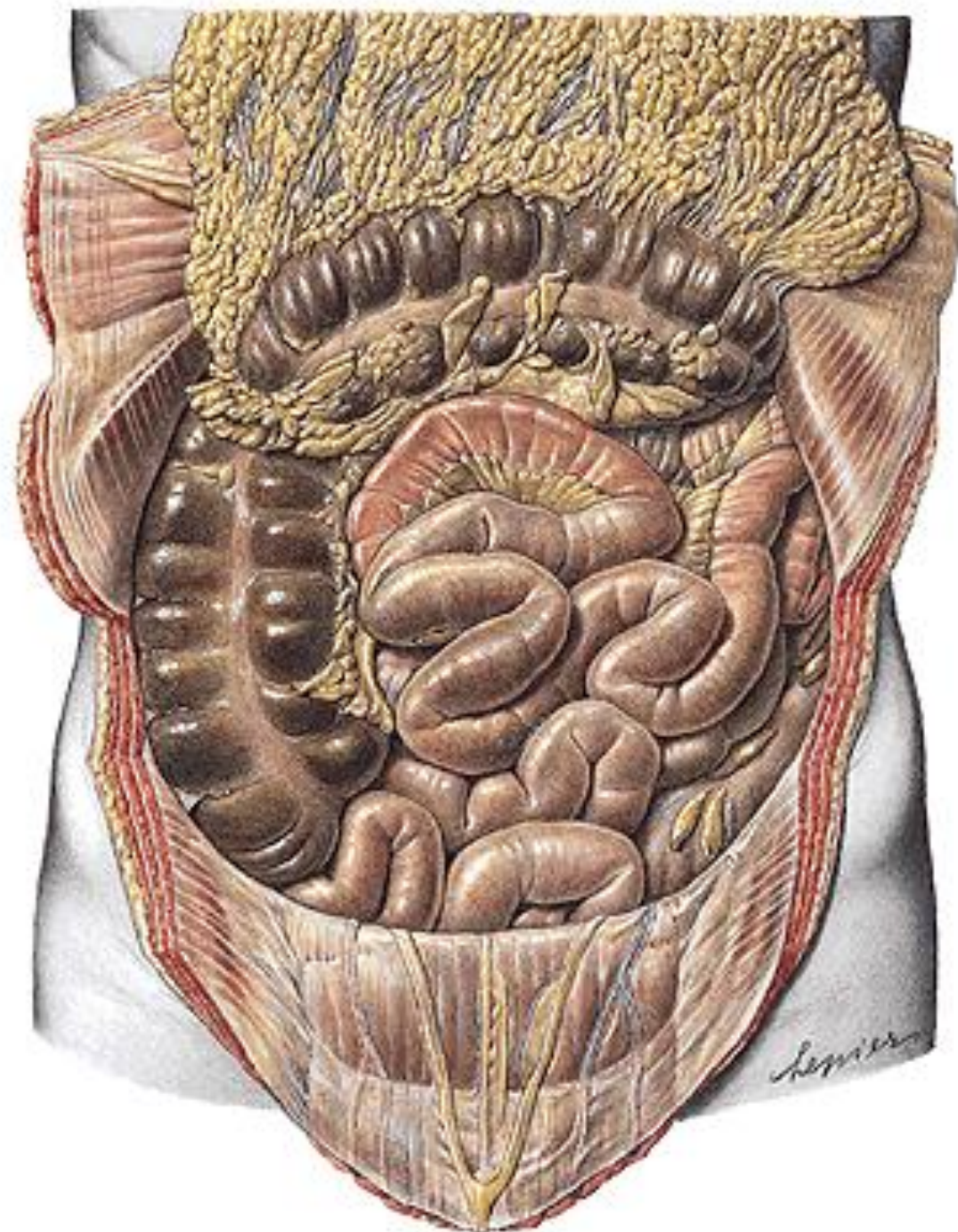
**Papilla duodeni major Vateri - ductus choledochus
- ductus pancreaticus**

**Papilla duodeni
minor-
ductus
pancreaticus
accessorius**



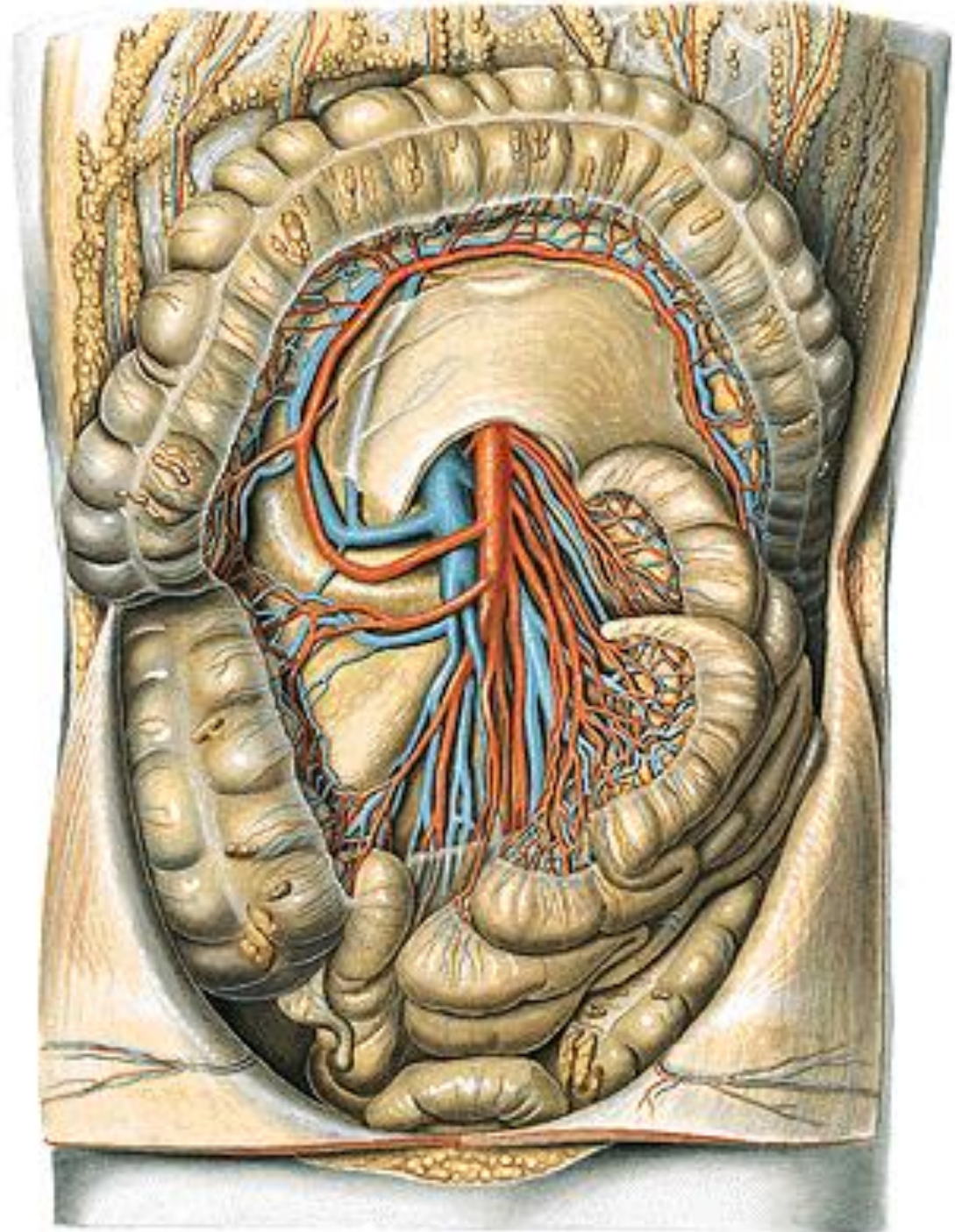


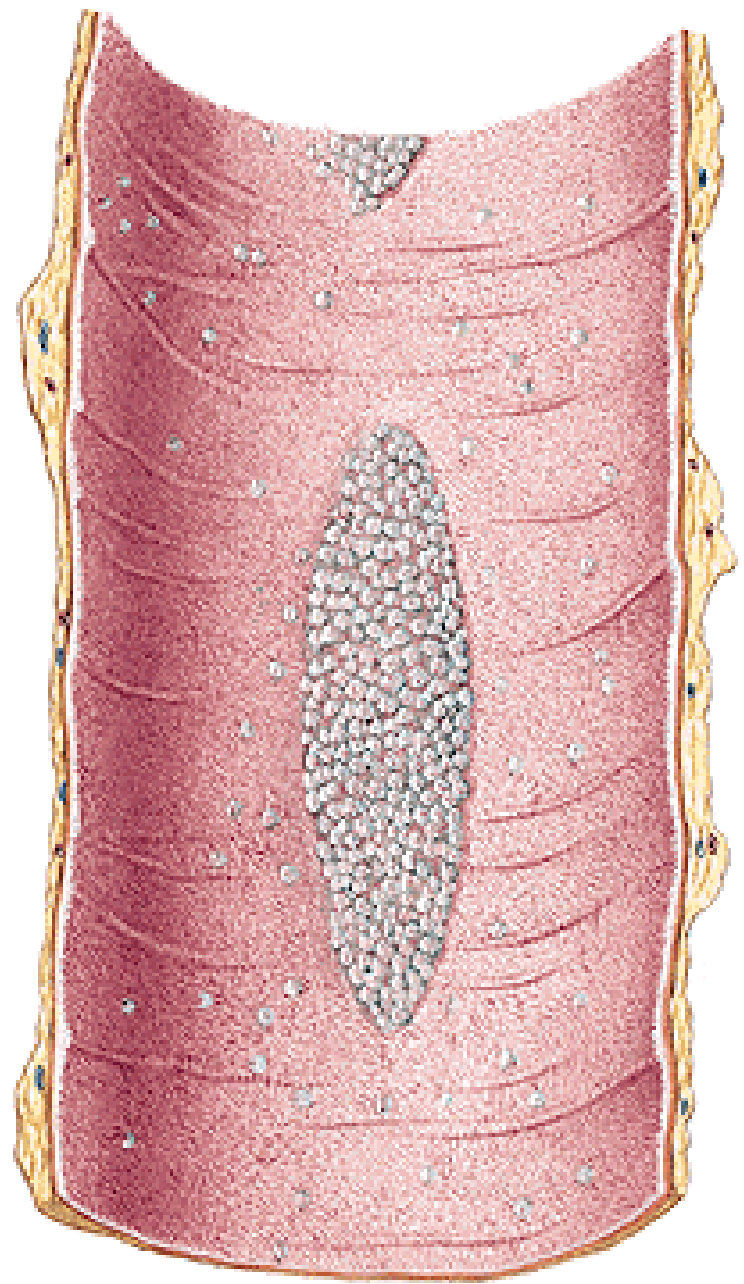
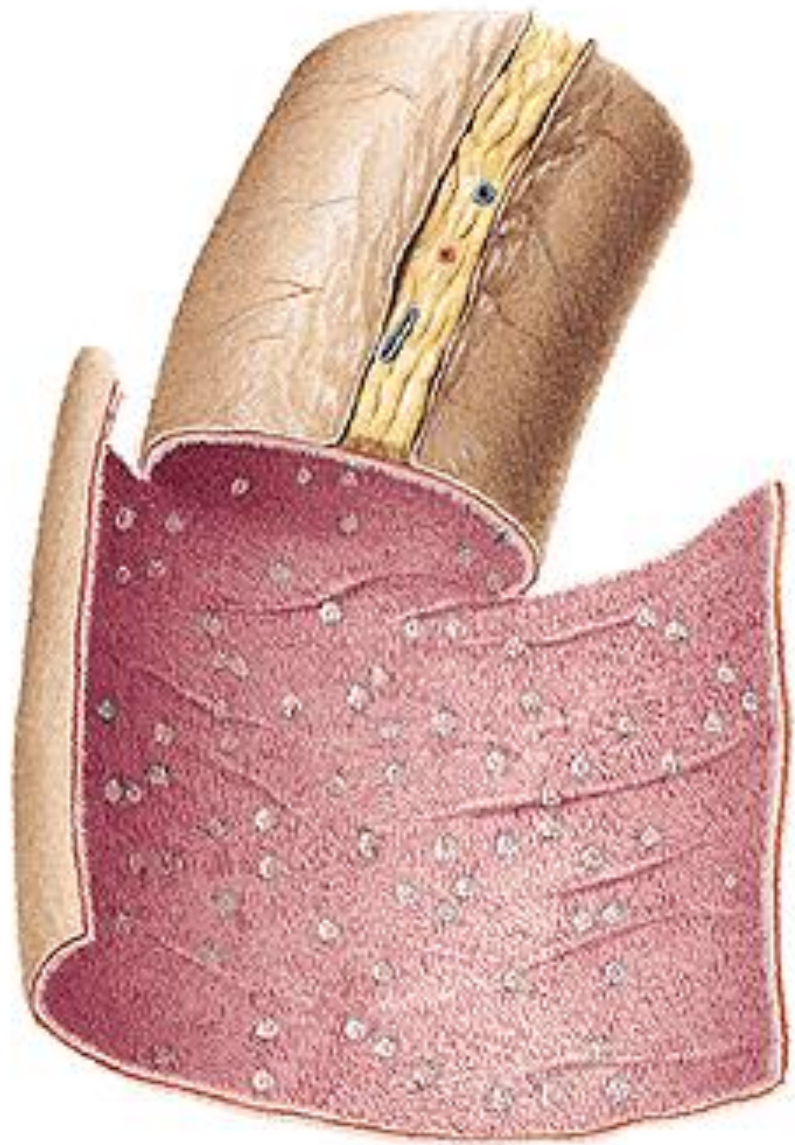




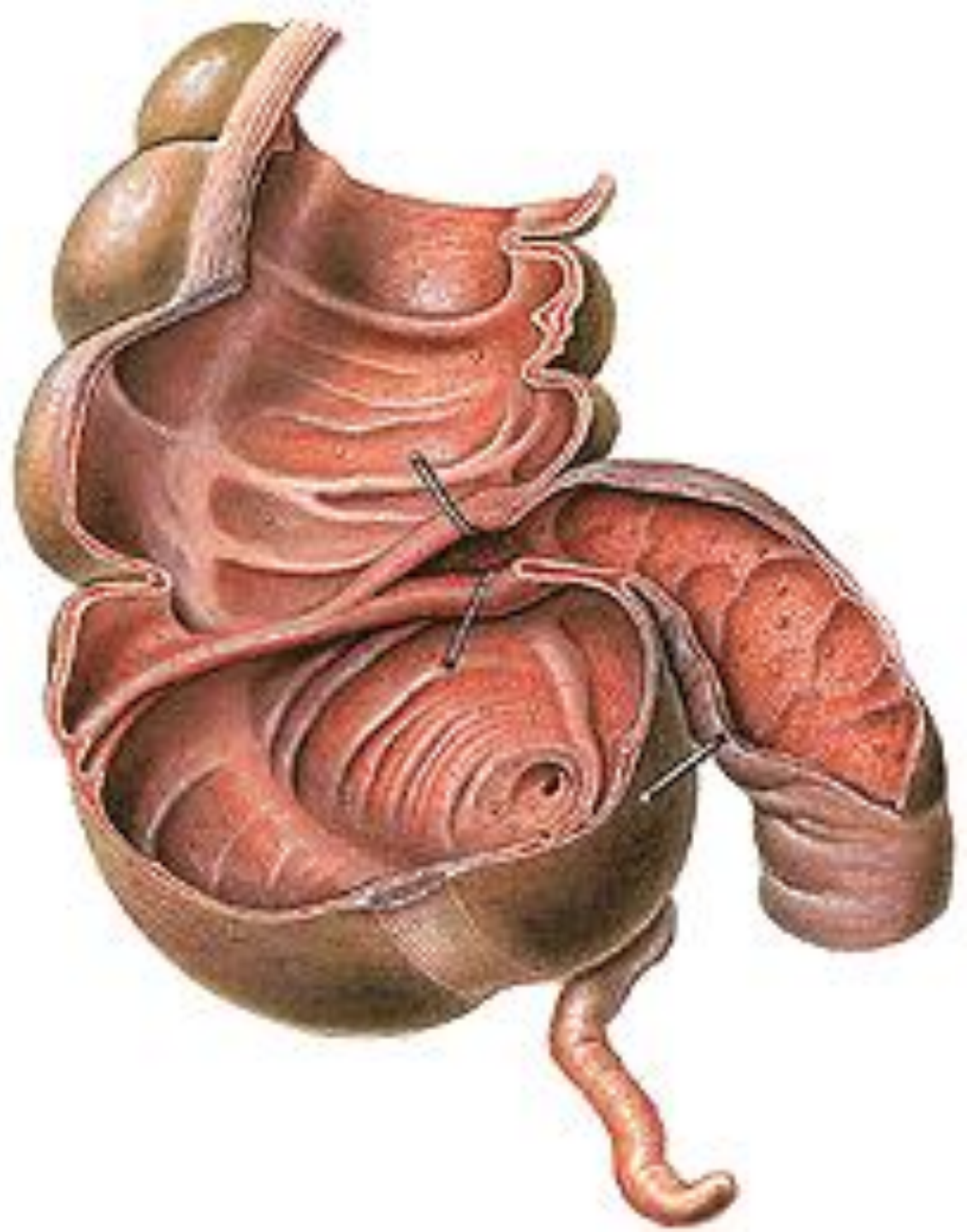
JEJUNUM	ILEUM
upper left part of the inframesocolic space	lower right part of the inframesocolic space
wider (3-4 cm)	narrower (2-3 cm)
more plicae circulares	fewer plicae circulares
1-2 arcades	2-3 arcades
folliculi lymph. solitarii	folliculi lymph. aggregati

