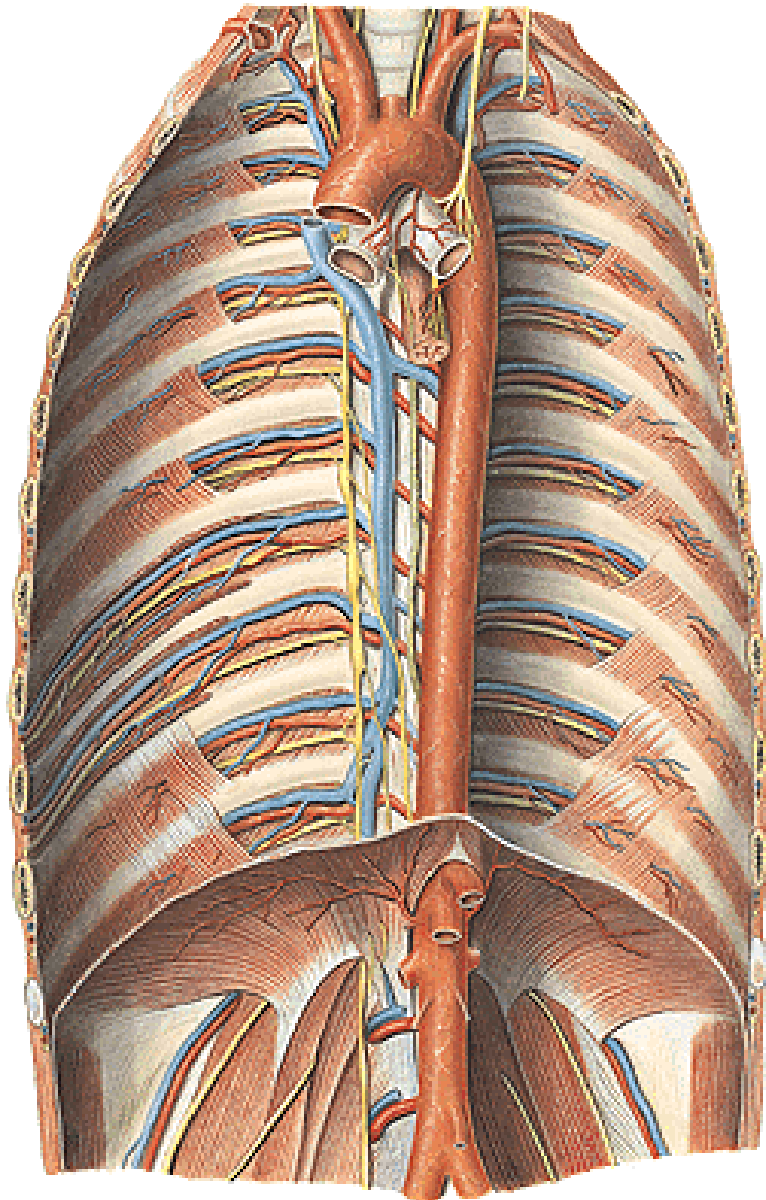


ARTERIAE

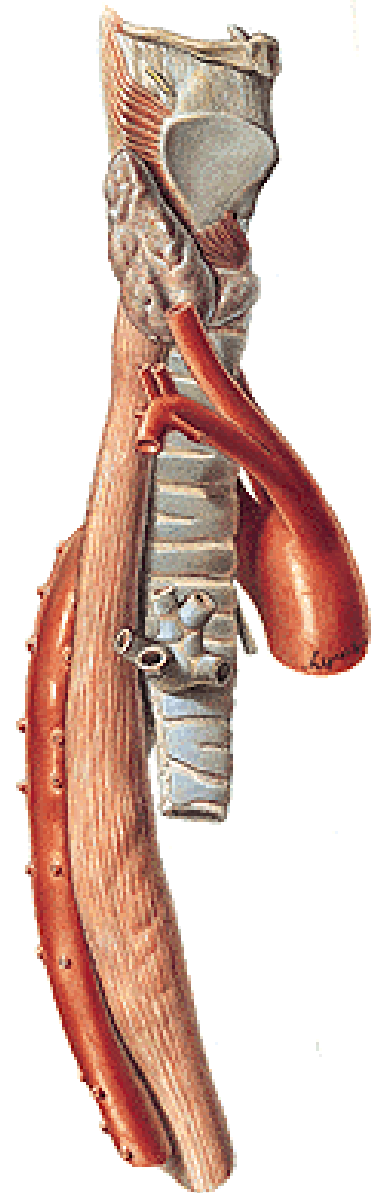
AORTA THORACICA



Th₃



Th₁₁₋₁₂



AORTA THORACICA

Parietální větve

aa. intercostales post. (VAN)

r. dorsalis

rr. musculares

r. collateralis

r. cutaneus lat. (rr. mammarii lat.)