A. mesenterica sup.



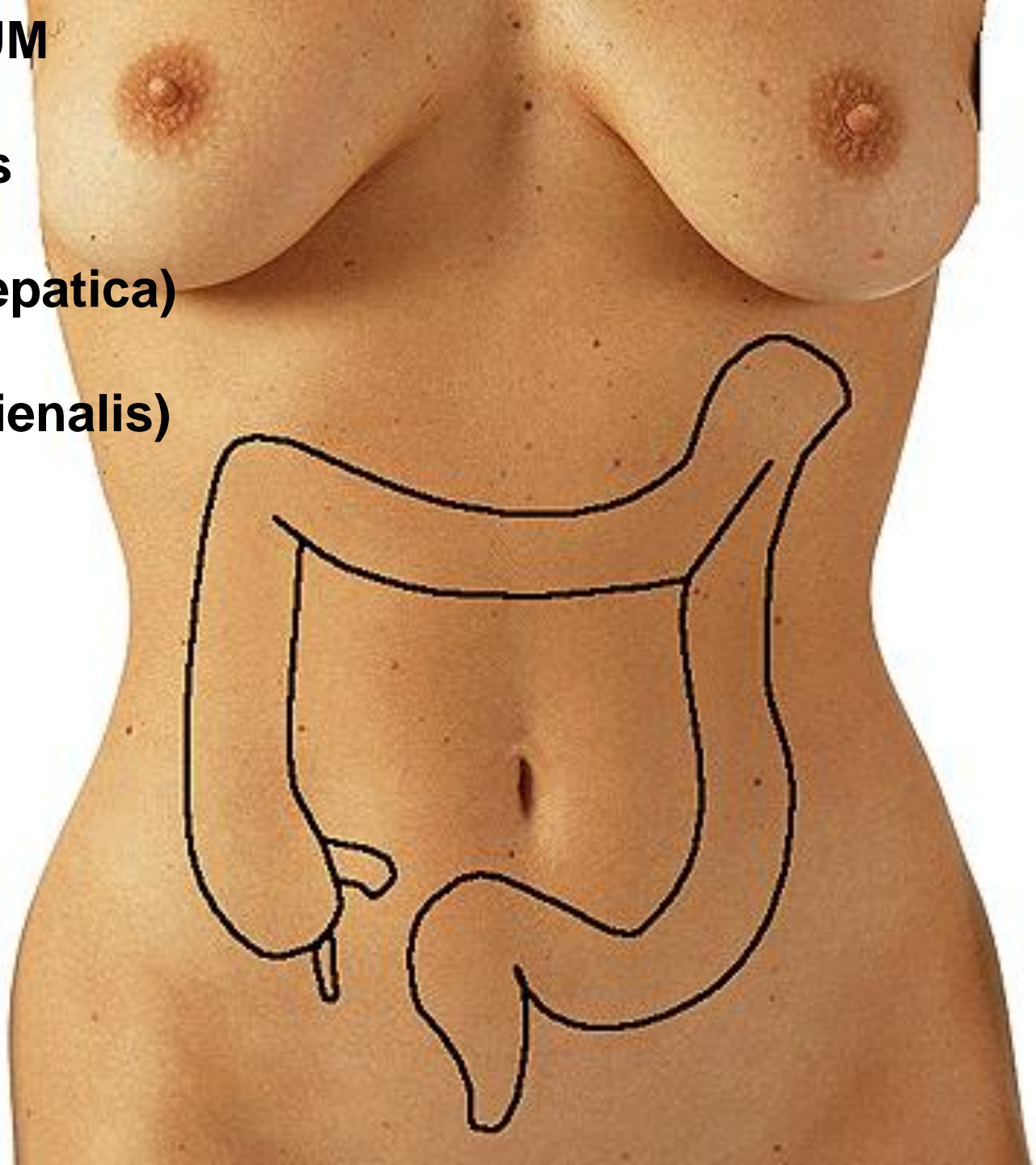


Ostium ileocaecale
Valva ileocaecalis
-labium superius
-labium inferius

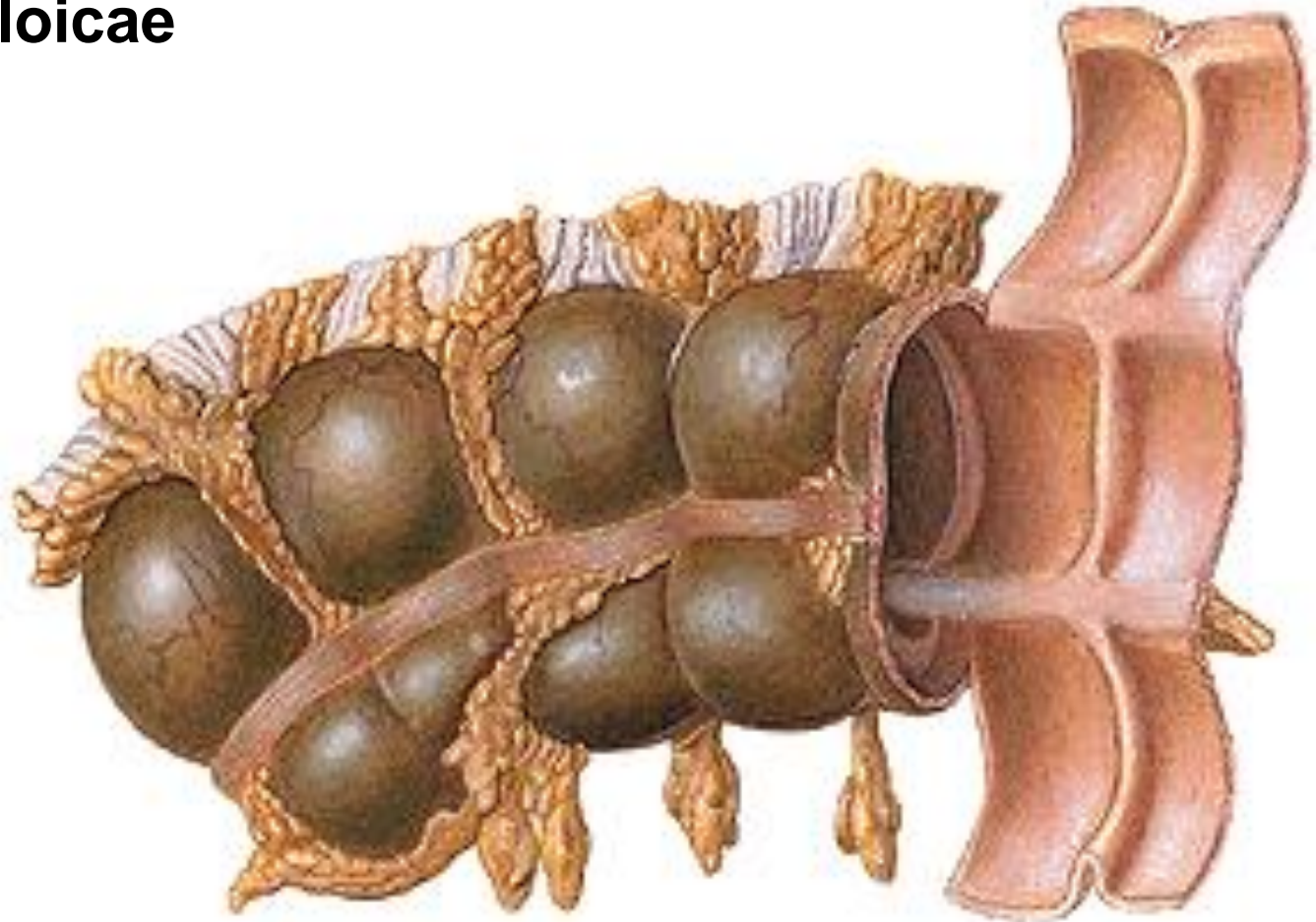


INTESTINUM CRASSUM

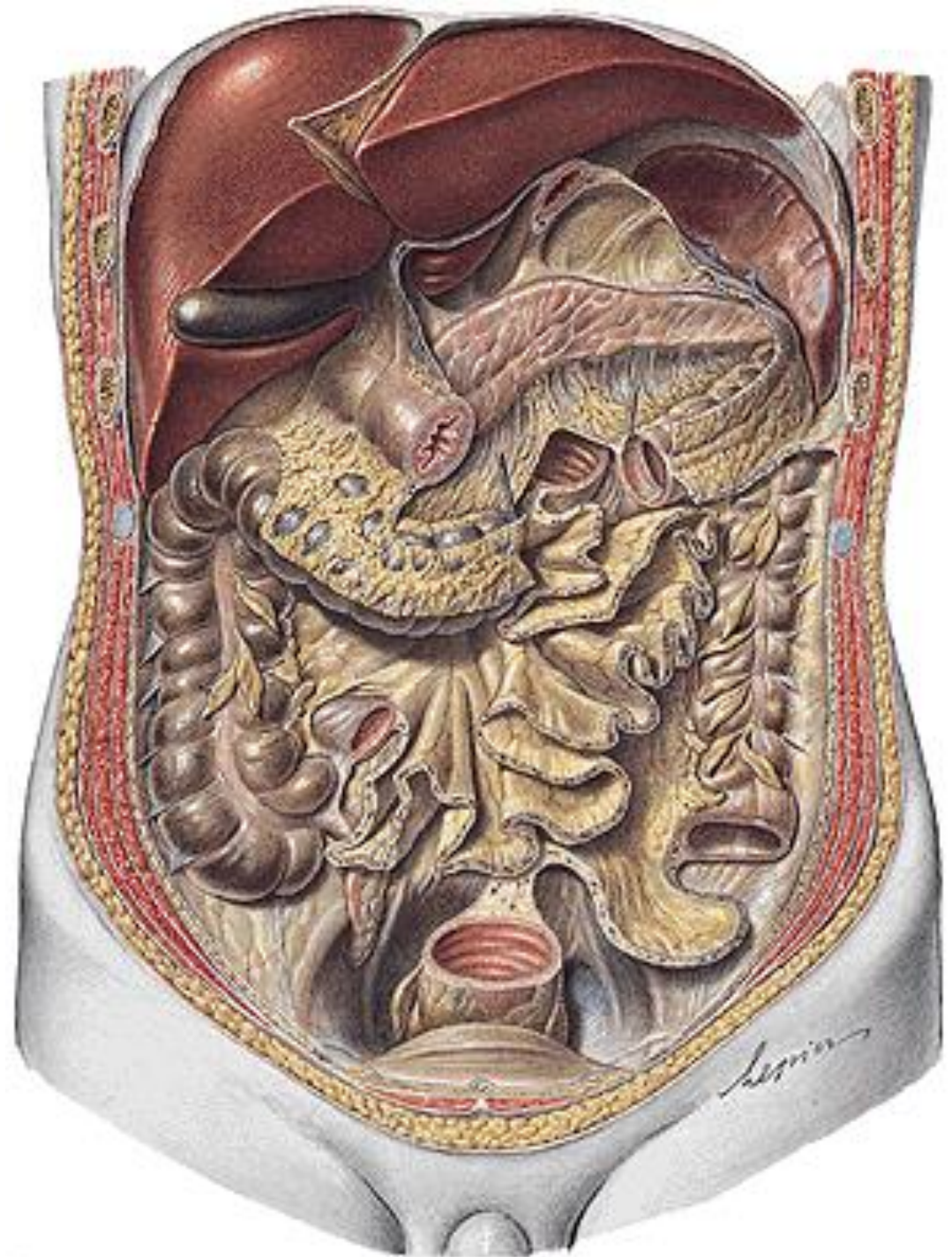
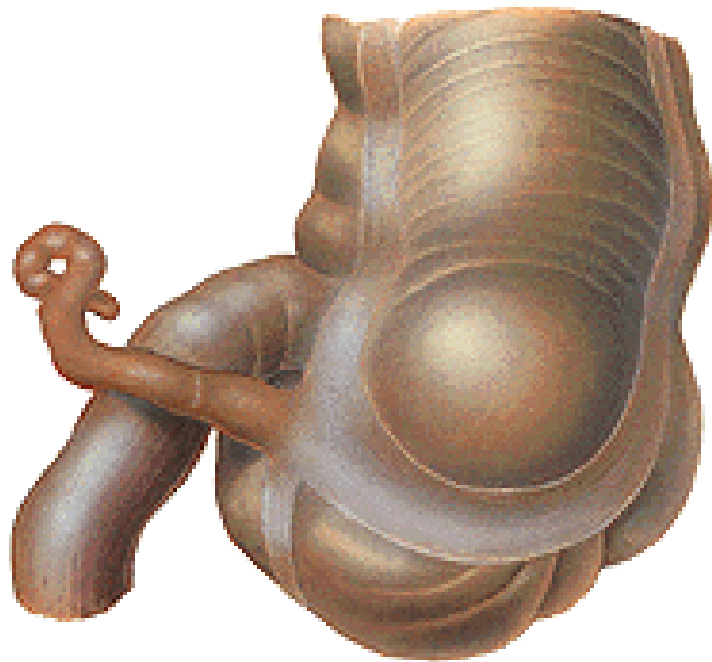
- intestinum caecum**
- appendix vermiformis**
- colon ascendens**
- flexura coli dextra (hepatica)**
- colon transversum**
- flexura coli sinistra (lienalis)**
- colon descendens**
- colon sigmoideum**
- rectum**



Plicae semilunares
Haustra coli
Taenia mesocolica
Taenia omentalis
Taenia libera
Appendices epiploicae



INTESTINUM CAECUM



APPENDIX VERMIFORMIS

ostium appendicis vermiformis
valva appendicis vermiformis

Positio pelvina

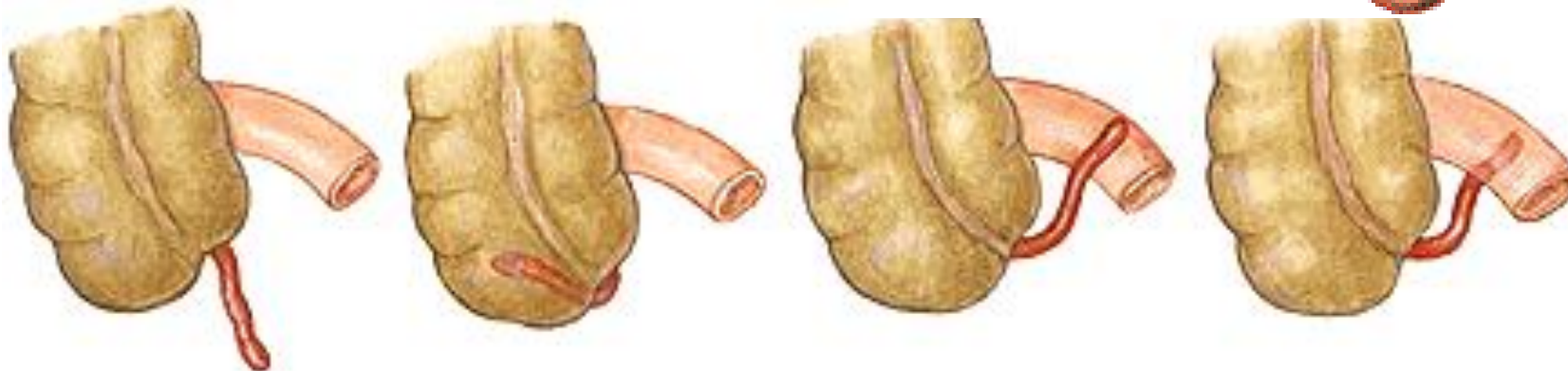
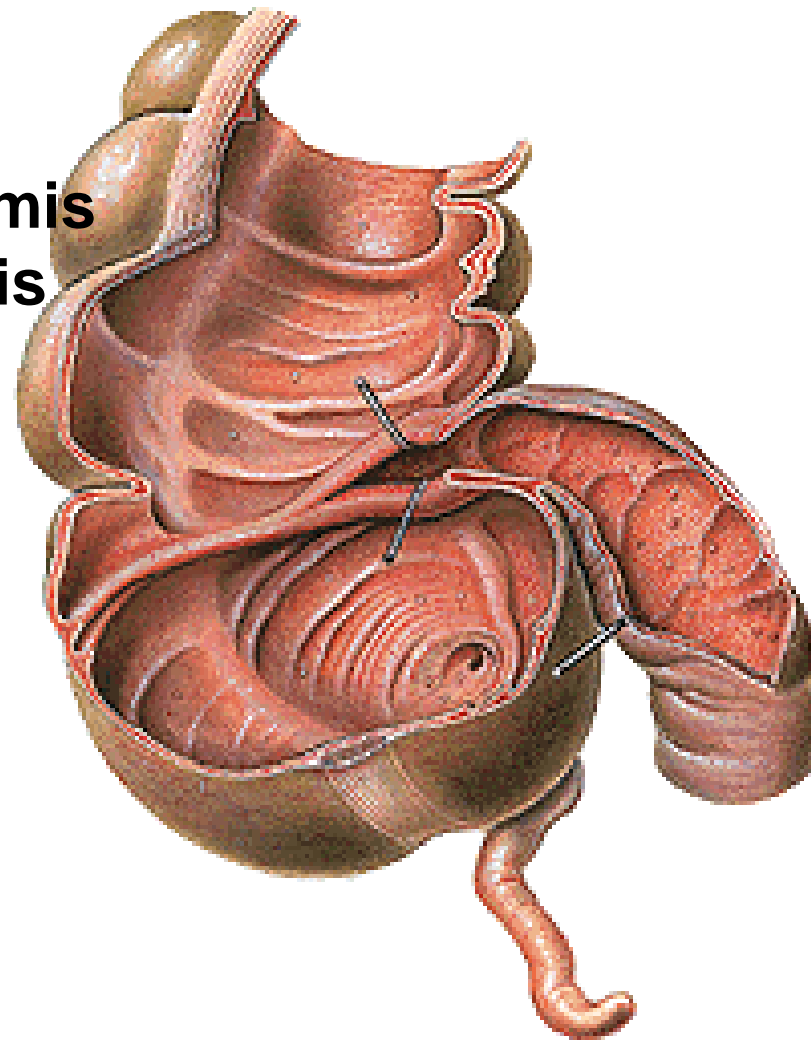
- lig. appendiculoovaricum

Positio retrocaecalis

Positio ileocaecalis

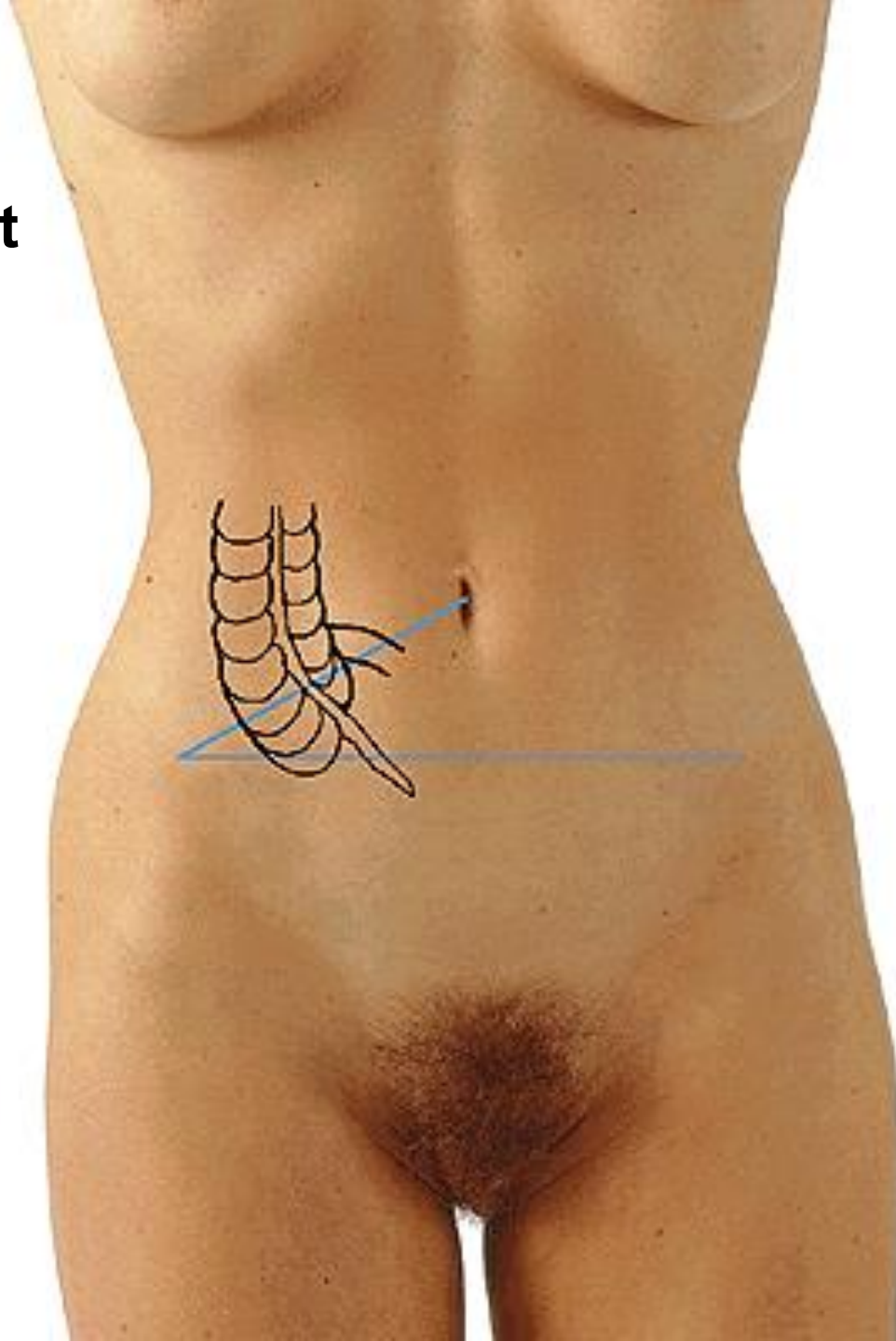
Positio retroilealis

Positio praecaecalis



**Linea spinoumbilicalis dextra
(Monro) - MacBurney's point
Linea bispinalis – Lanz's point**

Tonsilla abdominalis



COLON ASCENDENS
Flexura coli dextra
(hepatica)



COLON TRANSVERSUM

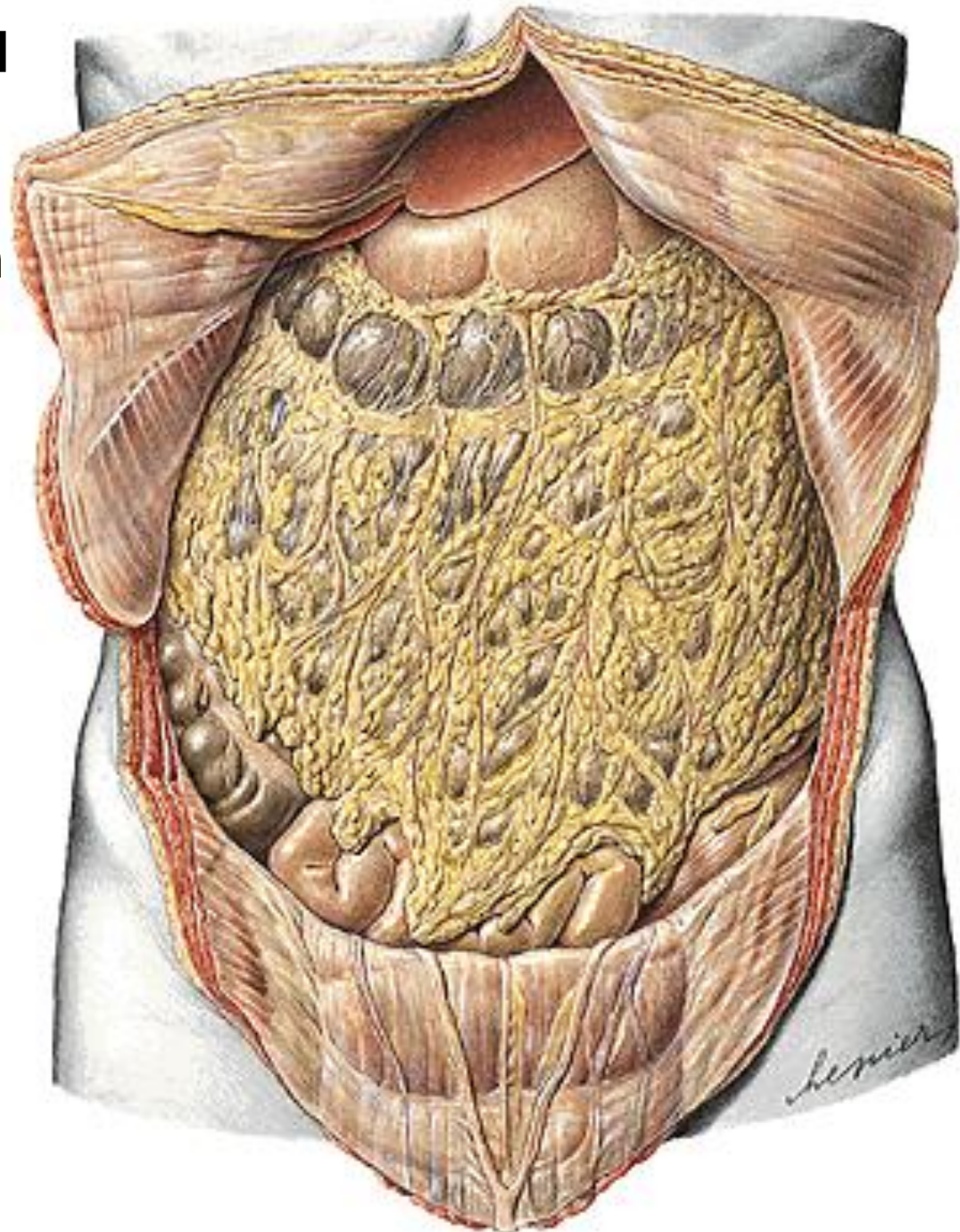
Flexura coli sinistra

(lienalis)

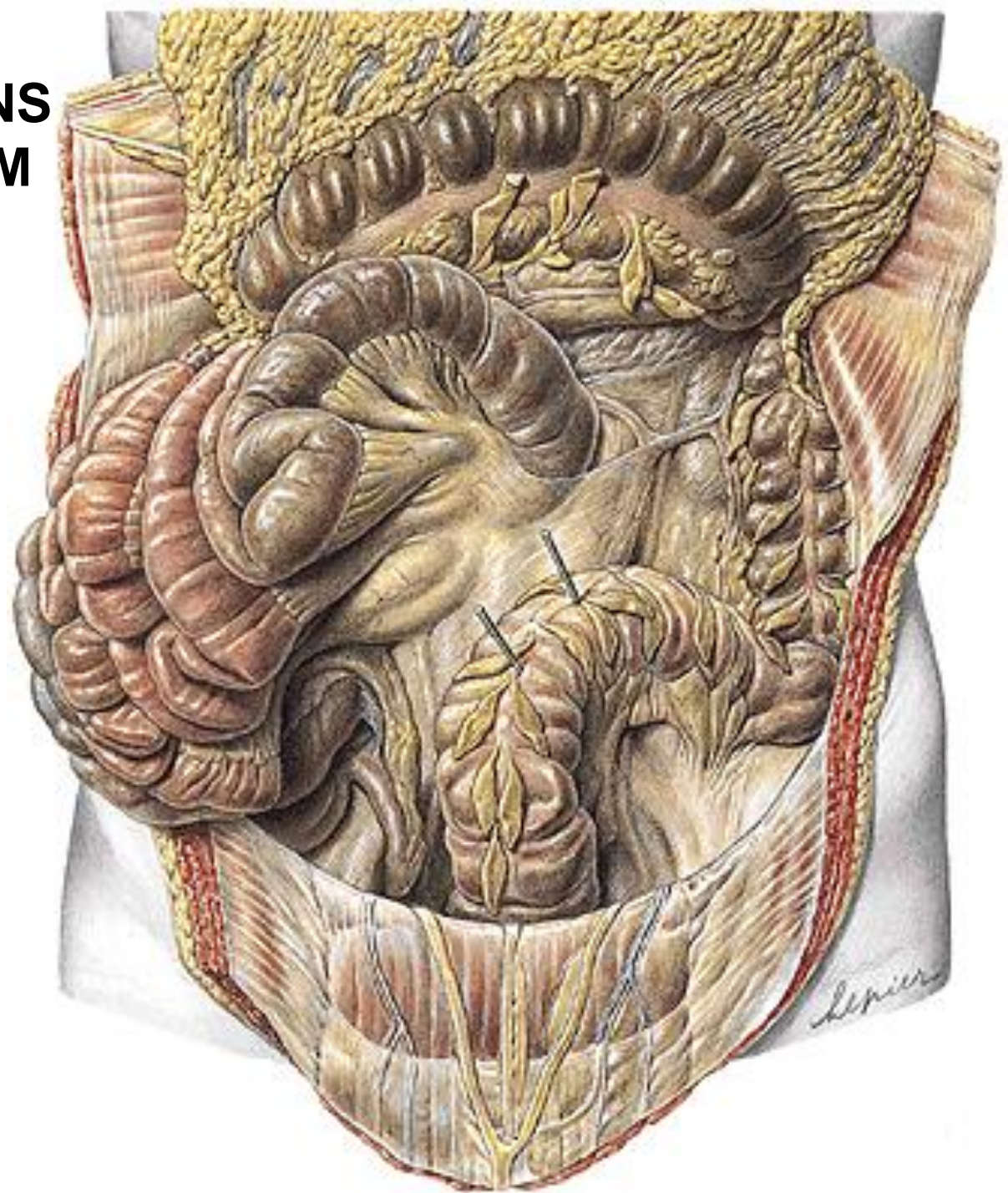
Mesocolon transversum

Omentum majus

Lig. gastrocolicum



COLON DESCENDENS
COLON SIGMOIDEUM
Mesosigmoideum



Irigography

DCBE



RECTUM

Crena ani – anus

Ampulla recti

- flexura sacralis
- plicae transversae recti
- plica t.r. media (Kohlrausch)