Pietova papilární tepna (ze 4.) !!!!

a. subcostalis

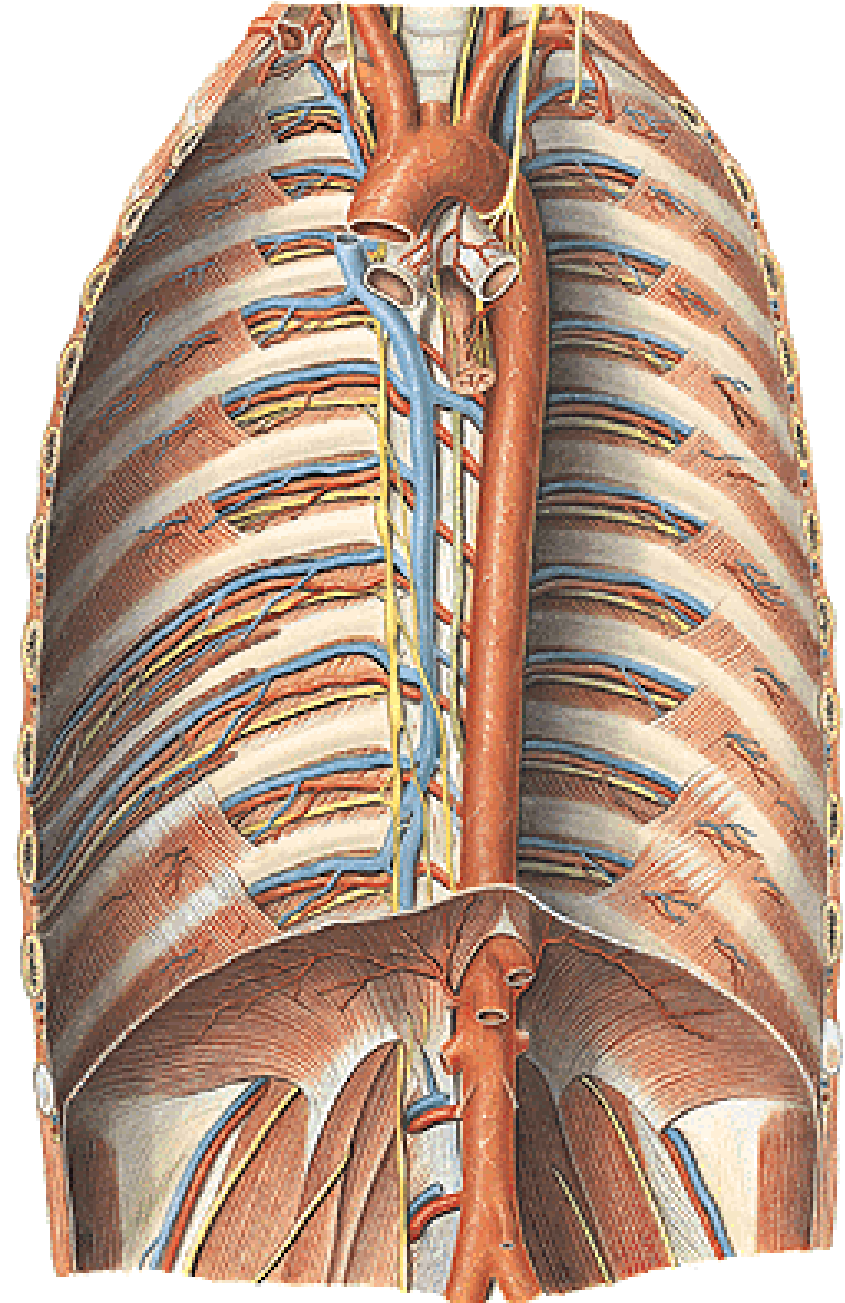
a. phrenica sup.

Viscerální větve:

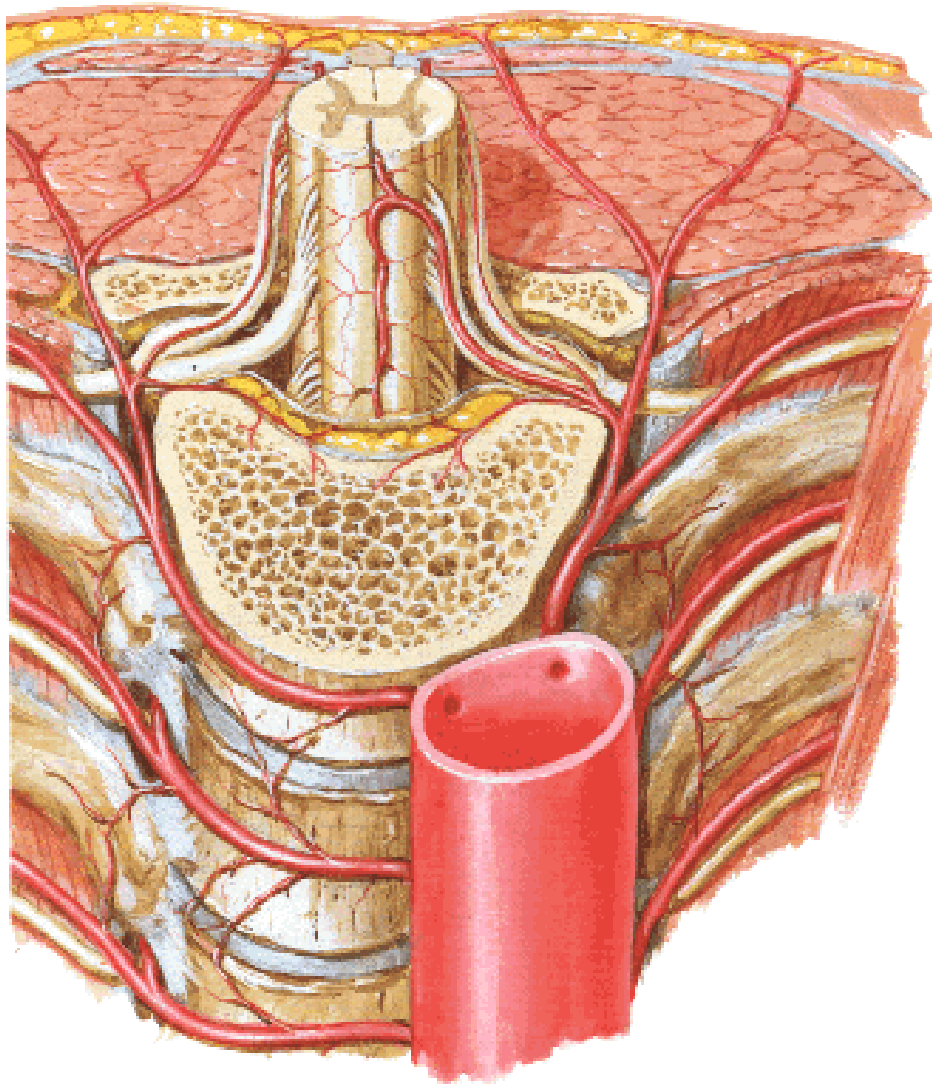
rr. bronchiales

rr. oesophagei

rr. pericardiaci



R. dorsalis a. intercostalis post. :



rr. musculares

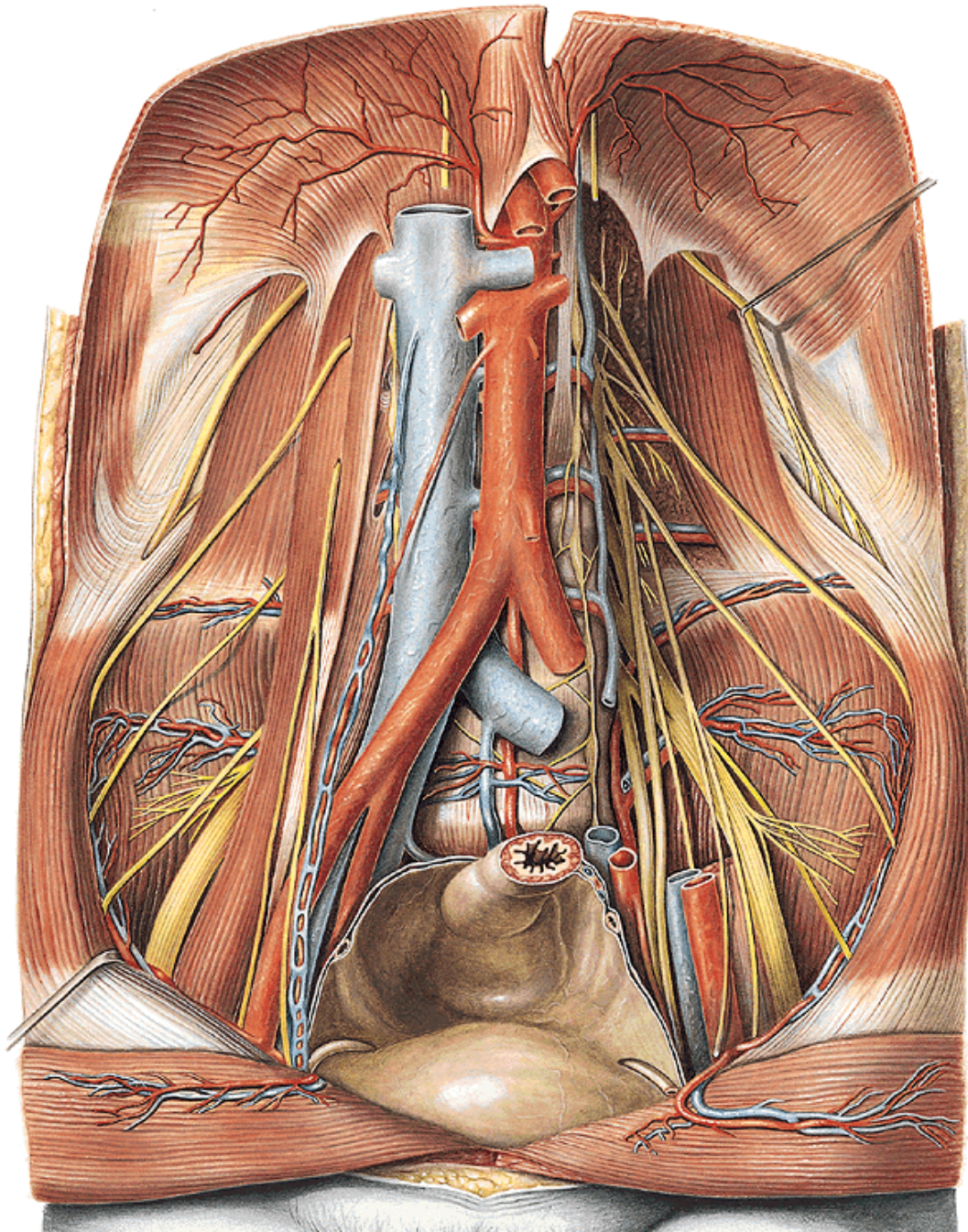
r. spinalis

rr. cutanei med. et lat.