Canalis analis

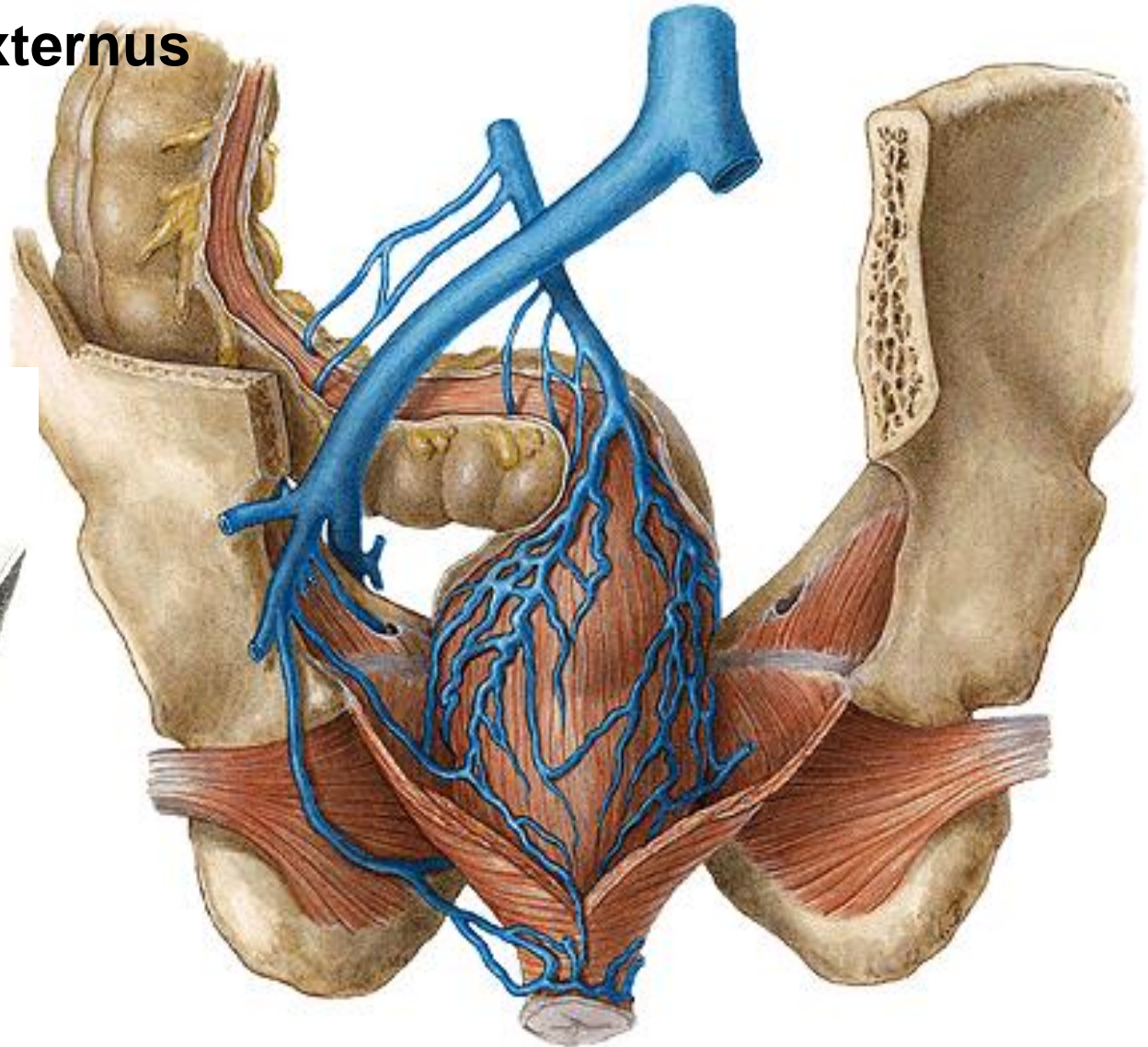
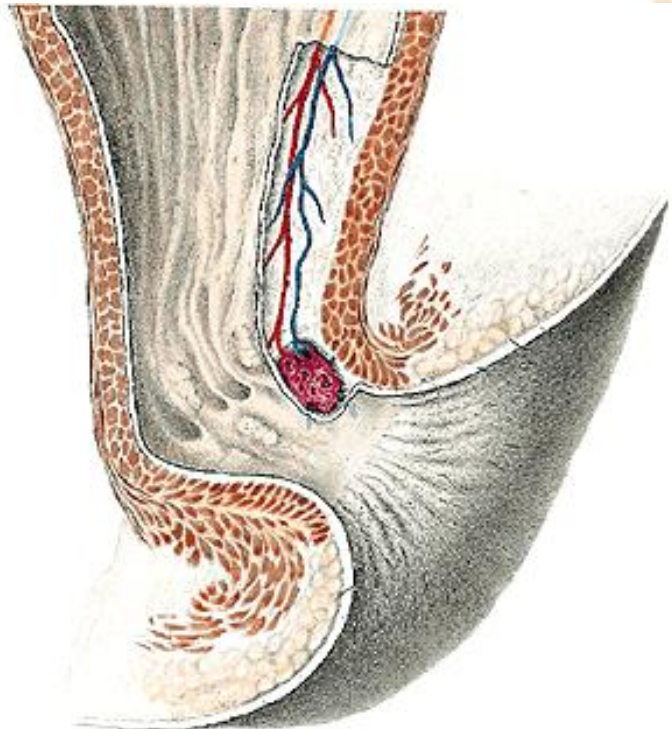
- flexura perinealis
- linea anorectalis
- columnae anales
- sinus anales
- valvulae anales
- pecten analis
- linea anocutanea
- zona haemorrhoidalis



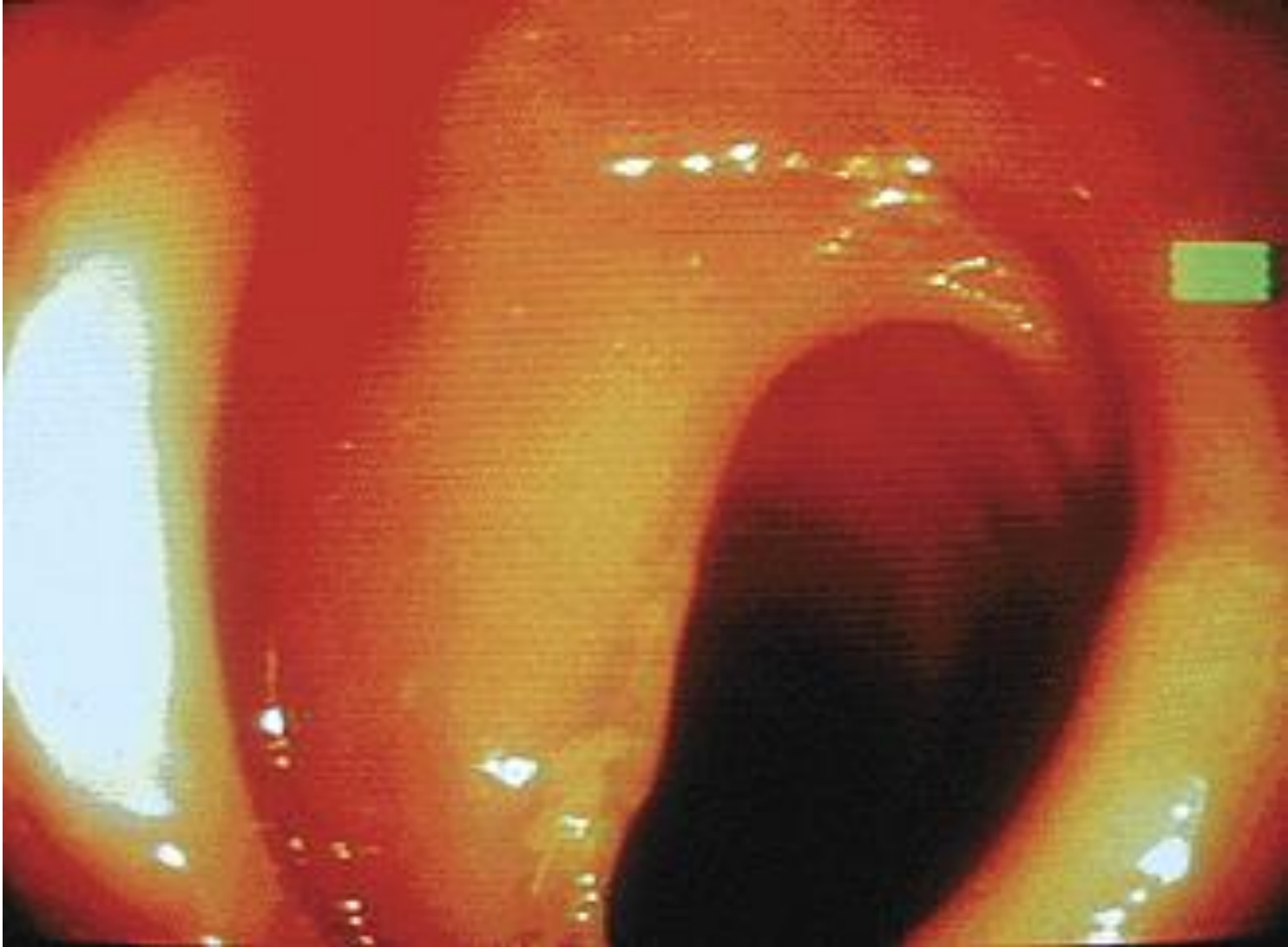
Plexus venosus rectalis

M. sphincter ani internus

M. sphincter ani externus



Rectoscopy

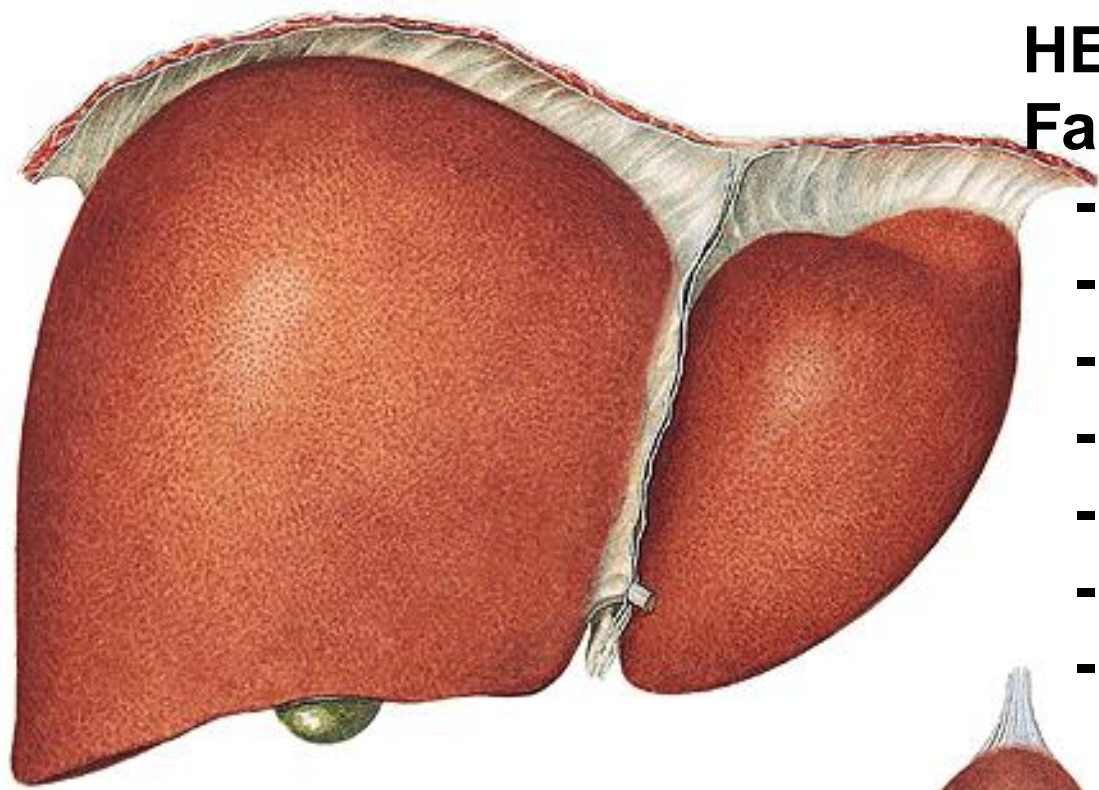


DIGESTIVE SYSTEM III.
Liver, pancreas, spleen,
peritoneum

Liver

Regio hypochondriaca dx. + regio epigastrica





HEPAR

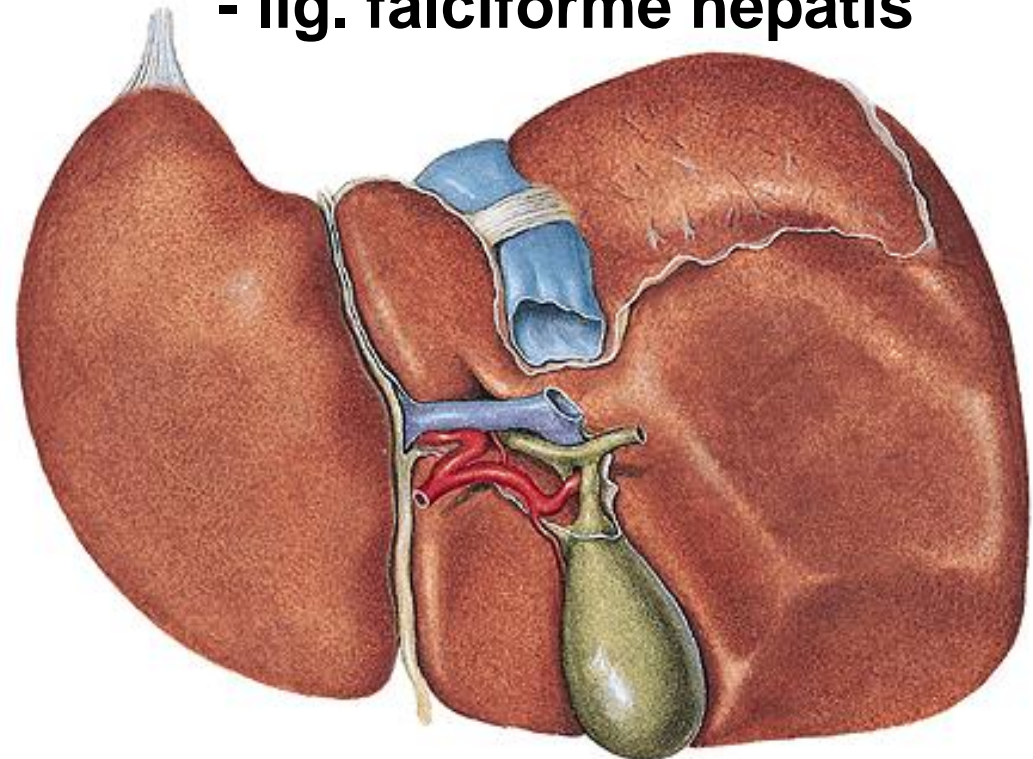
Facies diaphragmatica

- pars superior (area nuda)
- pars anterior
- lig. coronarium
- lig. triangulare dextrum
- lig. triangulare sinistrum
- appendix fibrosa hepatis
- lig. falciforme hepatis

Facies visceralis

Fissura sagittalis sinistra

- lig. teres hepatis
- lig. venosum



Fissura sagittalis dextra

- fossa vesicae biliaris
- sulcus v. cavae inferioris (lig. venae cavae)

Lobus dexter

sinister (tuber omentale)