AORTA ABDOMINALIS

Th₁₁₋₁₂ bránice

L₄ bifurcatio aortae



AORTA ABDOMINALIS

Parietální větve

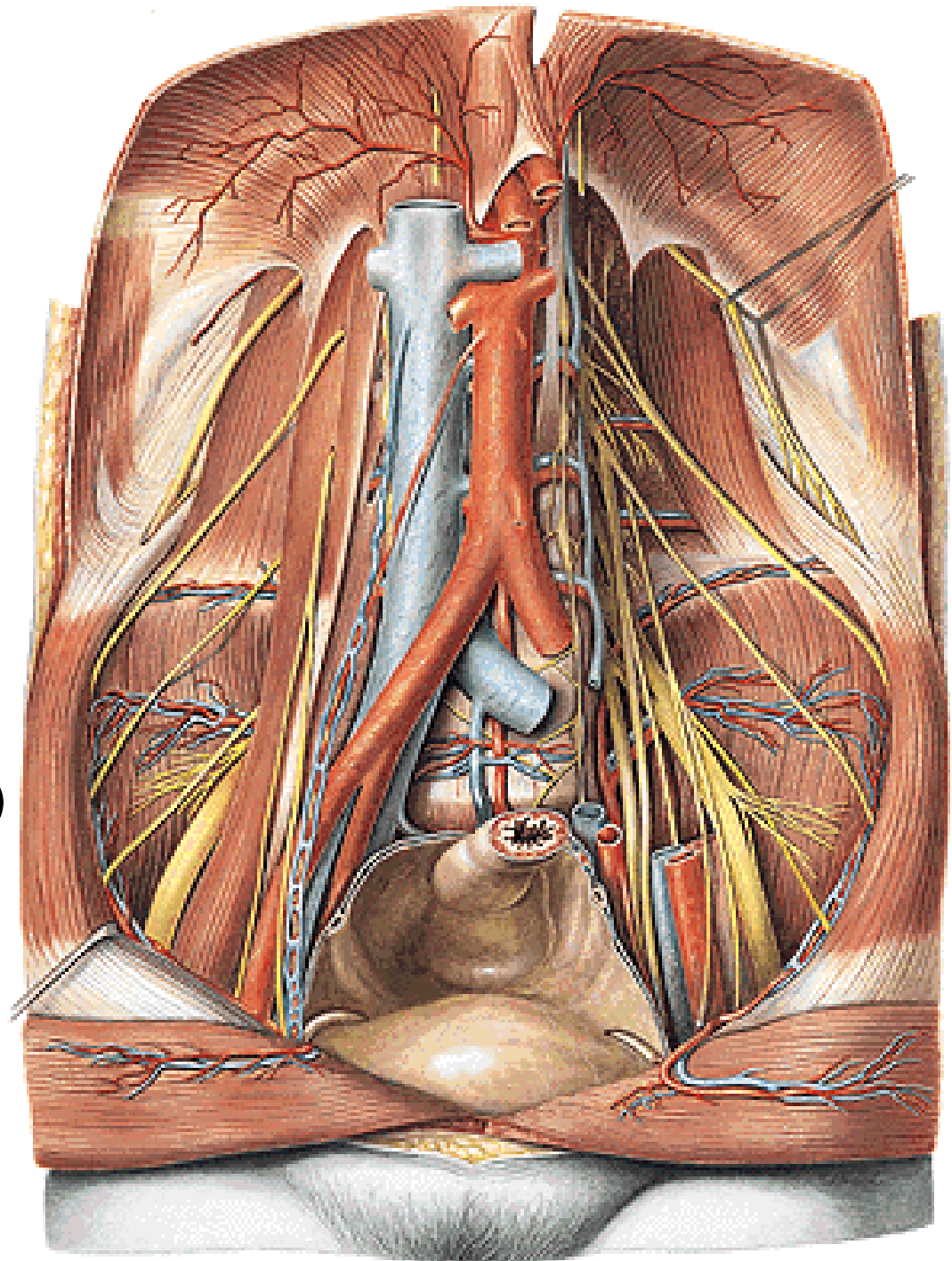
arteria phrenica inf.

(a. suprarenalis sup.)

arteriae lumbales (4)

arteria sacralis mediana

(a. lumbalis ima, rr. sacrales)



AORTA ABDOMINALIS

Viscerální větve - párové

a. suprarenalis media

a. renalis

r. uretericus

a. suprarenalis inf.

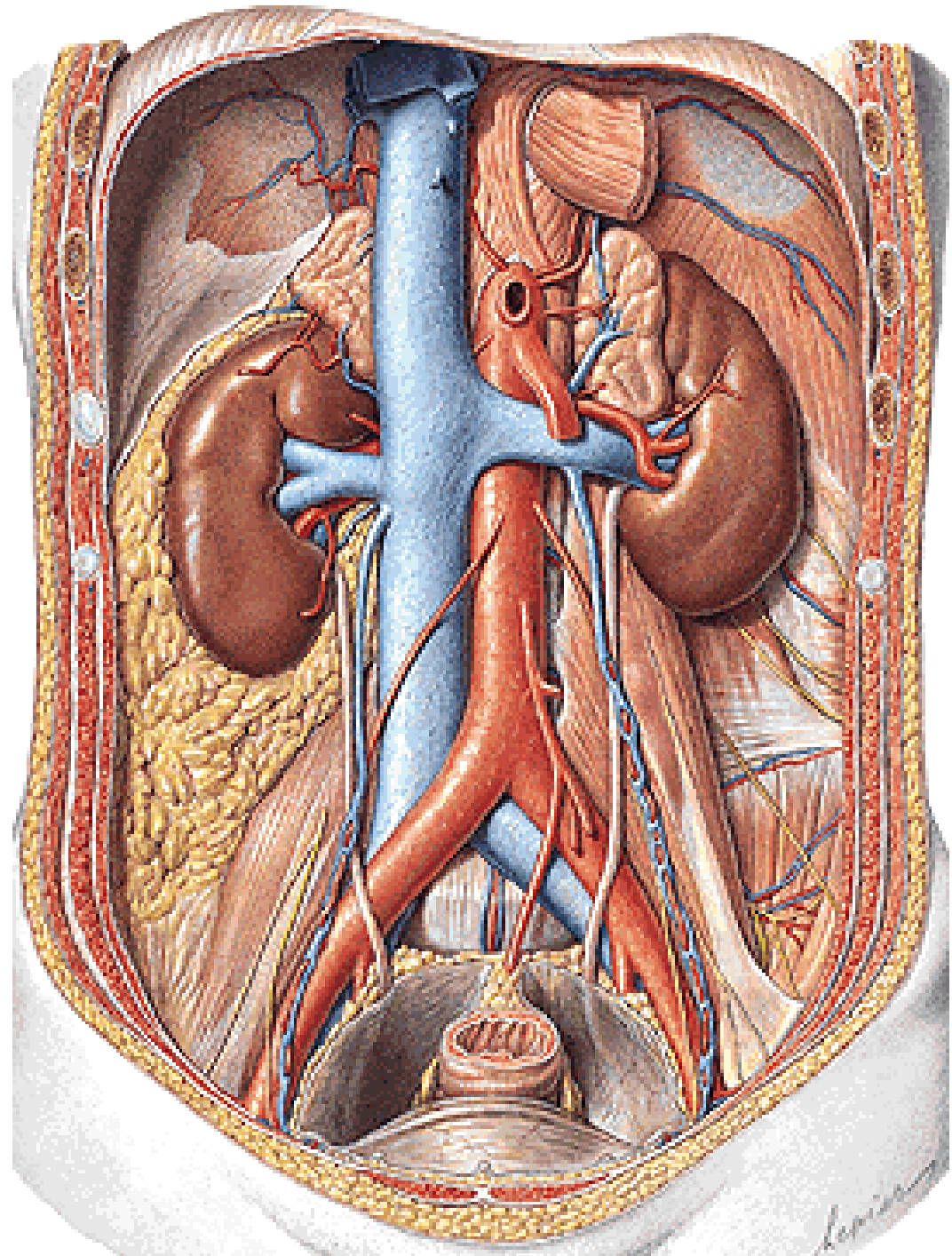
rr. praepelvici

r. retropelvicus

a. testicularis (a. ovarica)

rr. ureterici

(r. tubarius)