caudatus

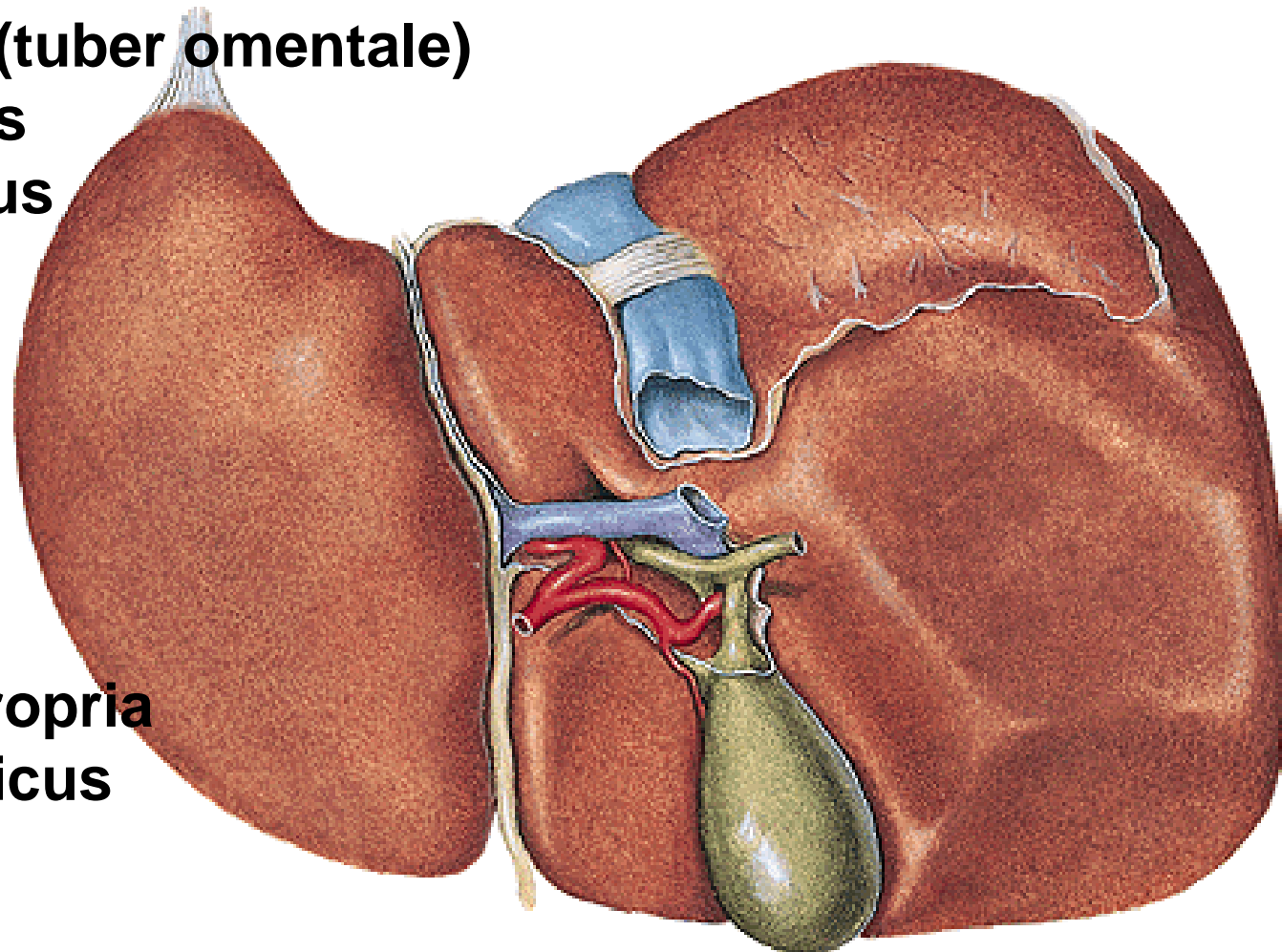
quadratus

Processus

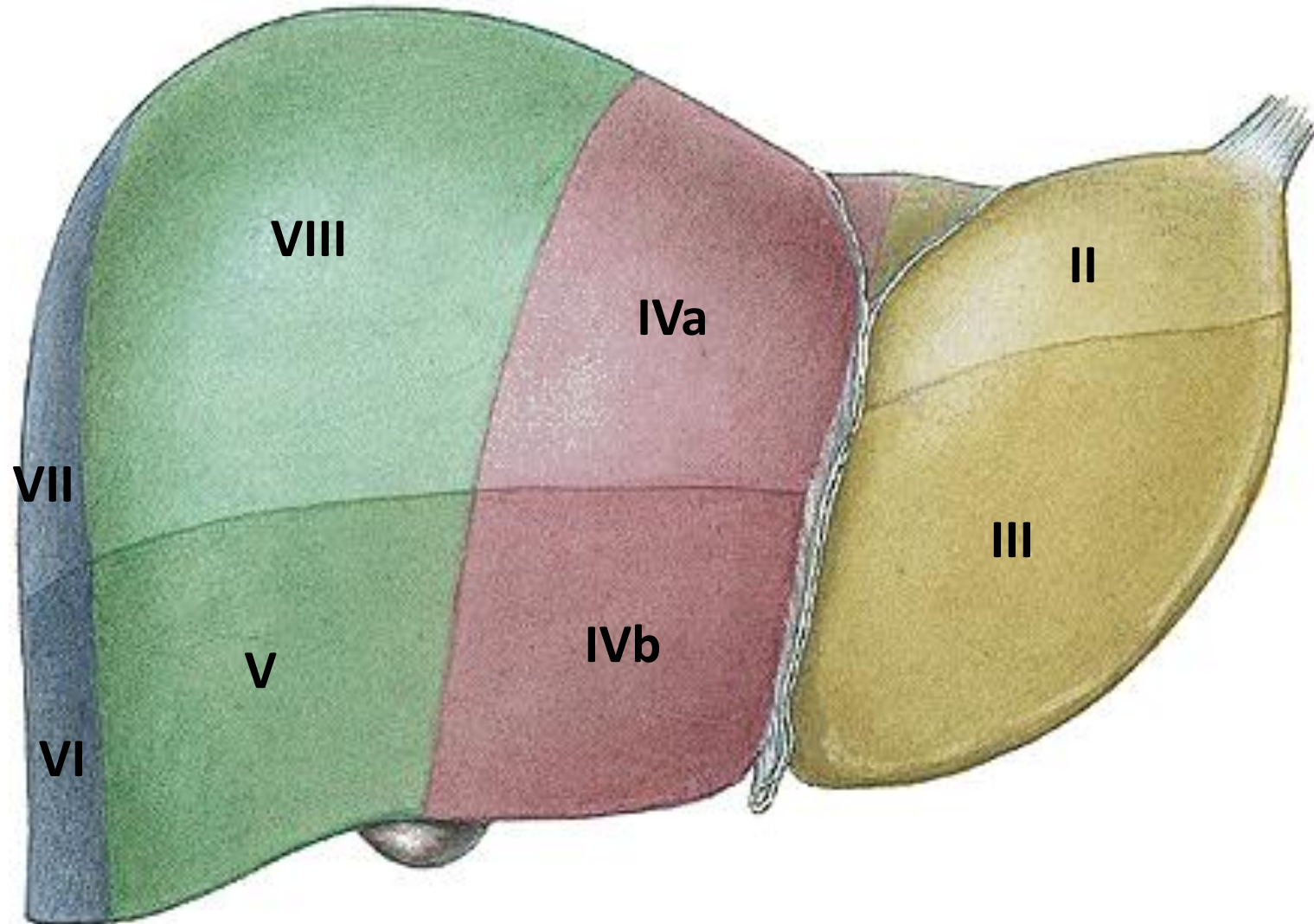
**caudatus,
papillaris**

Porta hepatis

- vena portae
- a. hepatica propria
- ductus hepaticus communis



Hepatic segments

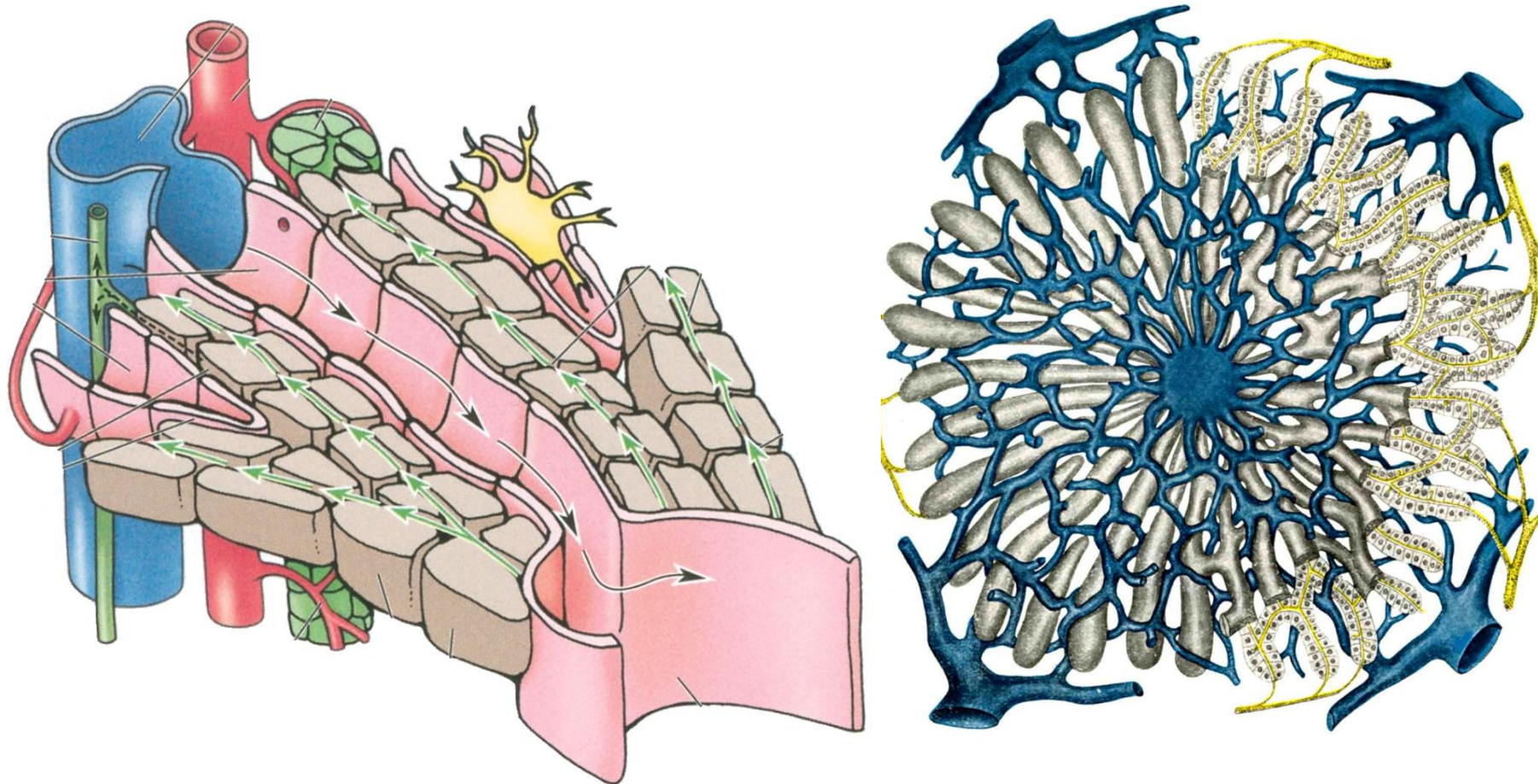


Capsula fibrosa – capsula fibrosa perivascularis

- v. interlobularis, a. interlobularis, ductus interlobularis

→ sinusoids → v. centralis

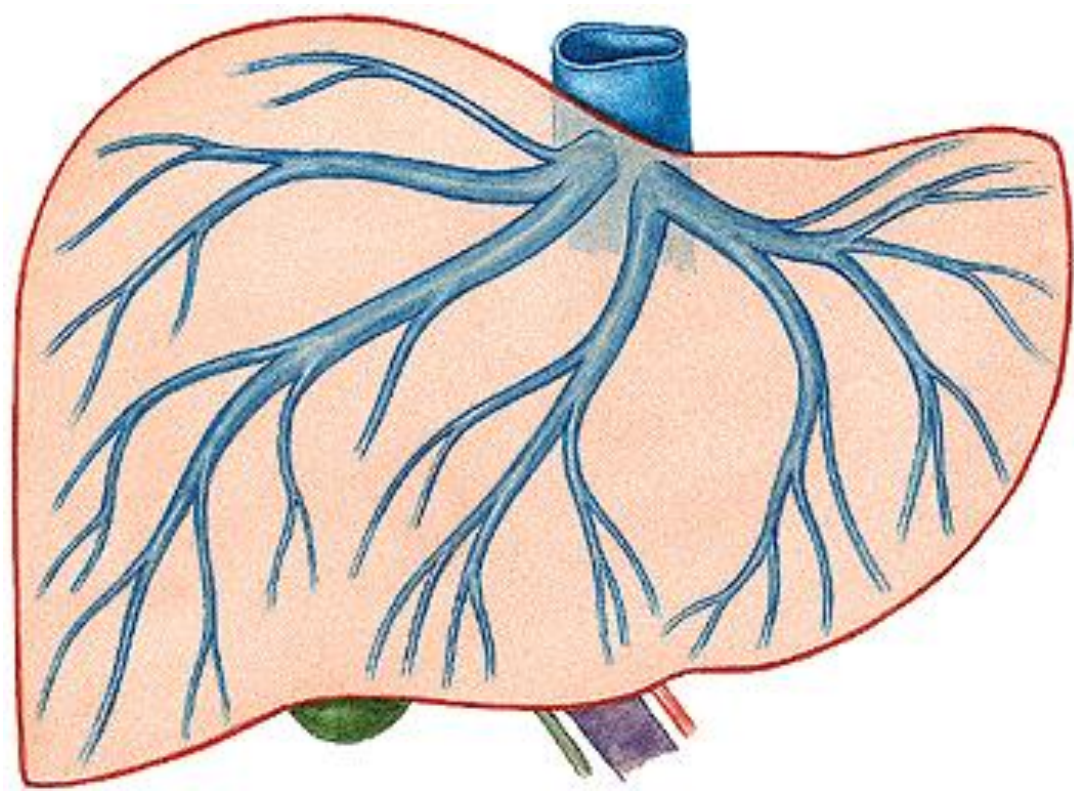
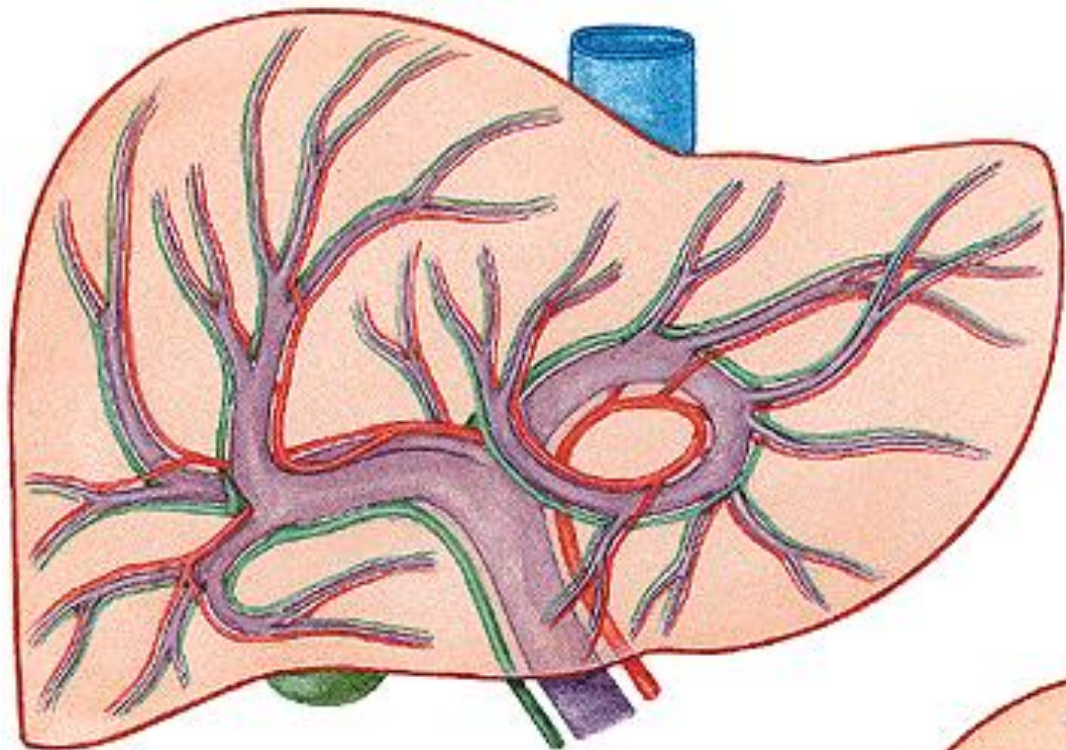
Lobulus venae centralis



V. PORTAE (v. mesenterica sup. + v. lienalis)

A. HEPATICA PROPRIA

**- ramus dexter et sinister..... aa. et vv. interlobulares,
aa. et vv. circumlobulares → sinusoids → v. centralis
→ vv. sublobulares → vv. hepaticae**



Canaliculus bilifer – ductus bilifer intralobularis
– ductulus bilifer - ductus bilifer interlobularis
– collecting ducts → ductus hepaticus dexter
et sinister – ductus hepaticus communis
+ ductus cysticus = ductus choledochus

Plica longitudinalis duodeni

Ampulla hepatopancreatica

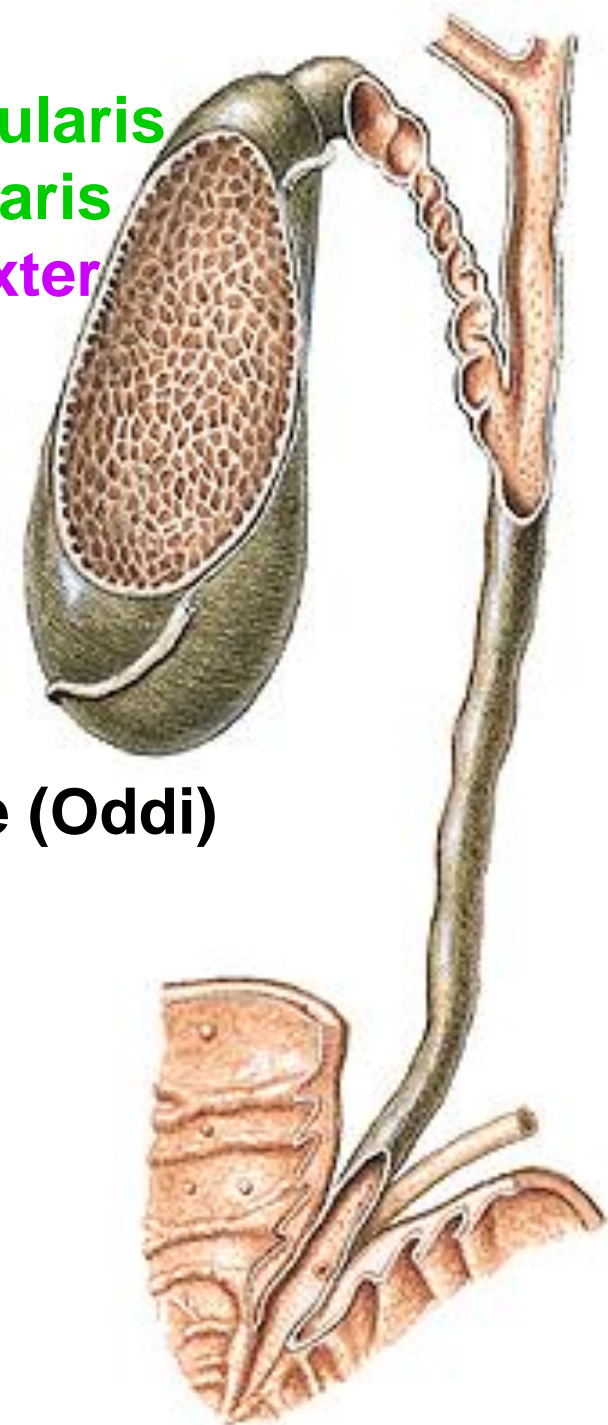
M. sphincter ampullae hepatopancreaticae (Oddi)

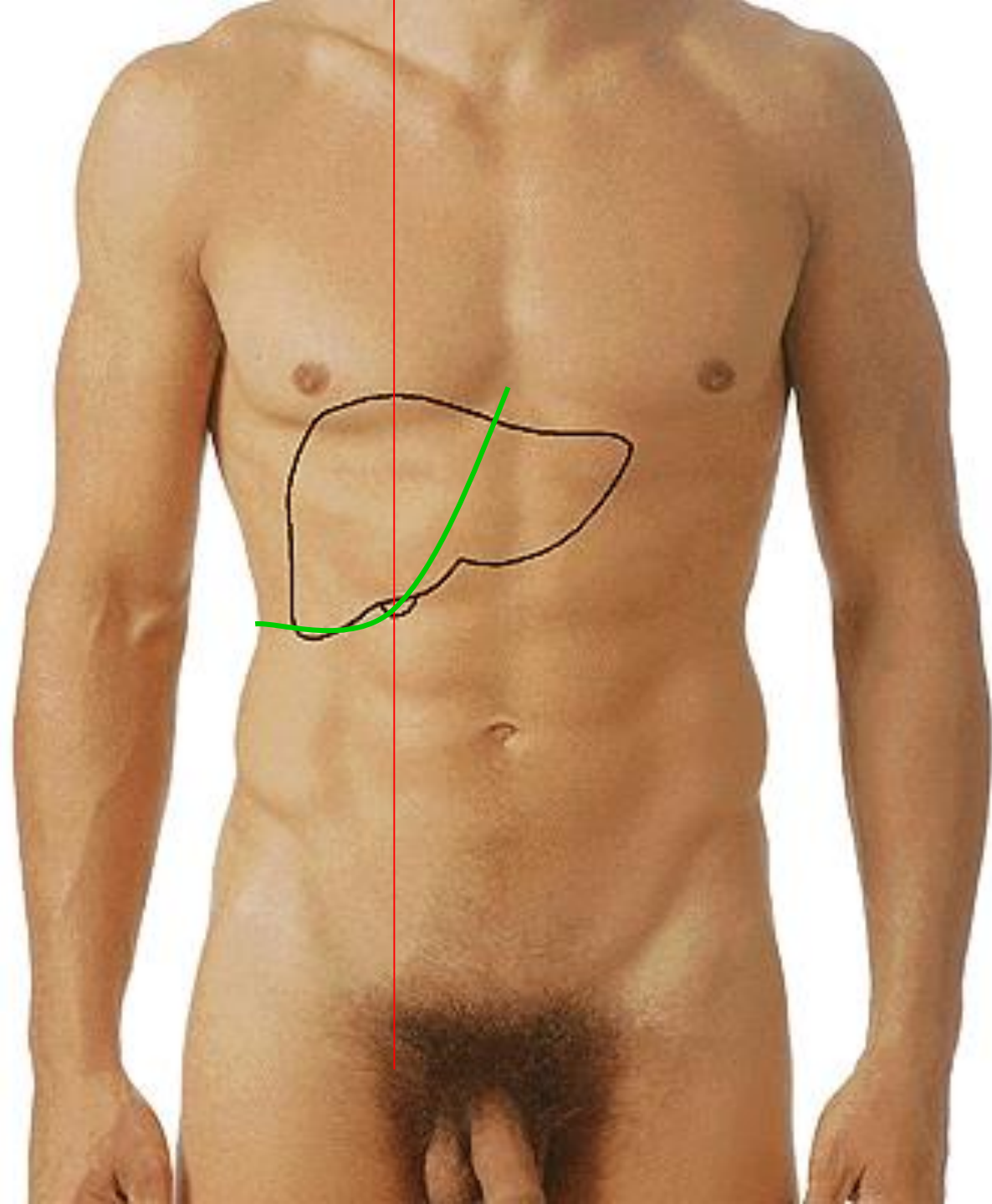
Papilla duodeni major (Vater)

Vesica biliaris (fellea)

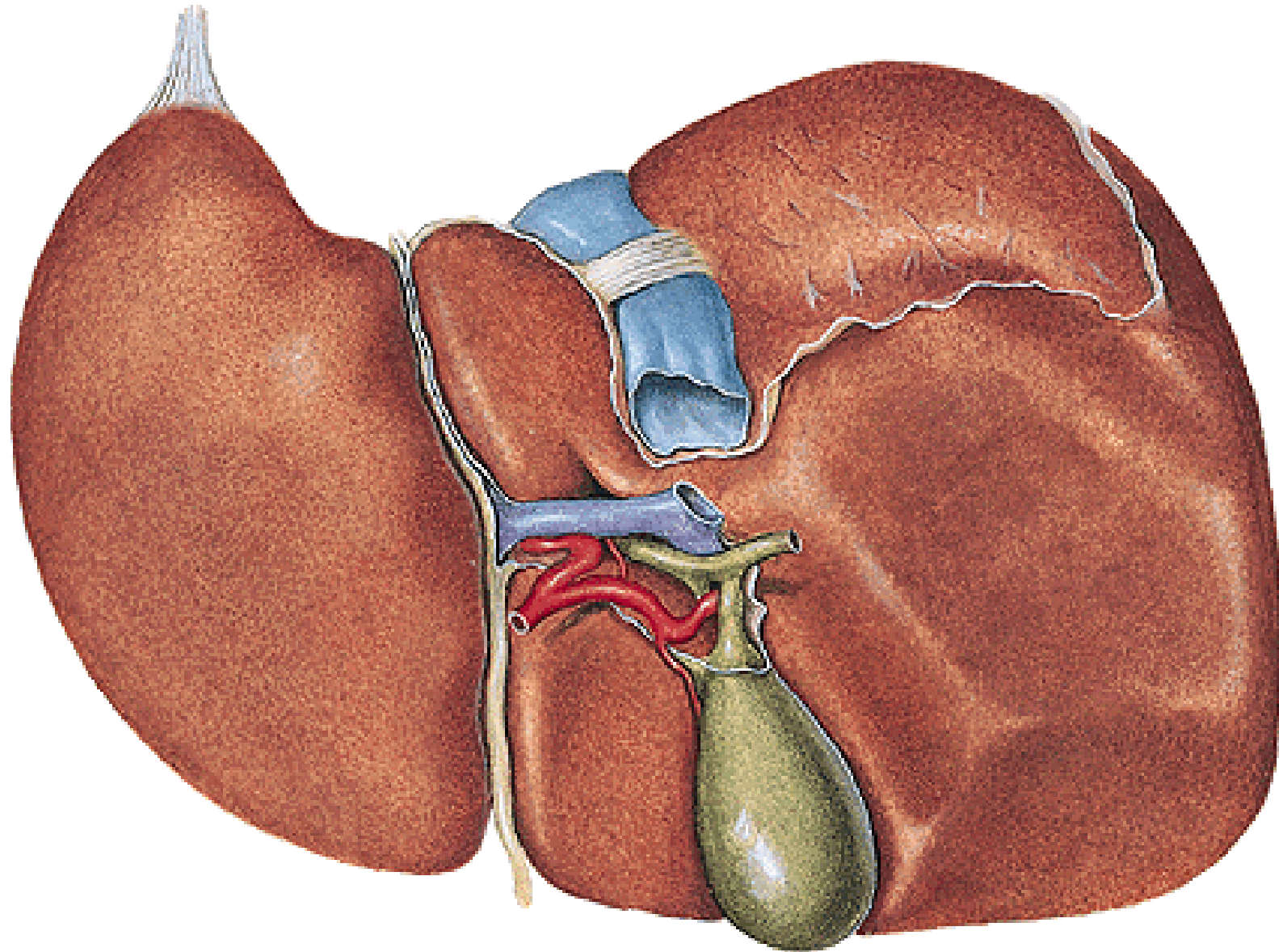
- fundus, corpus, collum

- plica spiralis





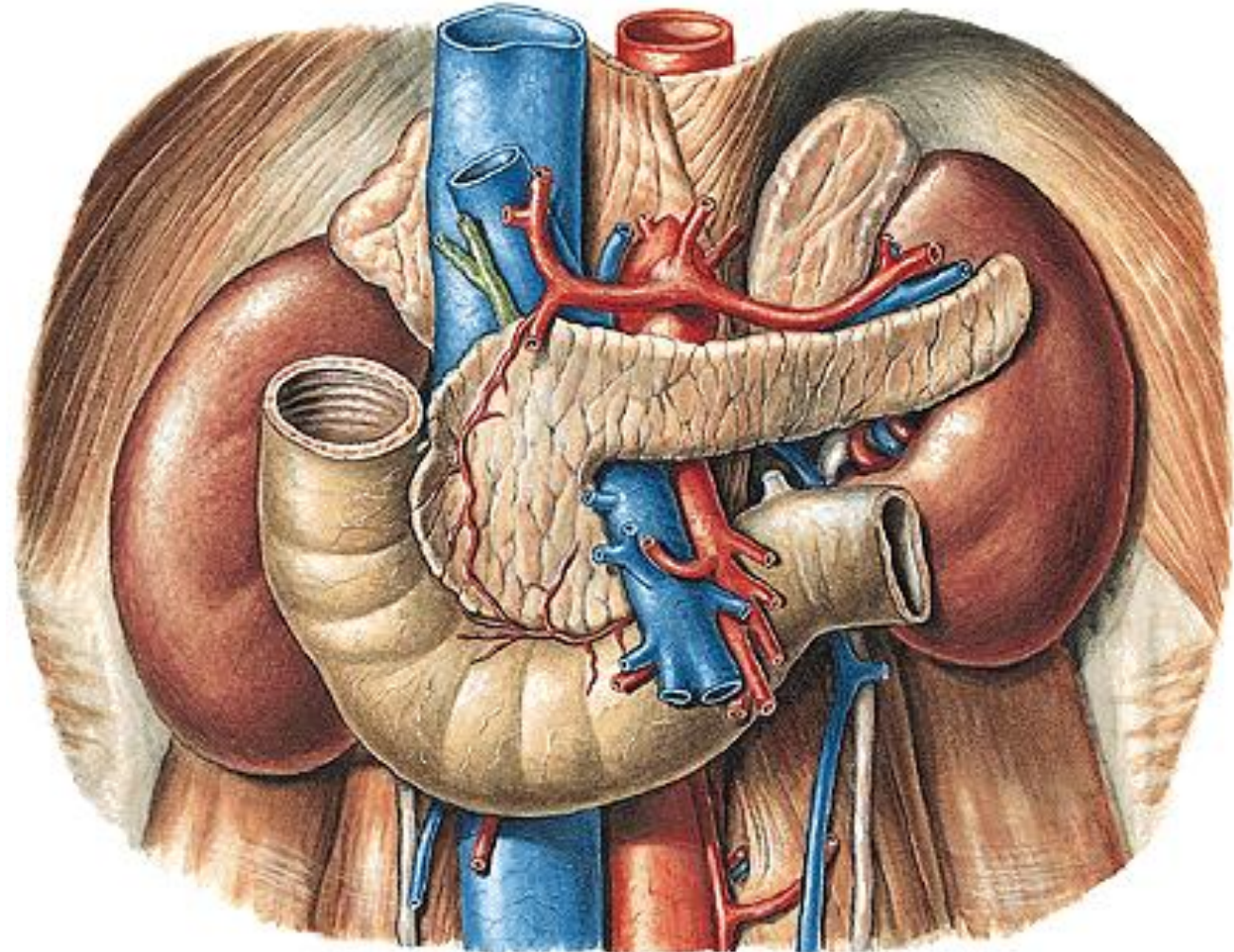
Impressio renalis. suprarenalis, duodeni, colica
Impressio oesophagea, gastrica



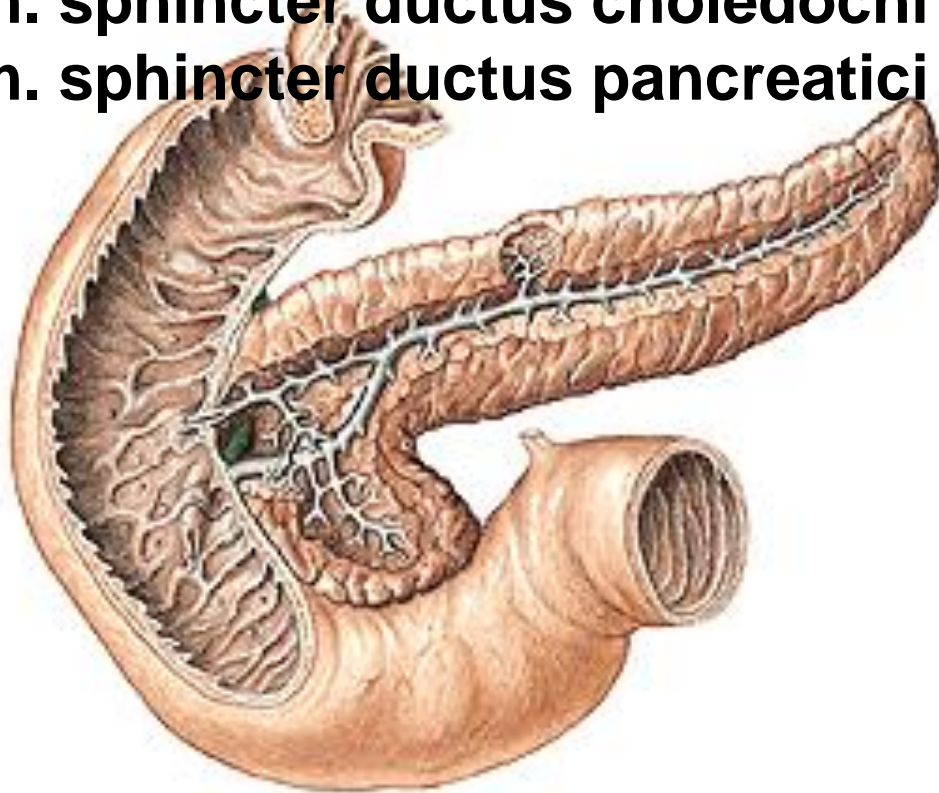
PANCREAS

caput, corpus, cauda
incisura pancreatis
processus uncinatus
facies anterior
facies posterior
margo superior
margo inferior

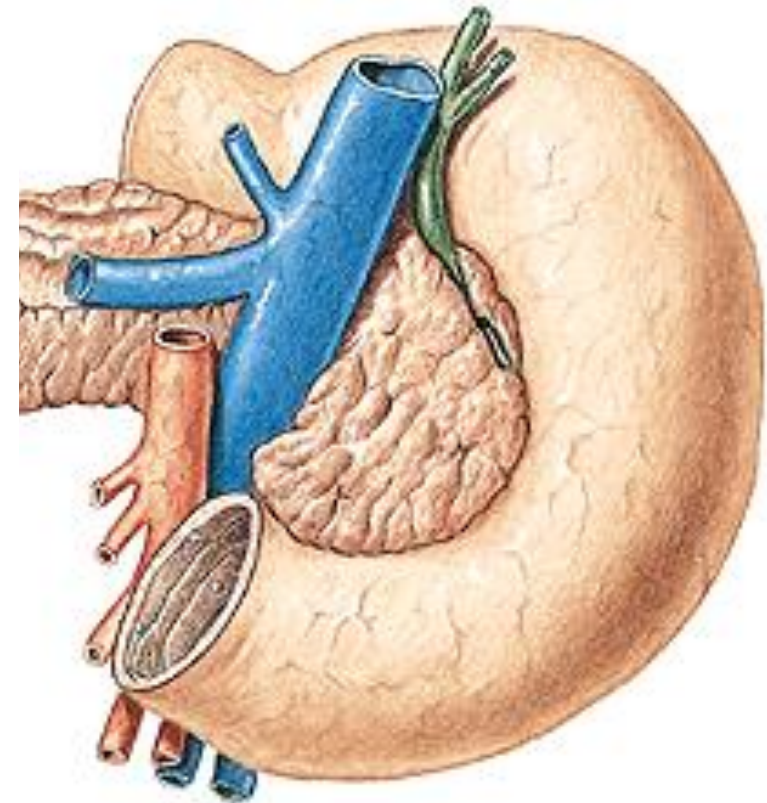
membrana retropancreatica (Treitz)
tuber omentale