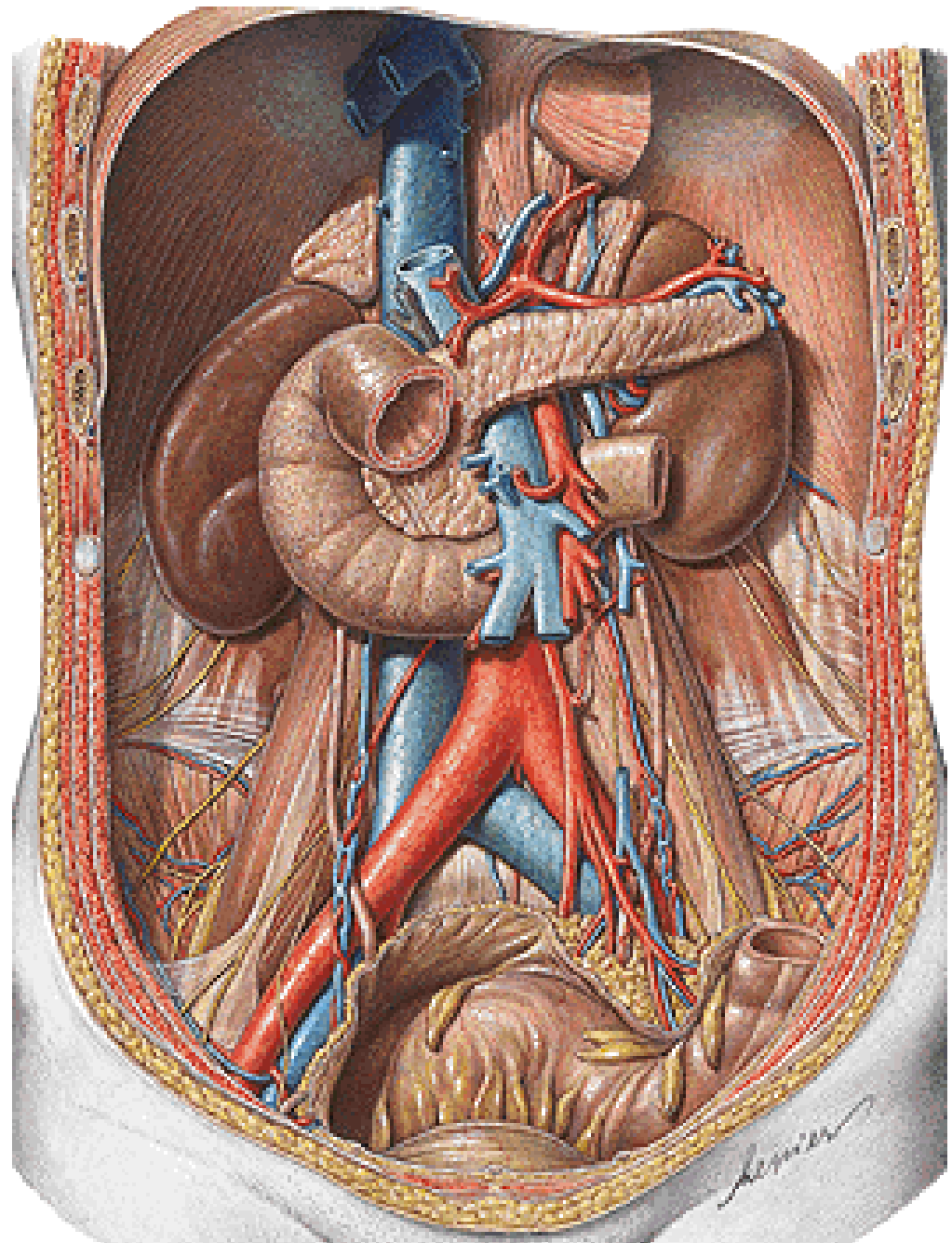
AORTA ABDOMINALIS

Viscerální větve – nepárové

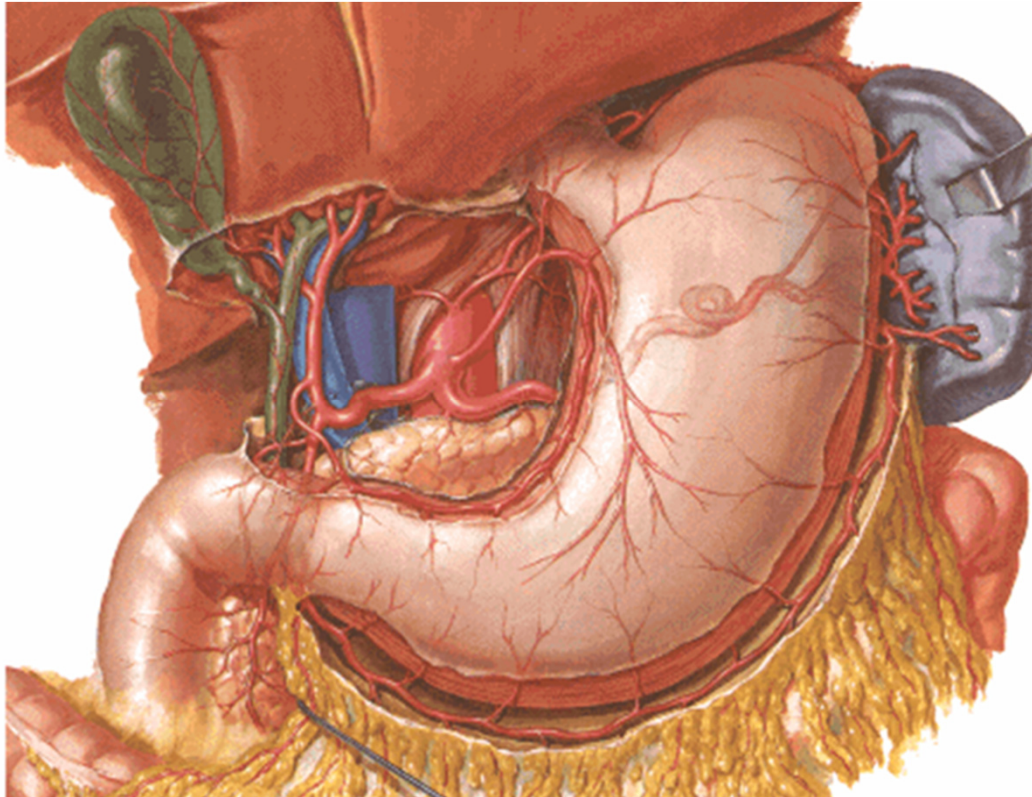
truncus coeliacus Th₁₂

a. mesenterica sup. L₁

a. mesenterica inf. L₃



TRUNCUS COELIACUS



a. gastrica sin.

a. hepatica communis

a. hepatica propria

a. gastrica dx.

r. dexter (a. cystica)

r. sinister

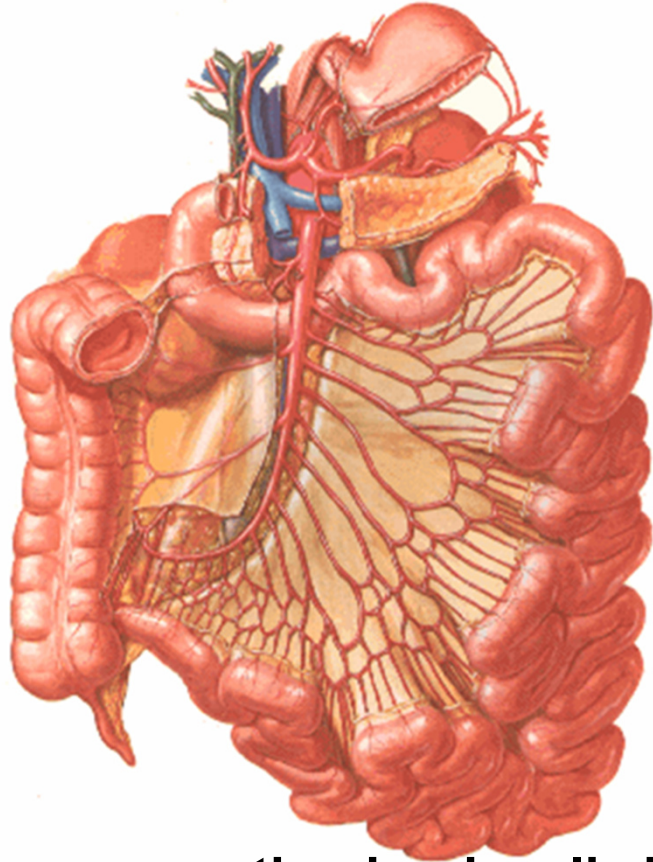
a. gastroduodenalis

a. gastroepiploica dx.