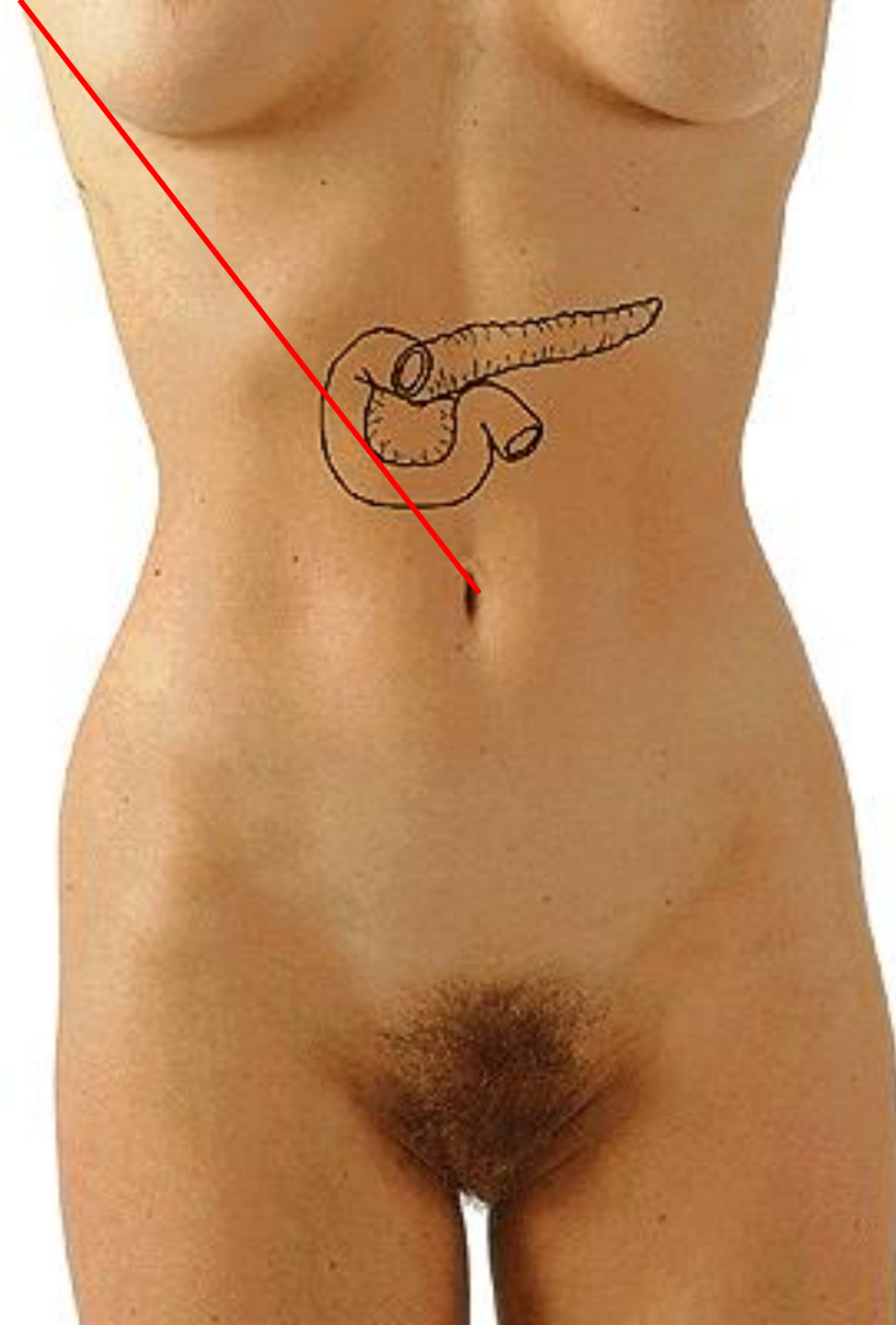
Exocrine pancreas:
capsula pancreatis
succus pancreaticus
ductus pancreaticus
ductus pancreaticus accessorius
m. sphincter ampullae hepatopancreatice
m. sphincter ductus choledochi
m. sphincter ductus pancreatici



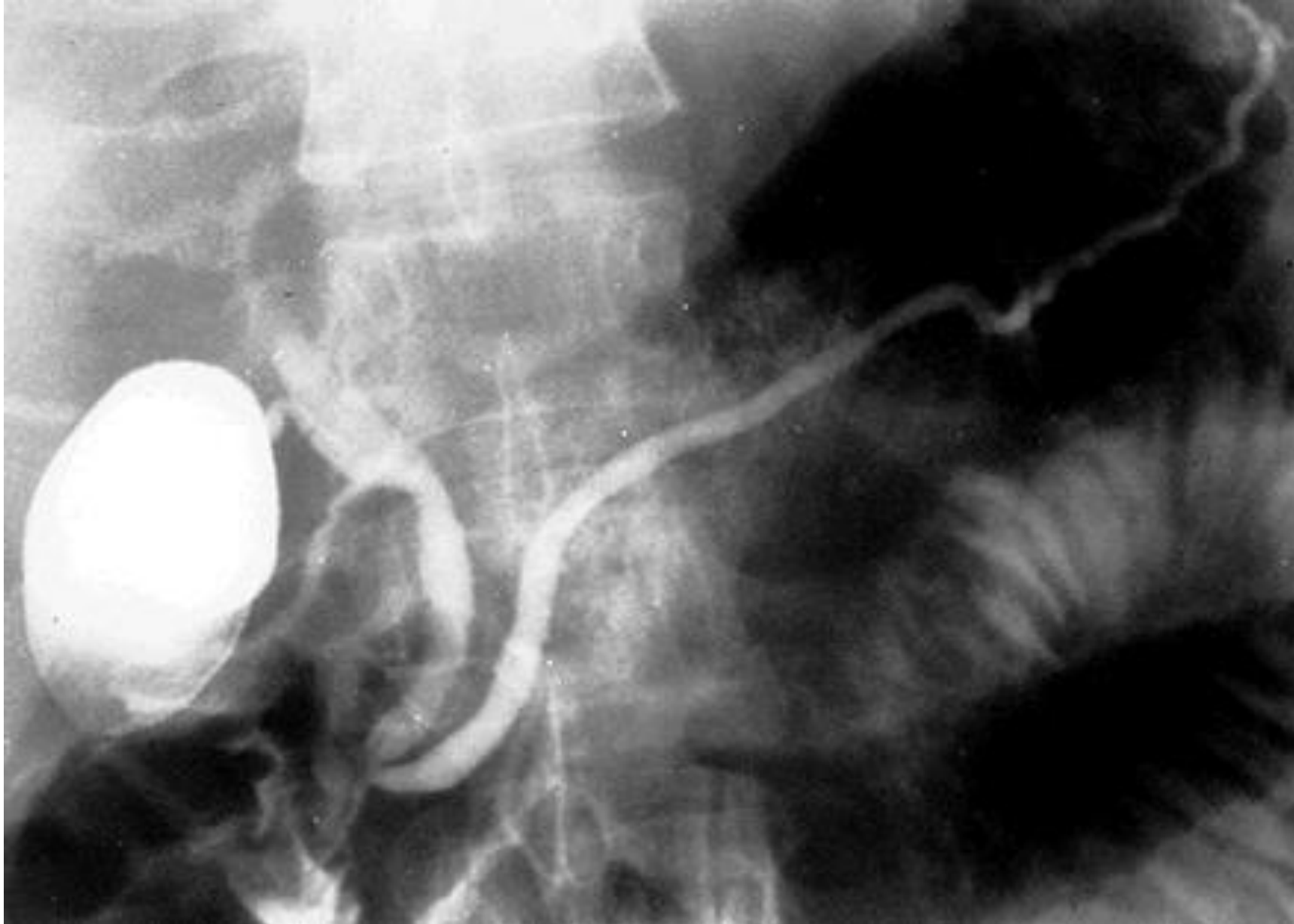
Endocrine pancreas:
islets of Langerhans
insulin, glucagon



**Umbilico-axillary line
- point of Desjardin**

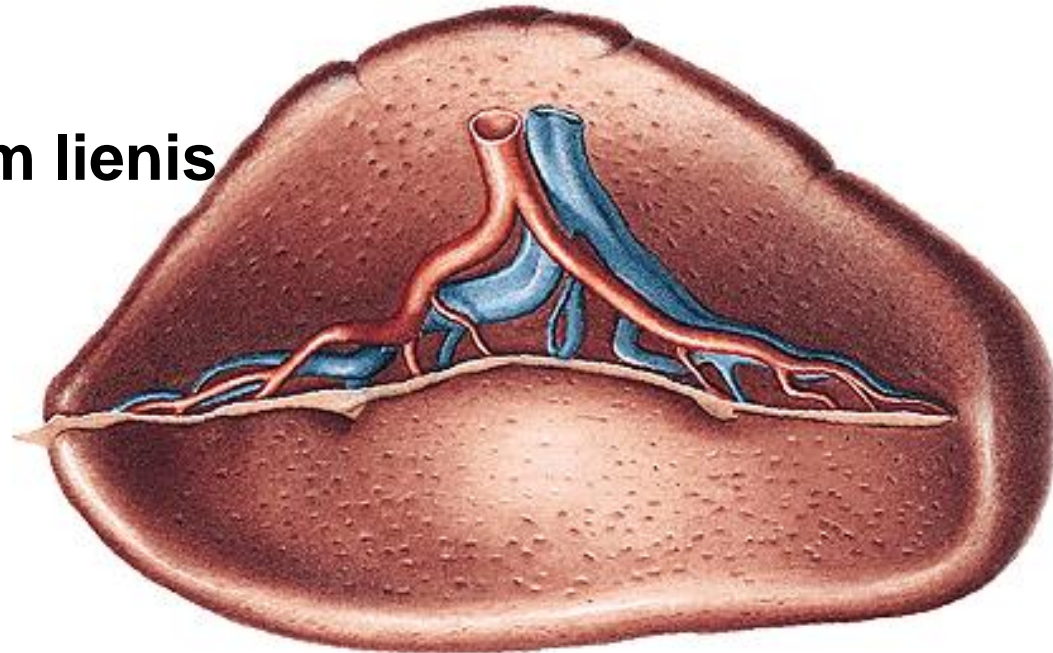


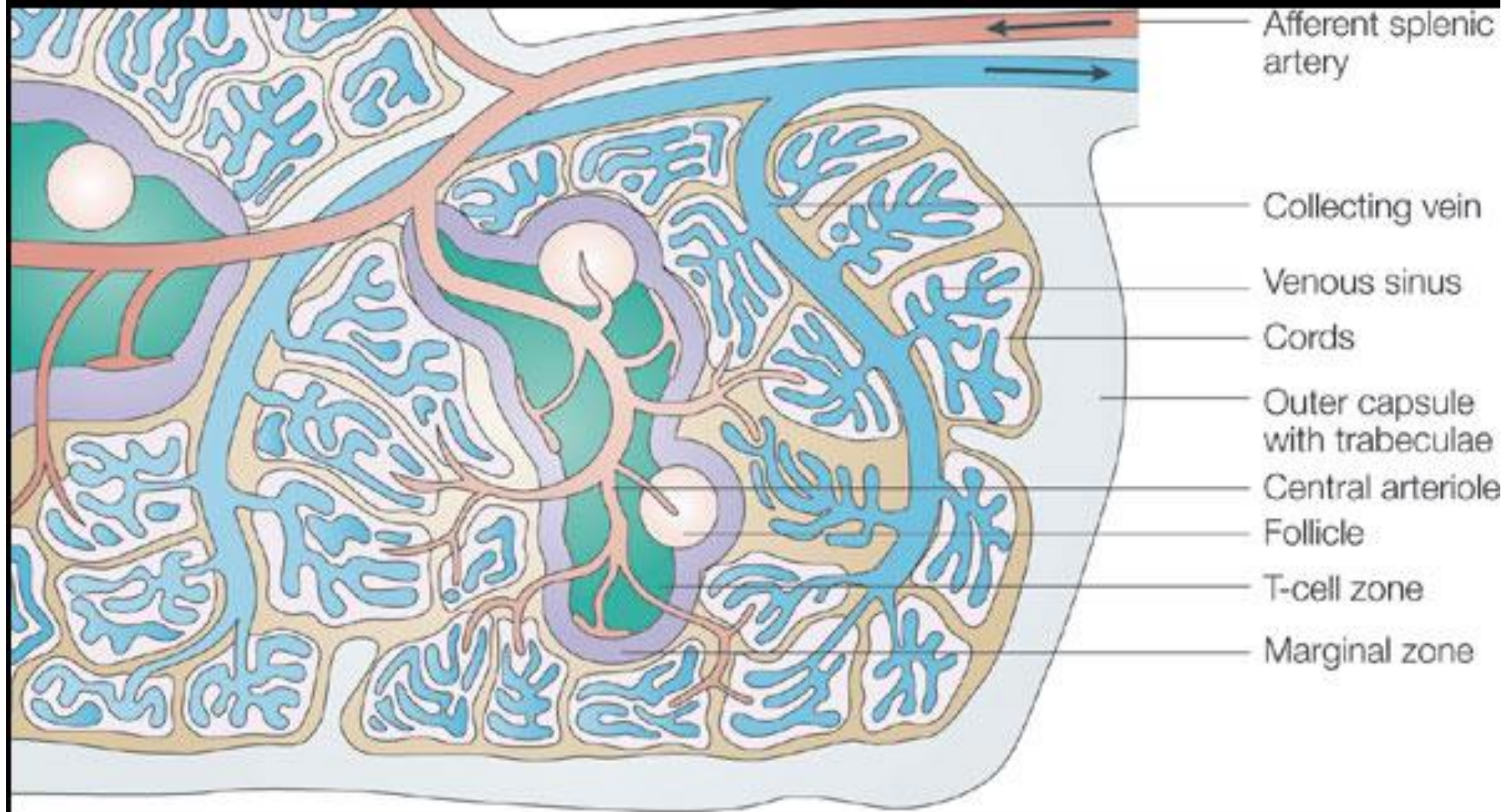
ERCP – endoscopic retrograde cholangiopancreatography



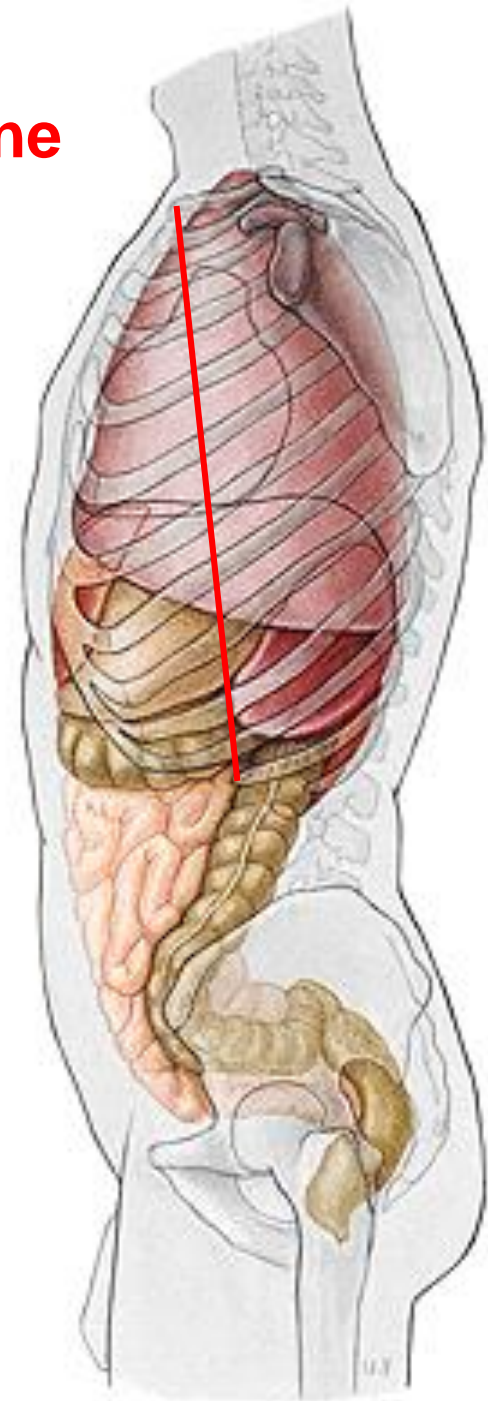
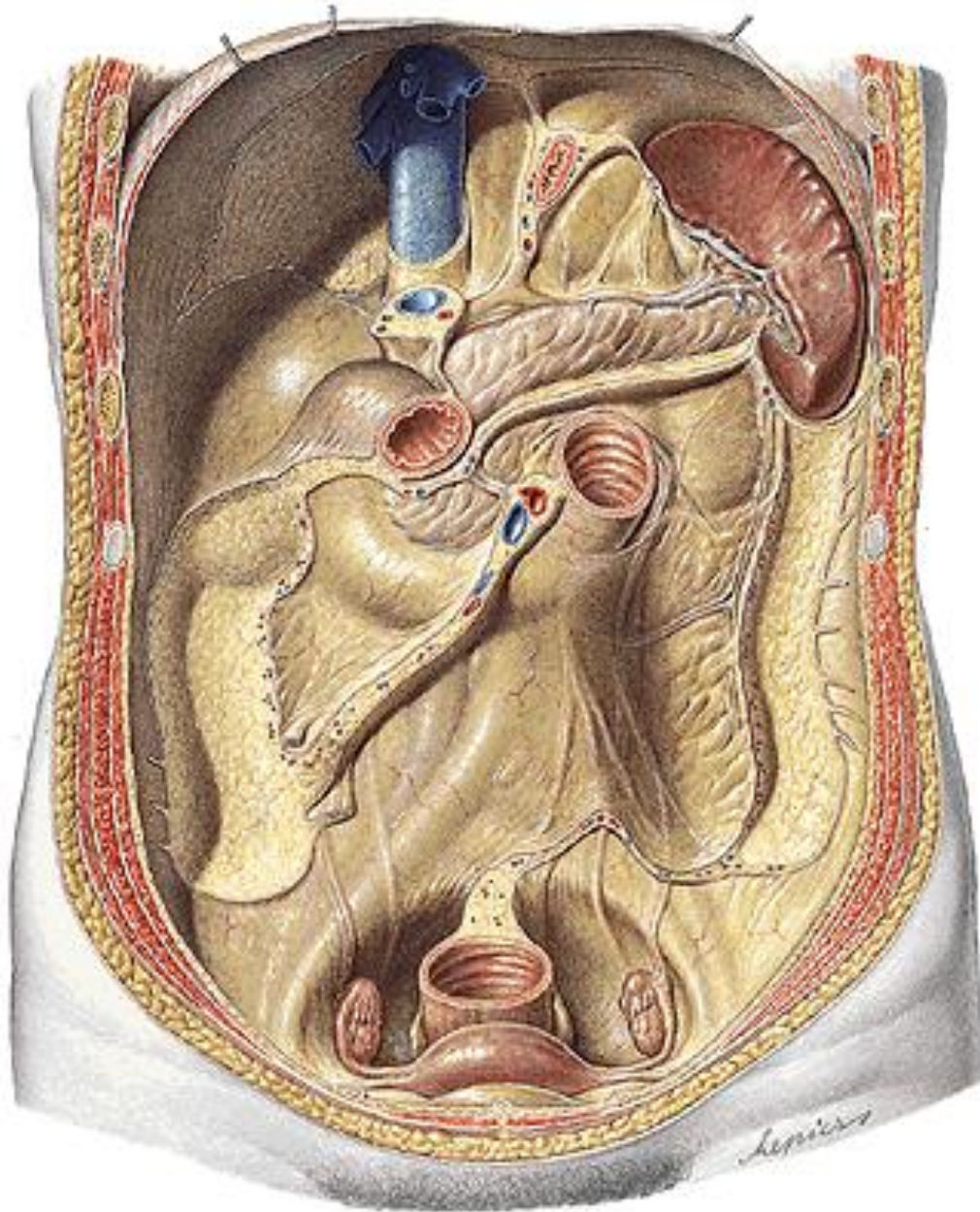
LIEN, SPLEEN

- **extremitas anterior**
- **extremitas posterior**
- **margo superior – crenae lienis**
- **margo inferior**
- **facies diaphragmatica**
- **facies visceralis – hilum lienis**
- **capsula lienis**
- **pulpa rubra**
- **pulpa alba**





Costoarticular line



CAVITAS ABDOMINALIS

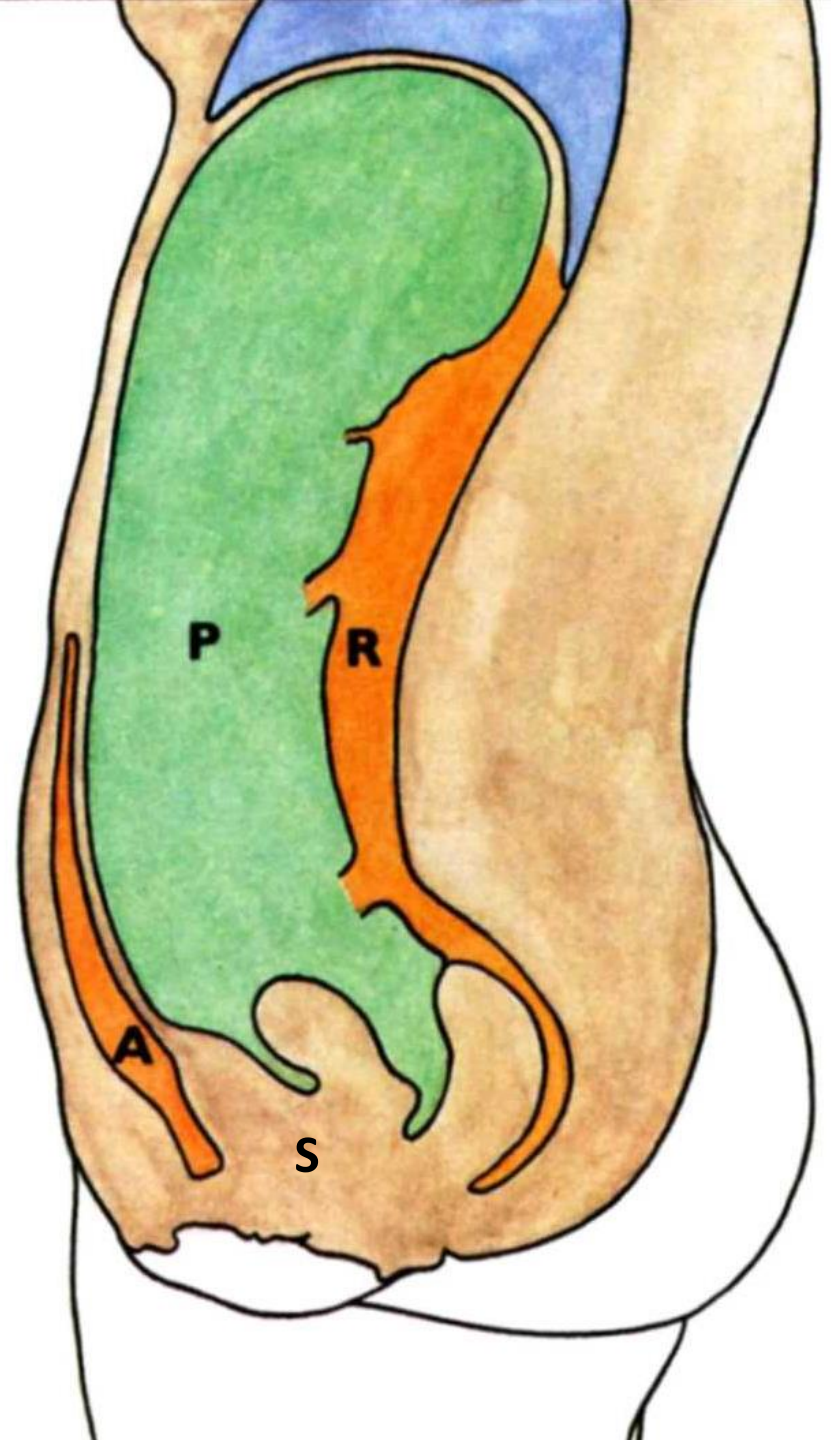
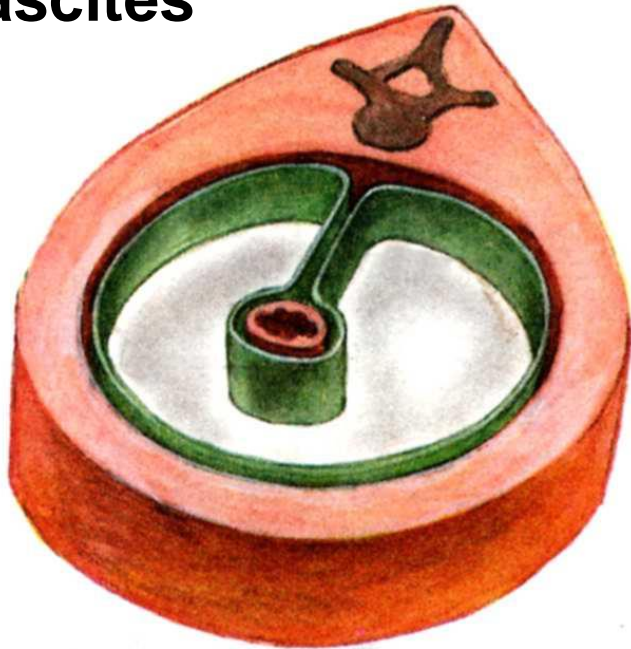
P – cavitas peritonealis

A – spatium preperitoneale

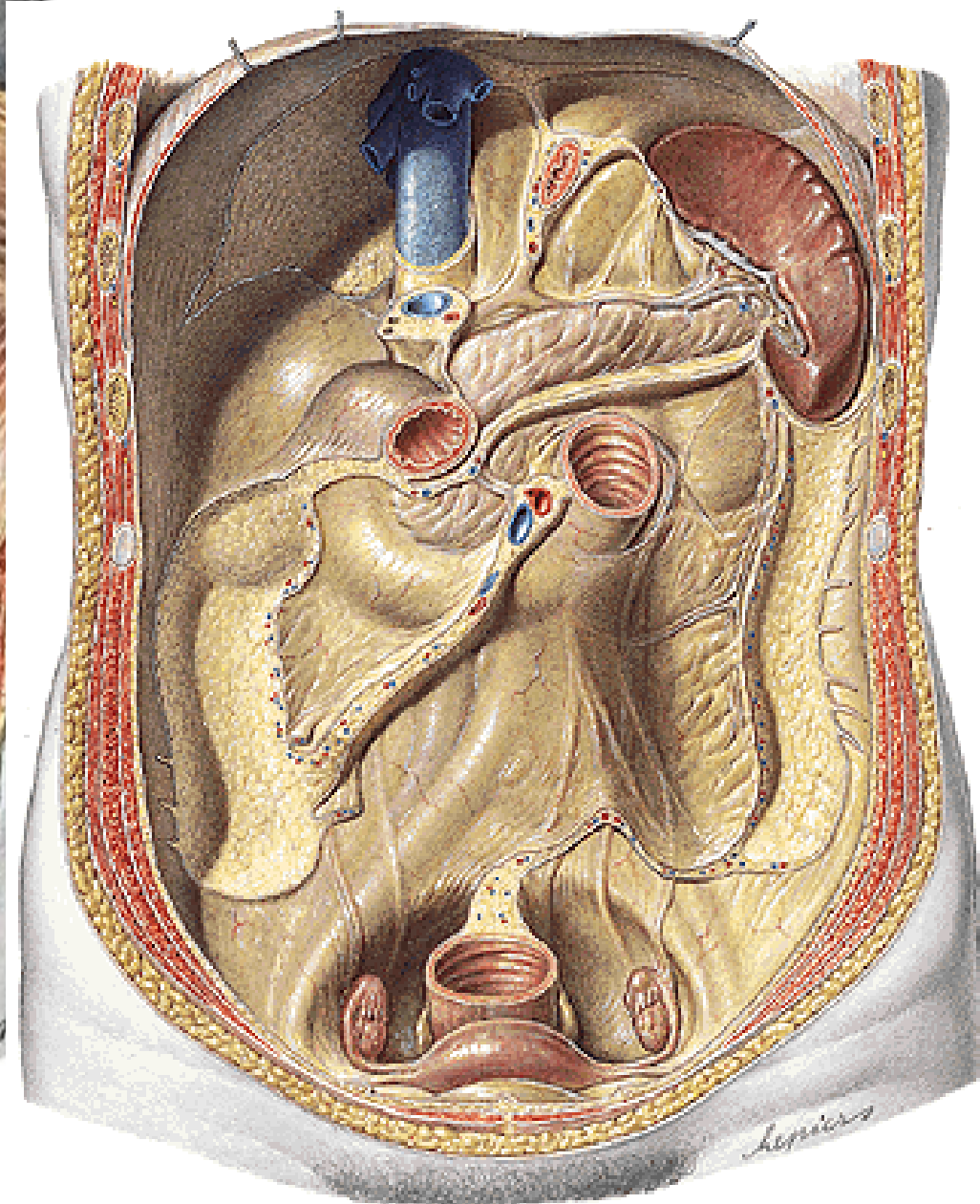
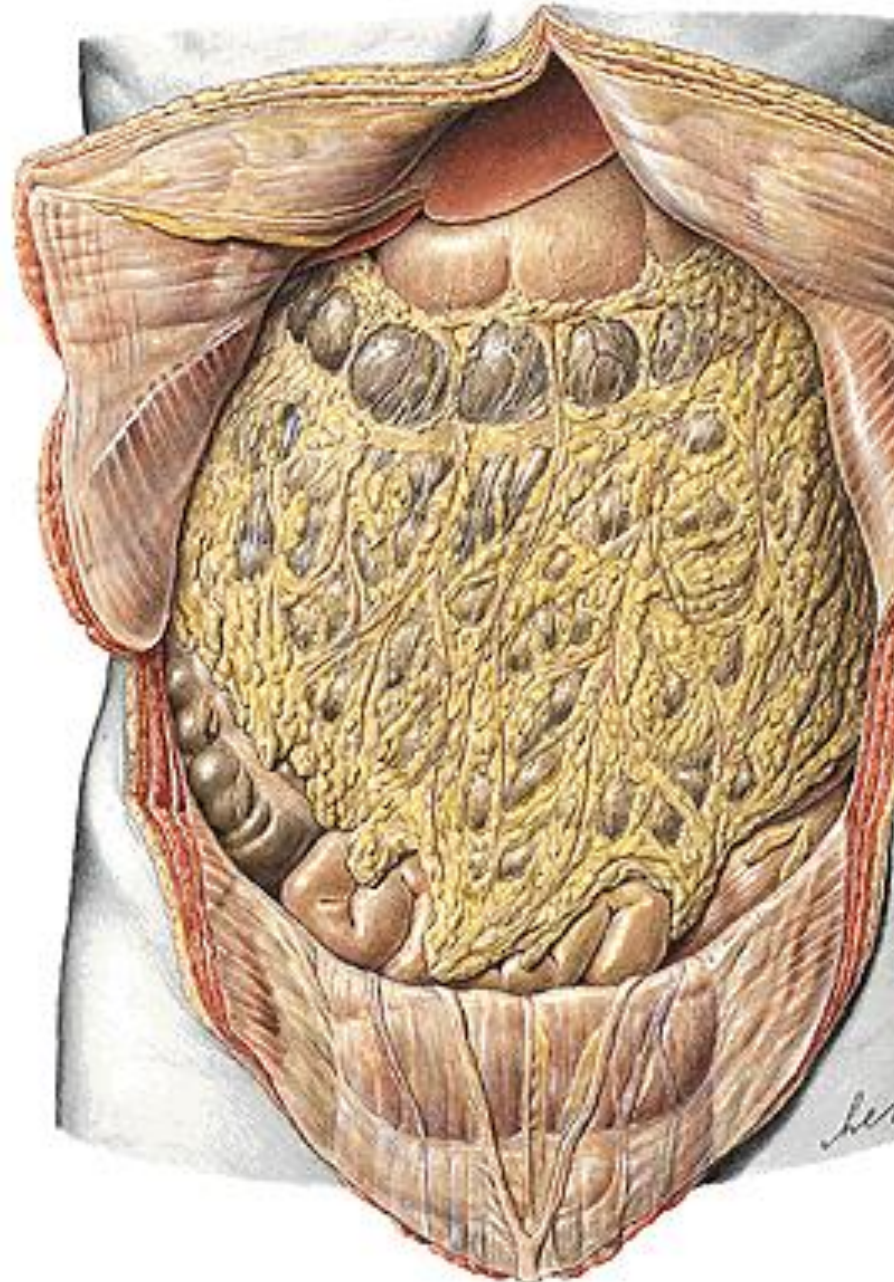
R – spatium retroperitoneale

S – spatium subperitoneale
(infraperitoneale)

ascites

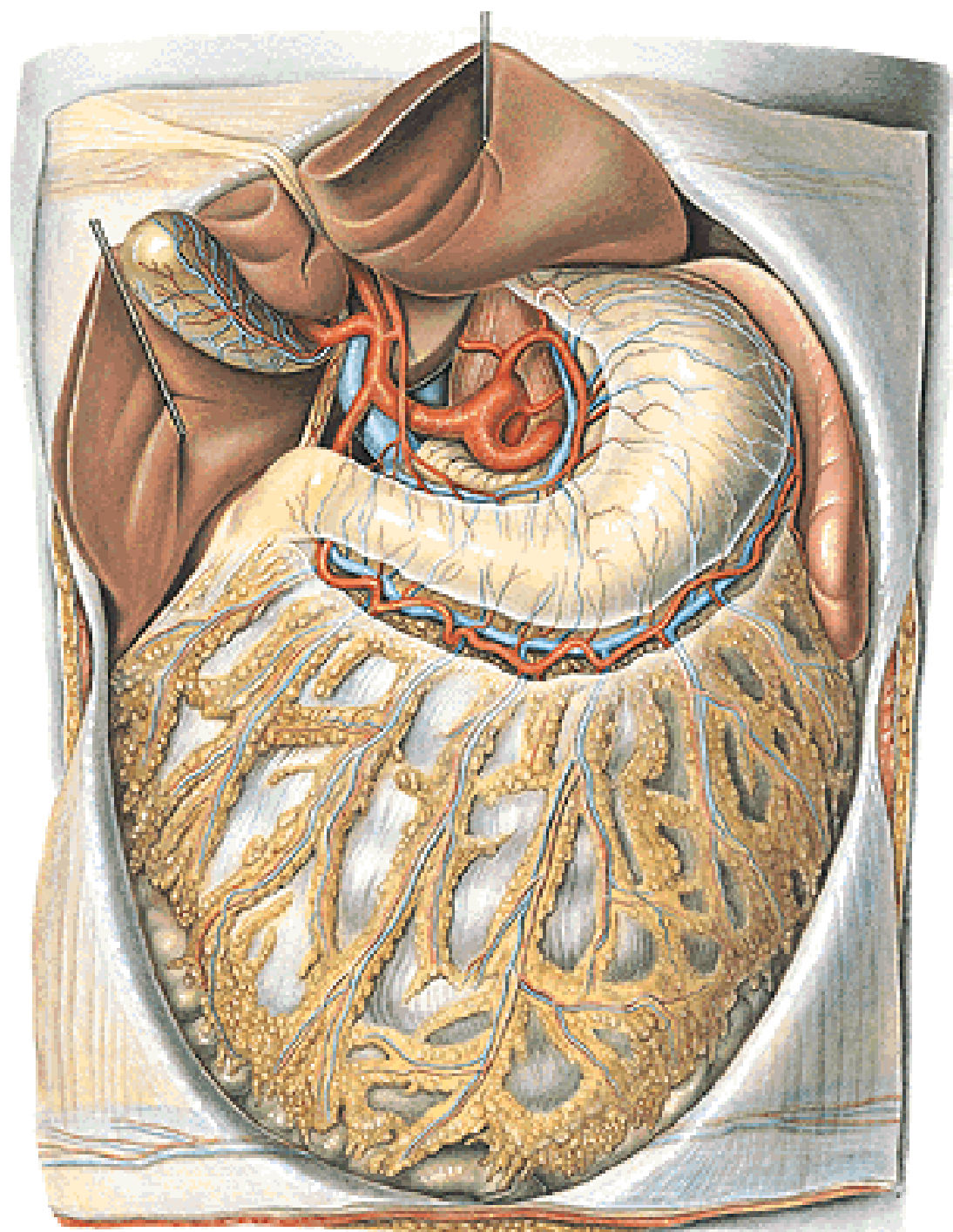


Cavitas peritonealis - pars supramesocolica, inframesocolica



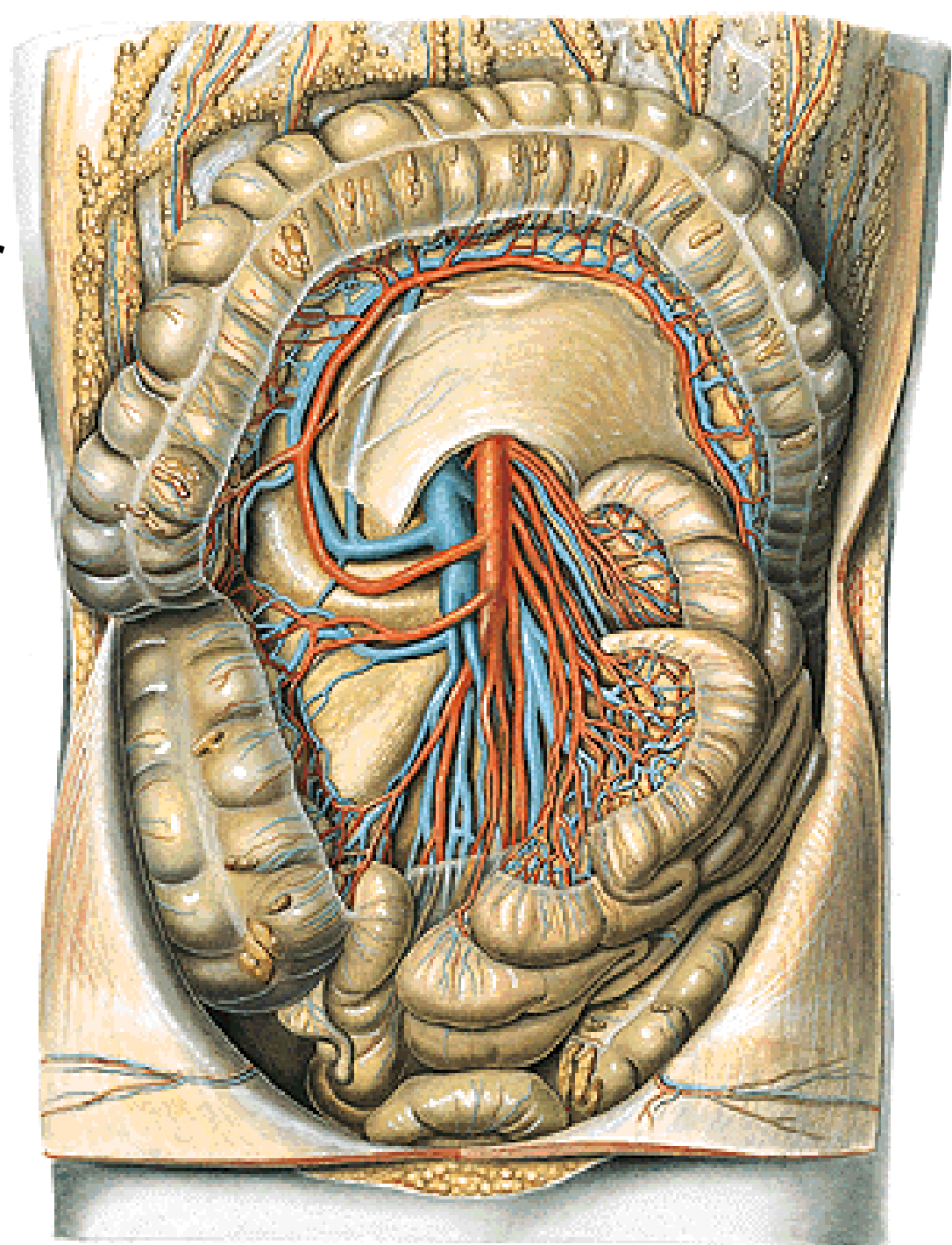
Pars supramesocolica

Truncus coeliacus



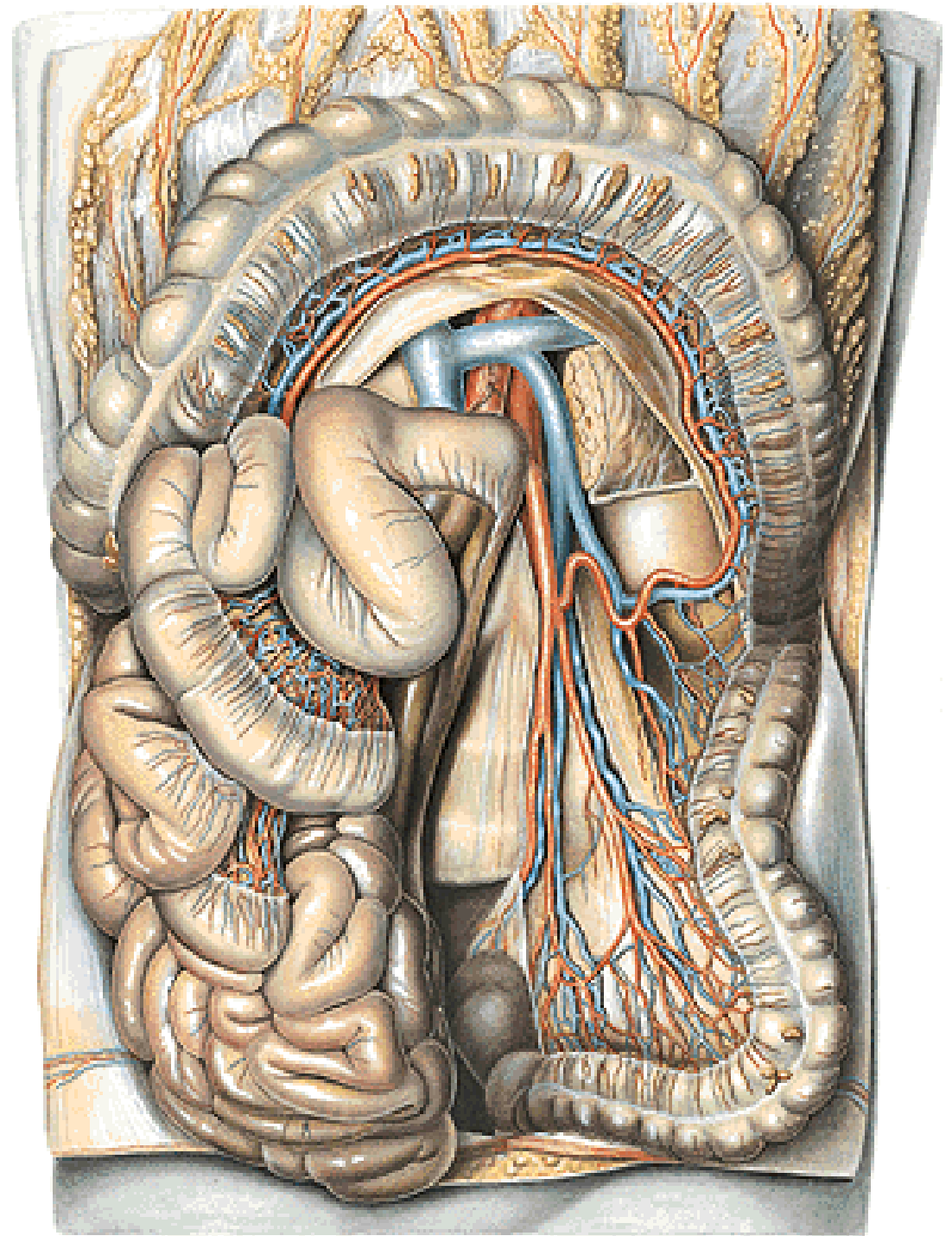
Pars inframesocolica

A. mesenterica superior



Pars inframesocolica

A. mesenterica inferior

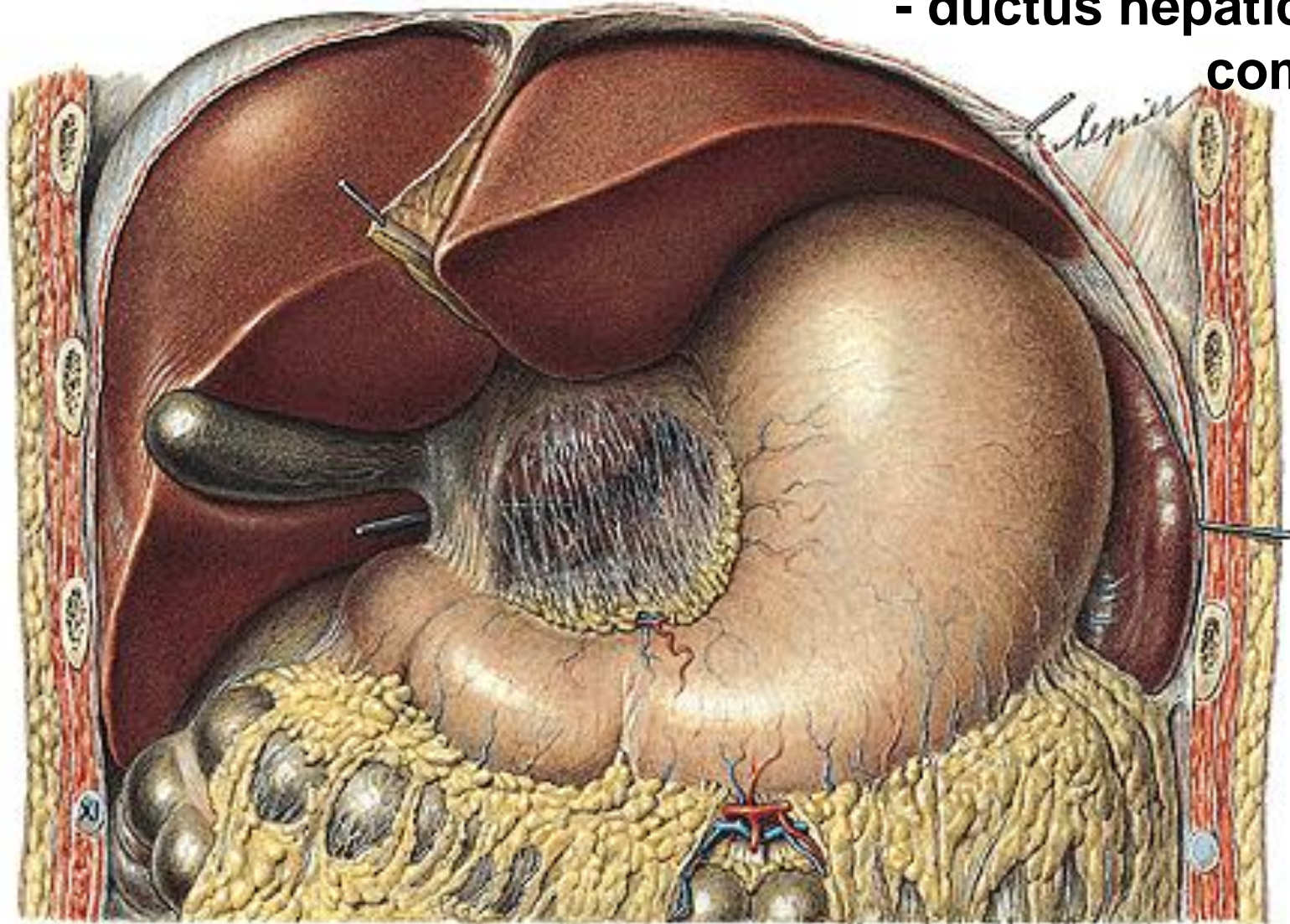


Omentum minus - lig. hepatogastricum

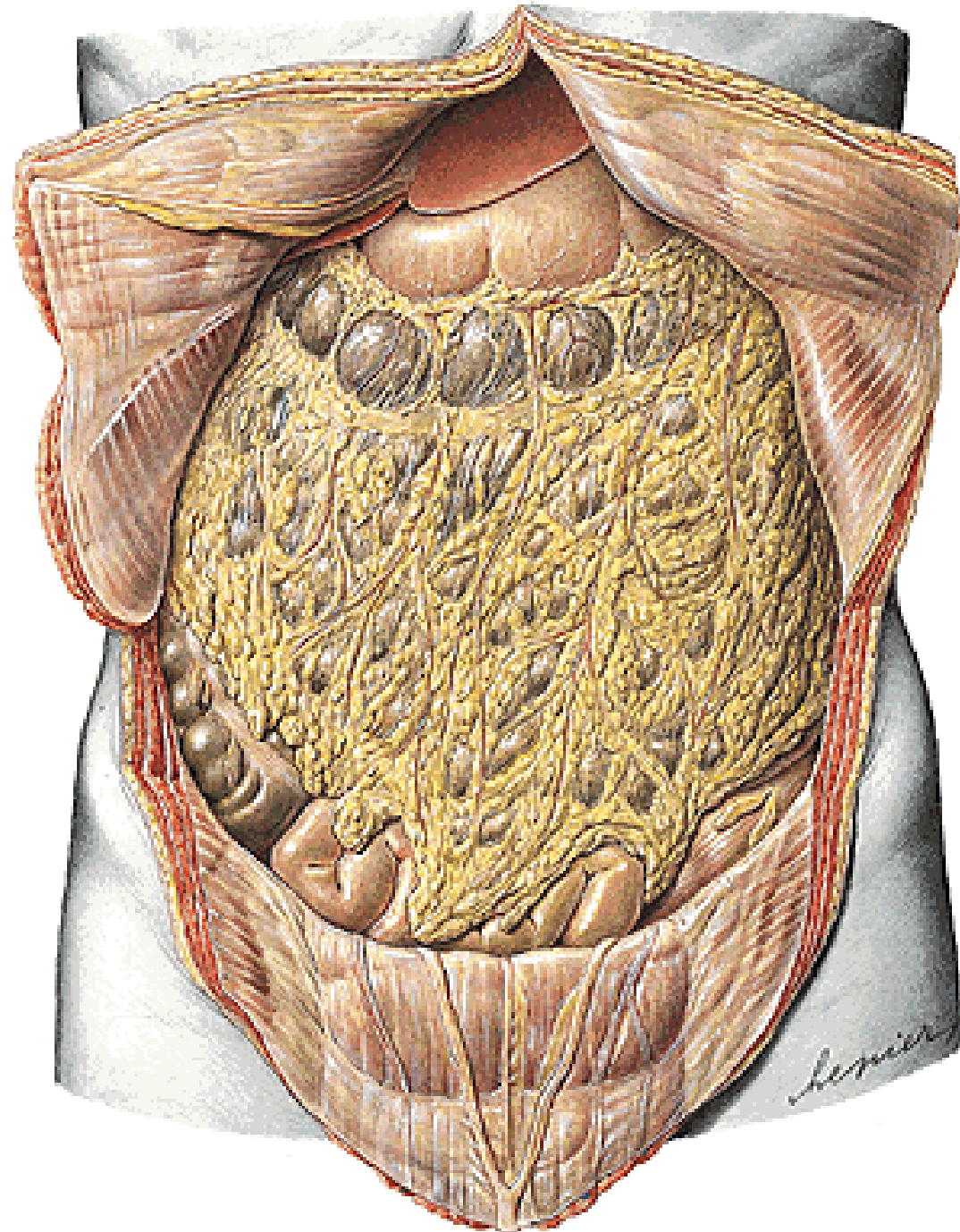
- lig. hepatoduodenale - a. hepatica propria