a. pancreaticoduodenalis. sup.

a. lienalis

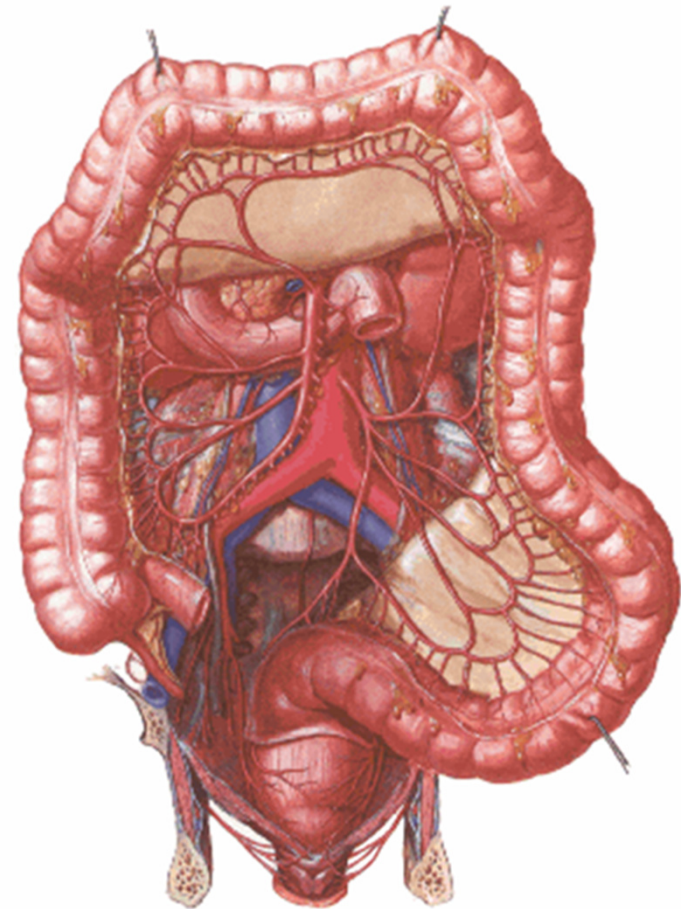
ARTERIA MESENTERICA SUP.



a. pancreaticoduodenalis inf.

aa. jejunales et ilei (10-18)

a. ileocolica



a. colica dx.

a. colica media

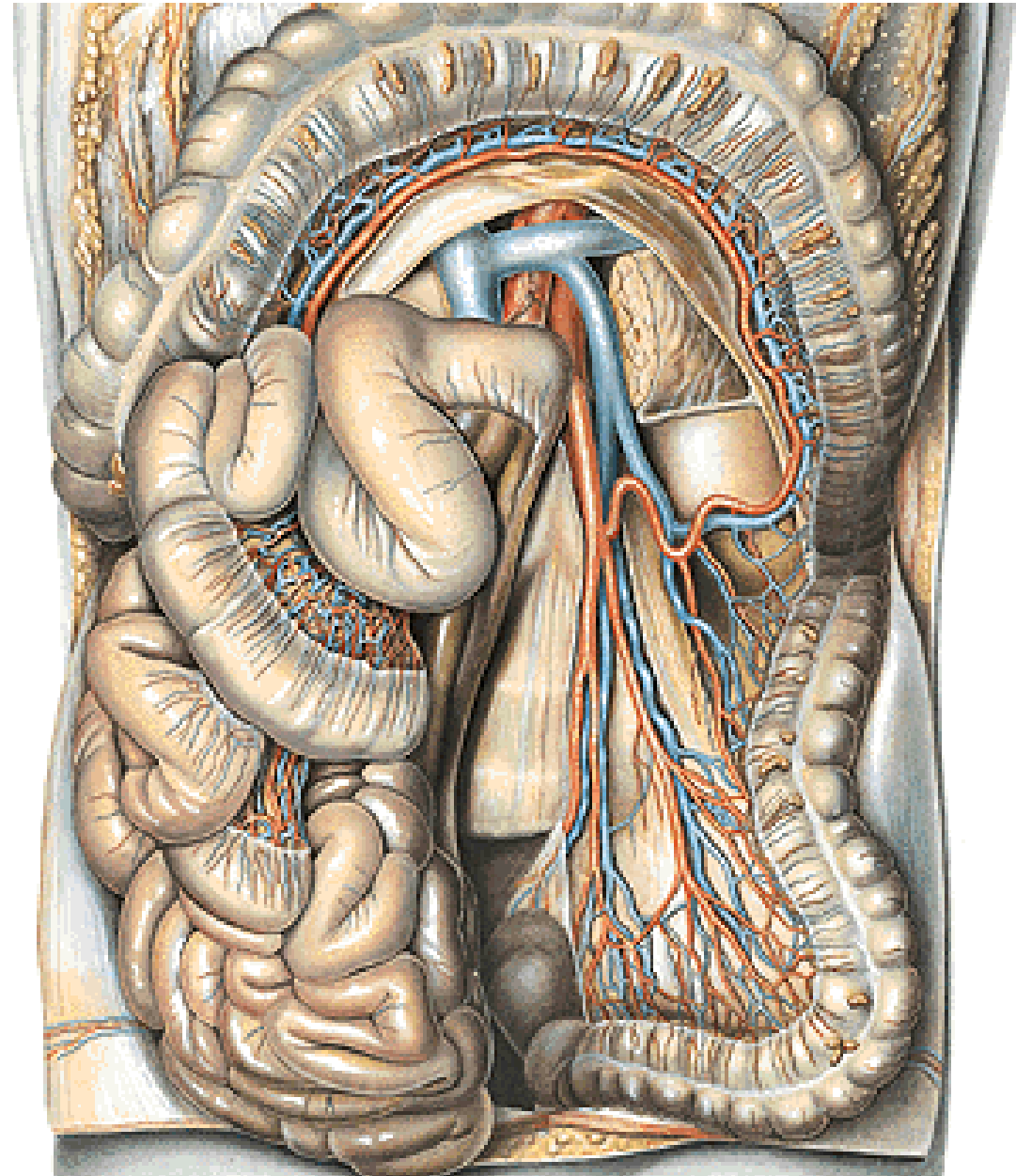
ARTERIA MESENTERICA INF.