- v. portae

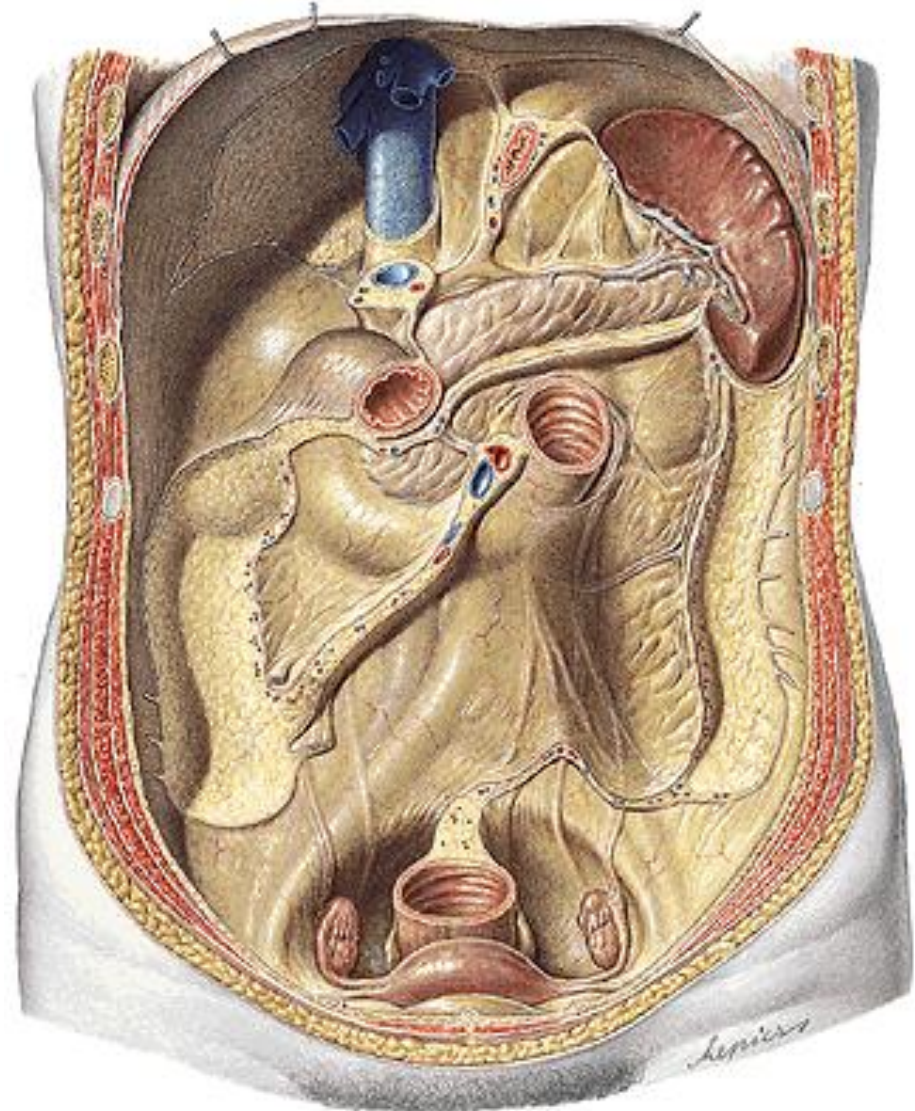
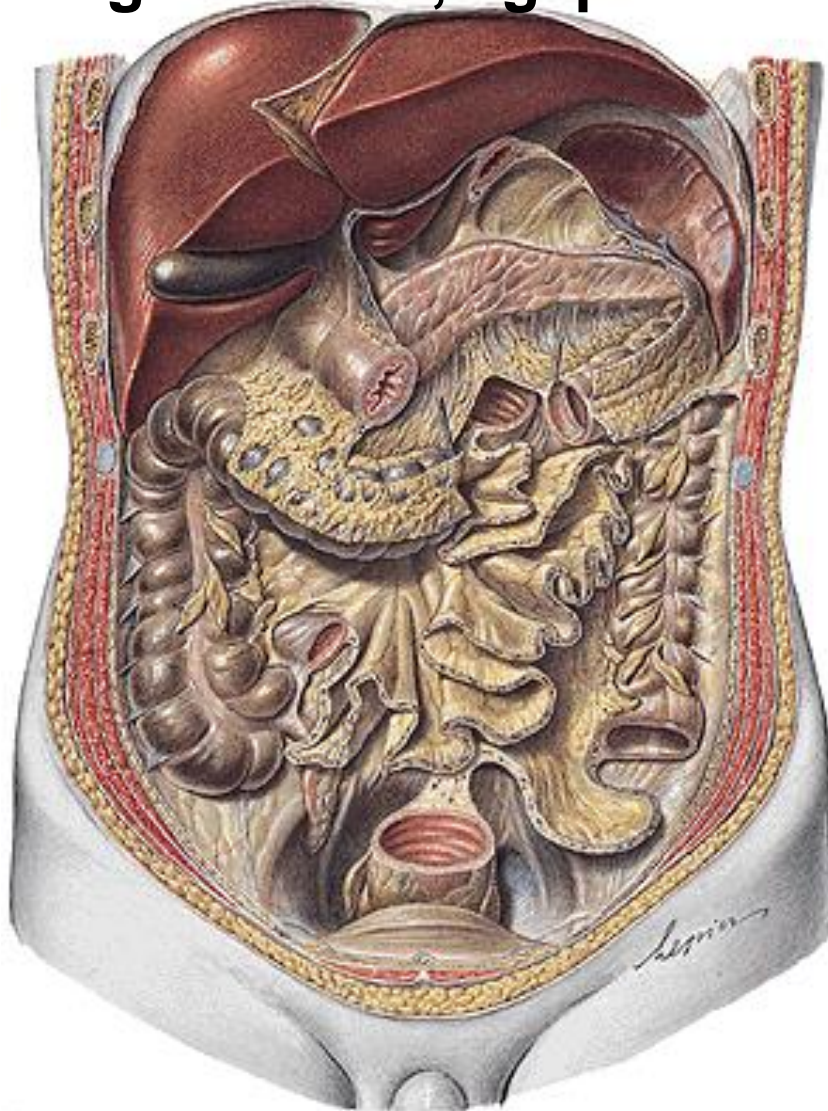
- ductus hepaticus
comm.



Omentum majus
- lig. gastrocolicum

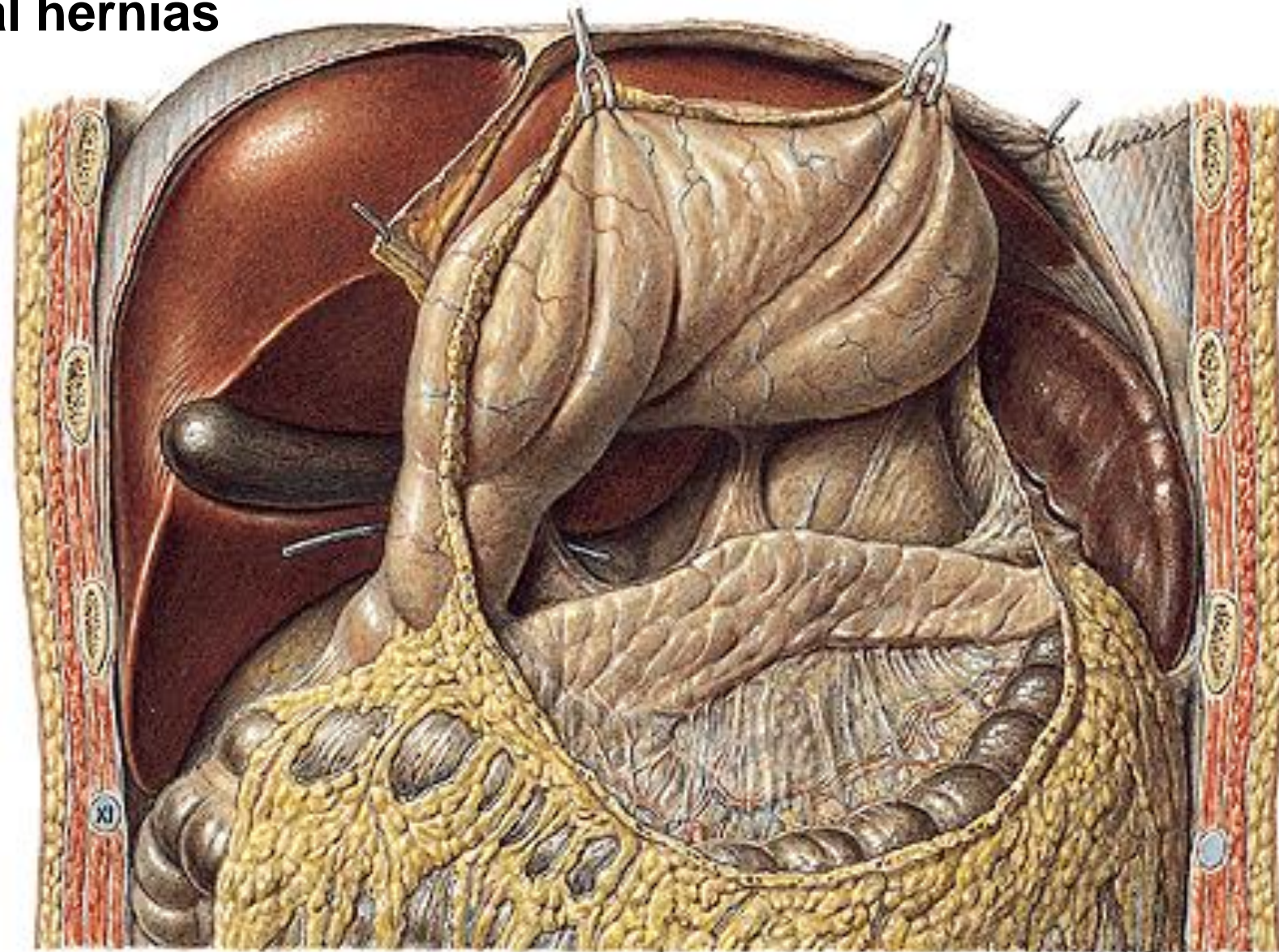


Lig. gastrosplenicum, phrenicosplenicum, splenorenale
Mesenterium – radix mesenterii
Mesocolon transversum, mesoappendix, mesocolon
sigmoideum, lig. phrenicocolicum

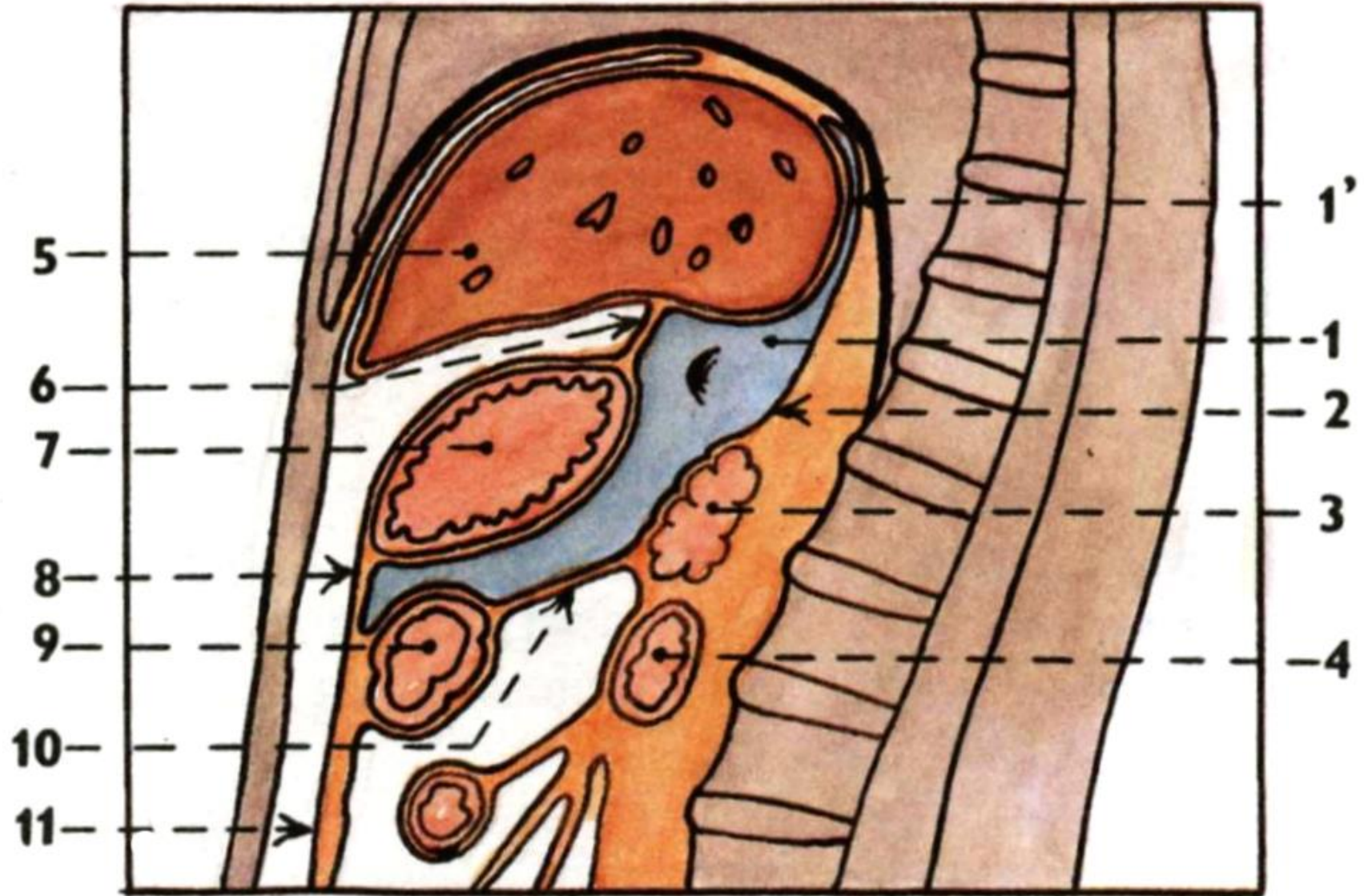


Bursa omentalis

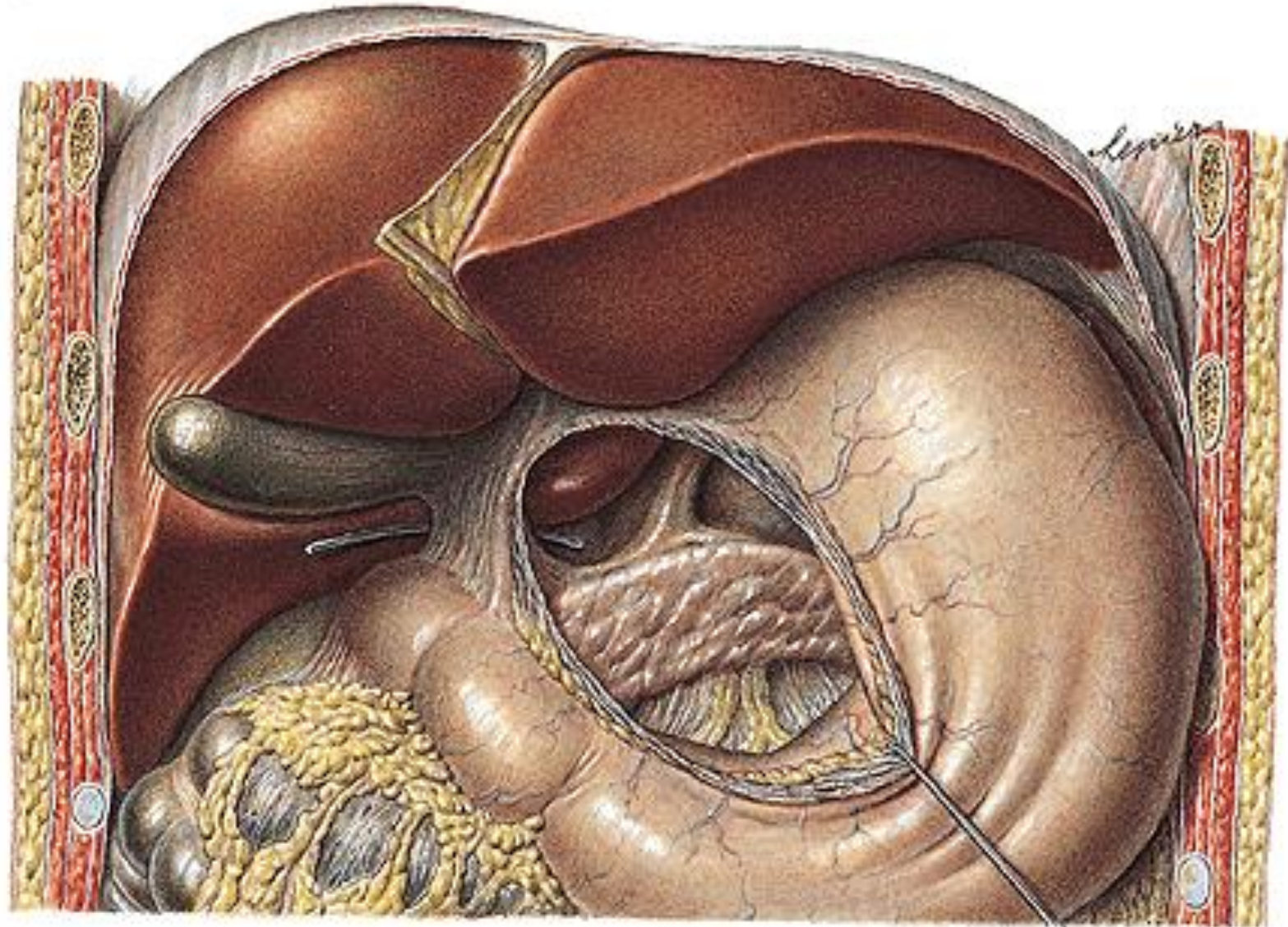
Internal hernias



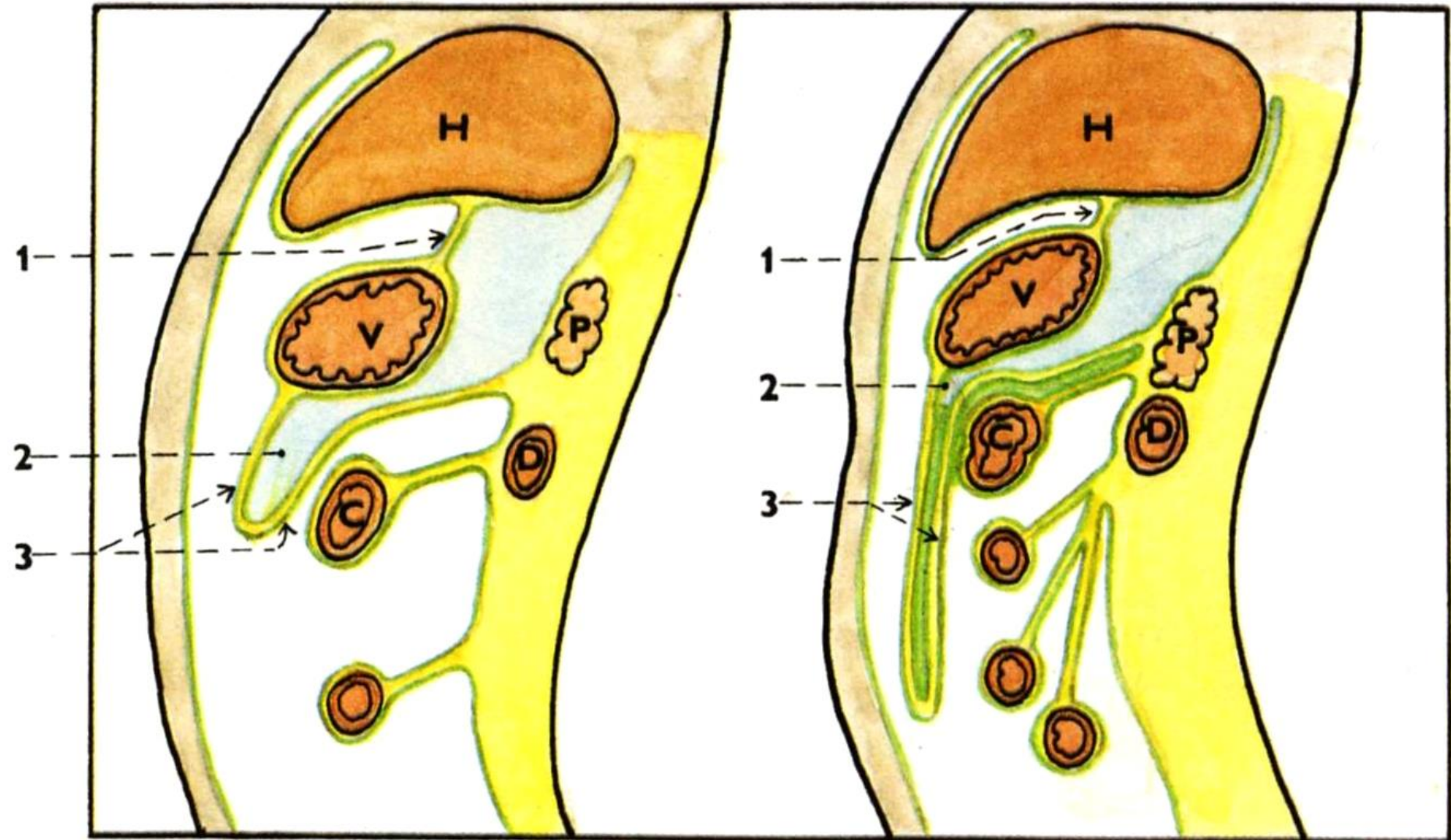
Bursa omentalis



**Foramen epiploicum/omentale (Winslow)
Recessus sup., splenicus, inf.**

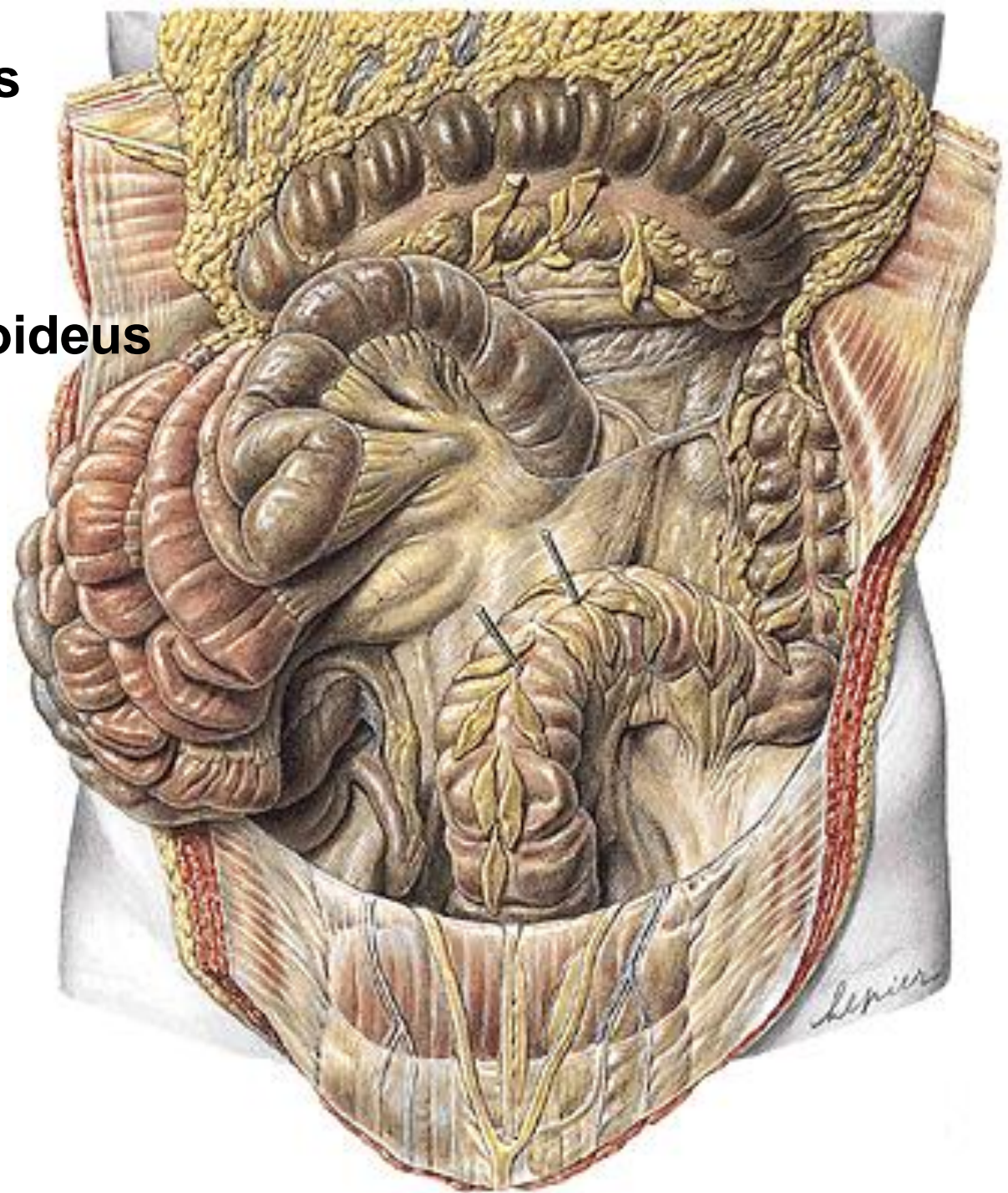


Recessus inferior bursae omentalis



**Recessus duodenalis
sup., inf., sinister,
retroduodenalis**

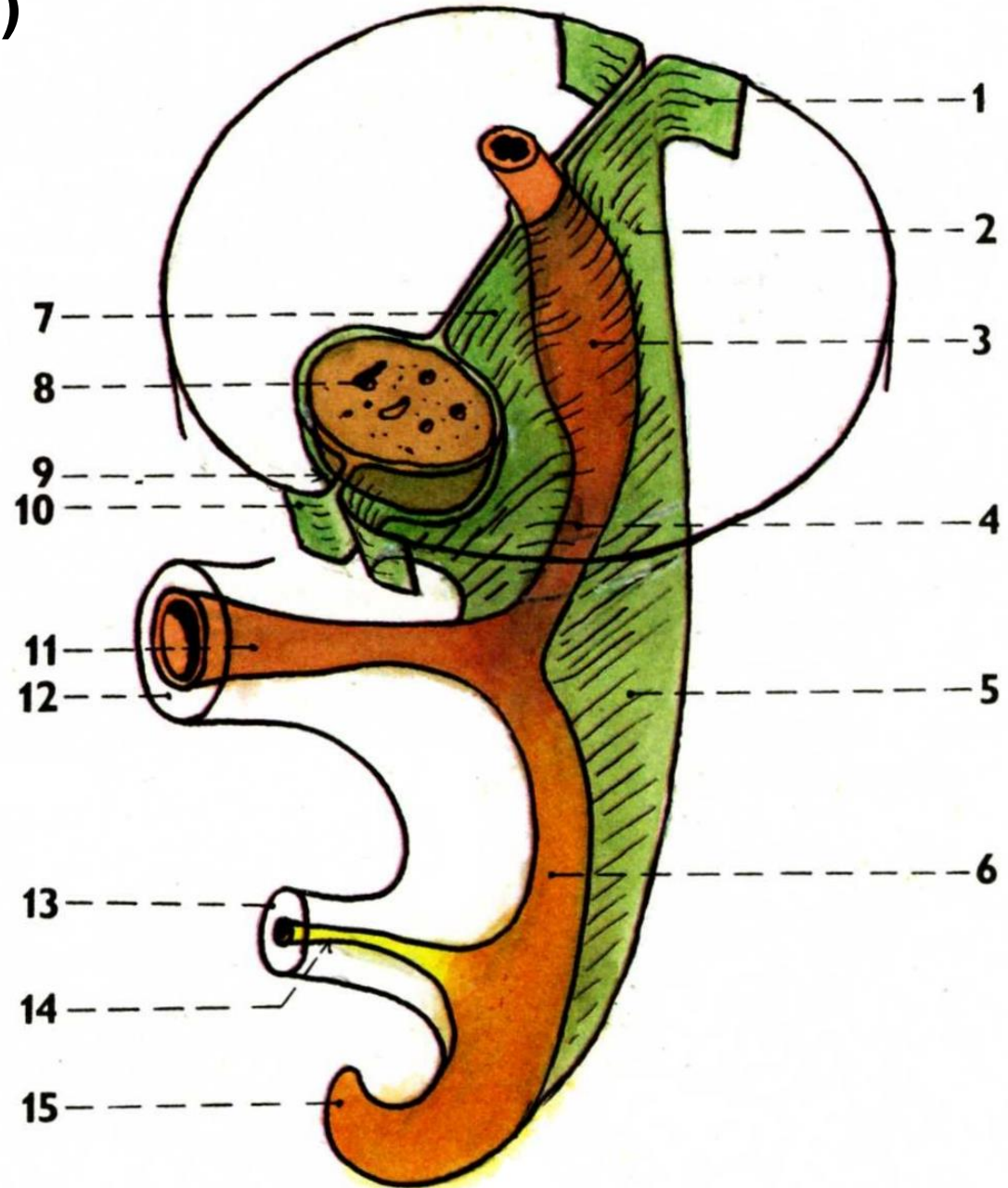
Recessus intersigmoideus



Ductus omphaloentericus Ileal diverticulum (Meckel)

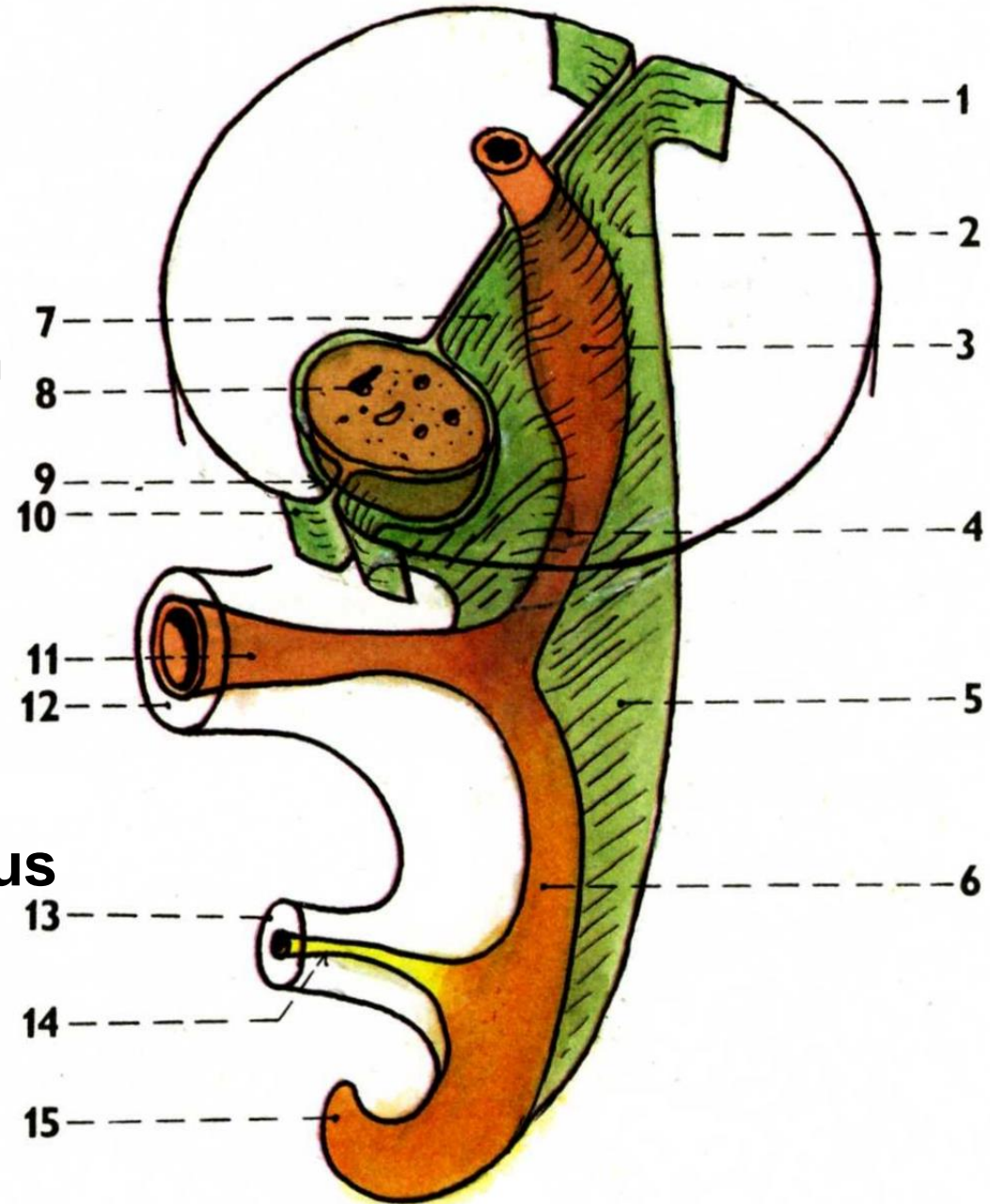


Mesenterium dorsale
Septum transversum
Mesogastrium ventrale



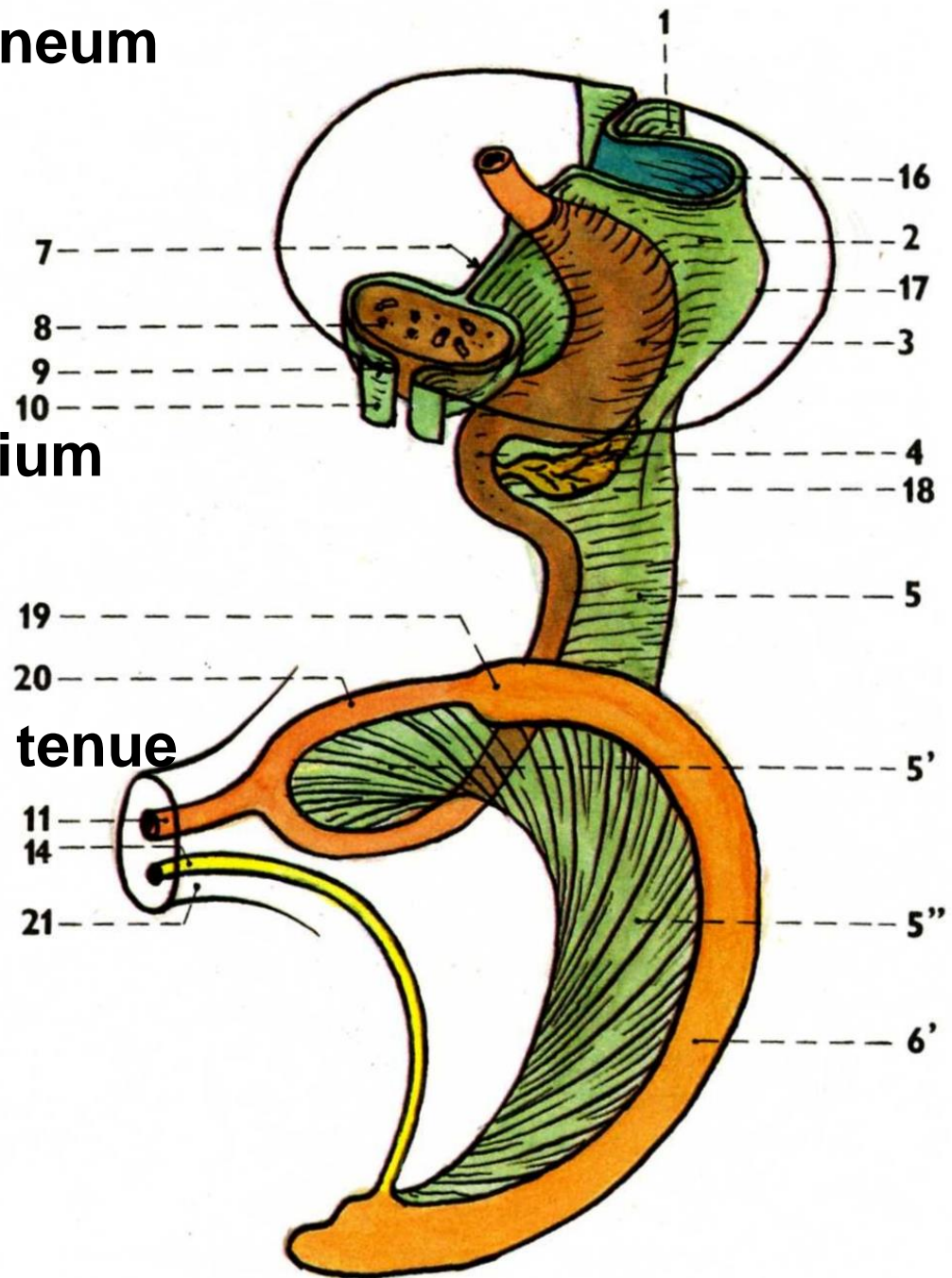
Development of the peritoneum

1. peritoneum parietale
2. mesogastrium dorsale
3. anlage of the stomach
4. anlage of the duodenum
5. mesenterium
6. hindgut
7. mesogastrium ventrale
8. liver
9. mesogastrium ventrale
10. peritoneum parietale
11. ductus omphaloentericus
12. umbilicus
13. connecting stalk
14. allantois
15. hindgut



Development of the peritoneum

- 16.anlage of the bursa omentalis
- 17.spleen in the mesogastrium dorsale
- 18.anlage of the pancreas
- 19.anlage of the caecum
- 20.anlage of the intestinum tenue
- 21.umbilicus



Development of the peritoneum

2'. lig. phrenicolienale

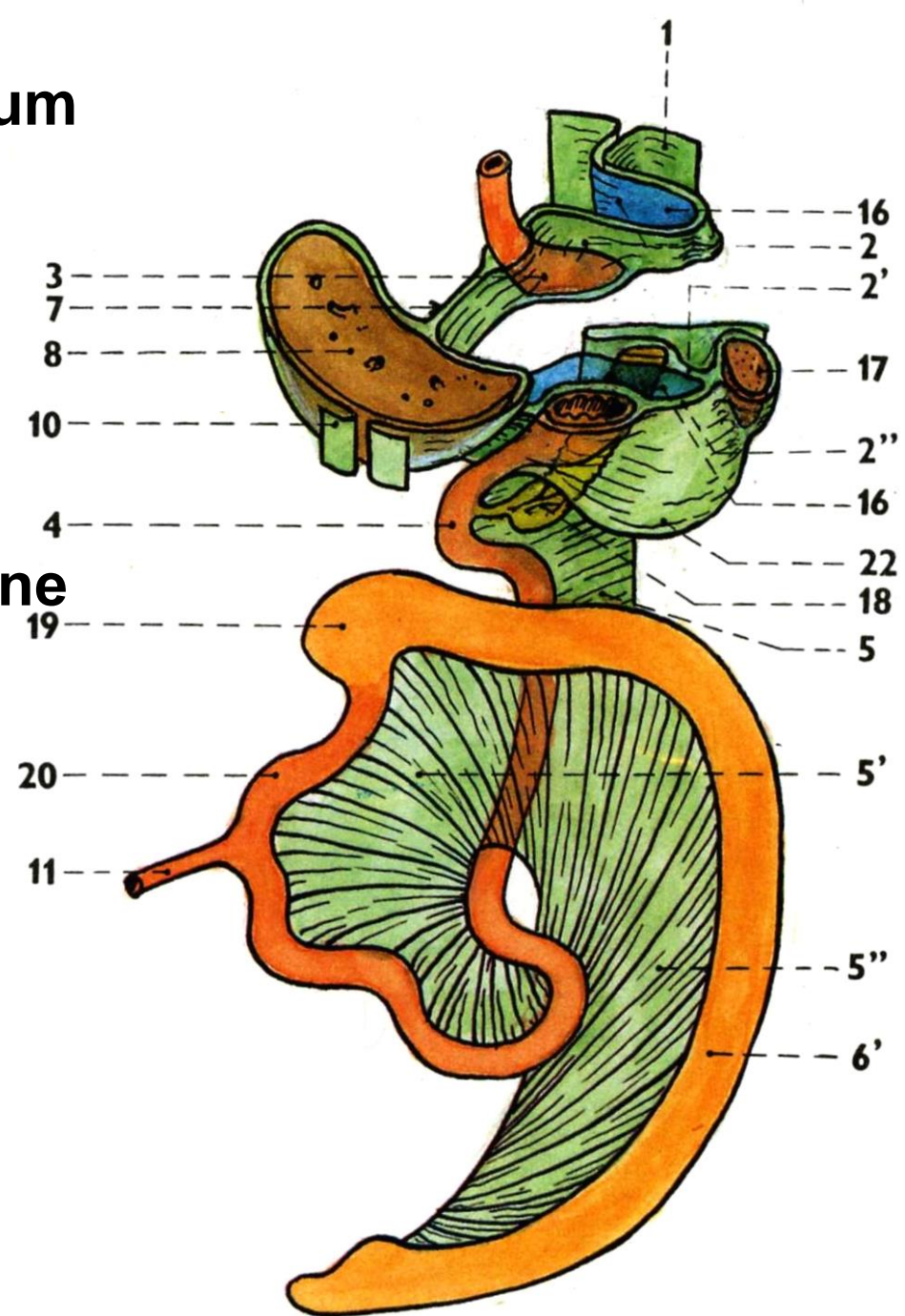
2''. lig. gastrolienale

5'. mesenterium

5''. mesocolon

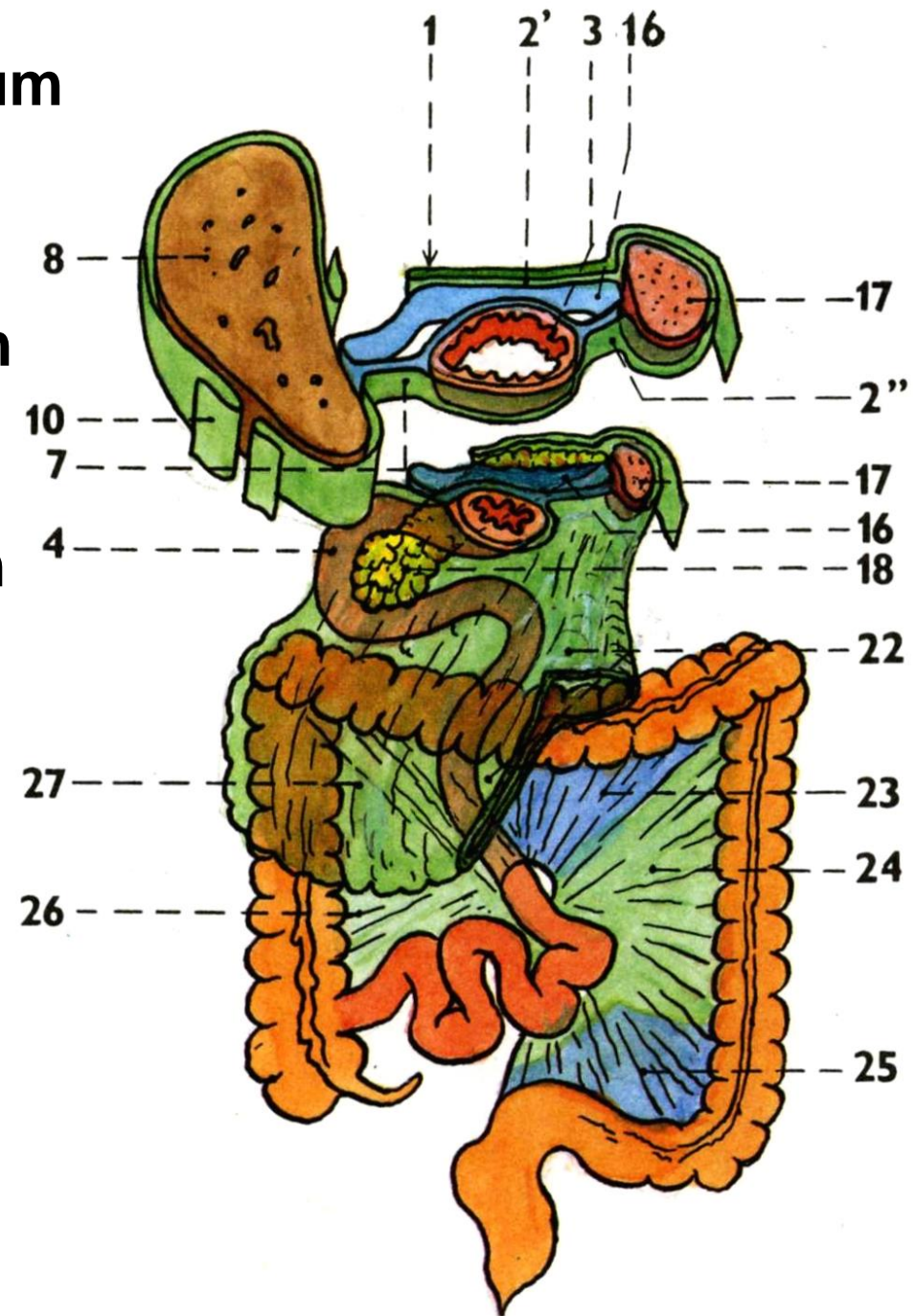
6'. anlage of the large intestine

22. omentum majus



Development of the peritoneum

- 23. mesocolon transversum
- 24. mesentery of the colon descendens
- 25. mesocolon sigmoideum
- 26. mesentery of the colon ascendens
- 27. omentum majus



Illustrations 34, 43,45,47-49 were copied from:
**Čihák R: Anatomie 2 (Splanchnologia). Avicenum,
zdravotnické nakladatelství, Praha, 1988.**

Remaining illustrations, photographs, and radiographs were
copied from:

**Atlas der Anatomie des Menschen/Sobotta.
Putz,R., und Pabst,R. 20. Auflage. München:
Urban & Schwarzenberg, 1993**