a. colica sinistra

aa. sigmoideae

a. rectalis sup.

anastomosis magna
(Halleri)



ARTERIA ILIACA COMMUNIS

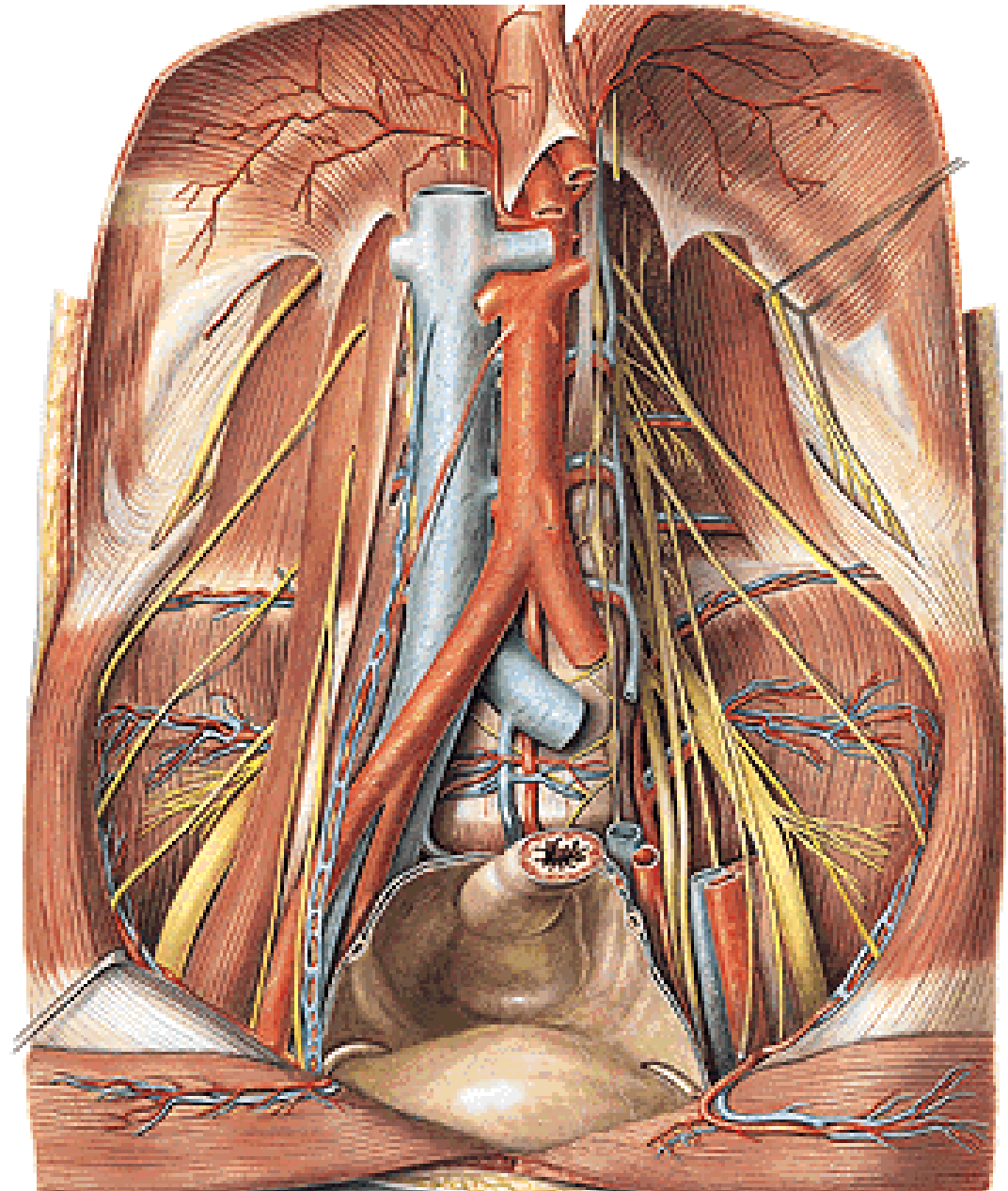
A. iliaca externa

A. iliaca interna

(bifurcatio aortae L₄

glomus coccygeum

articulatio sacroiliaca)



ARTERIA ILIACA INTERNA

Parietální větve

a. iliolumbalis

a. sacralis lat.

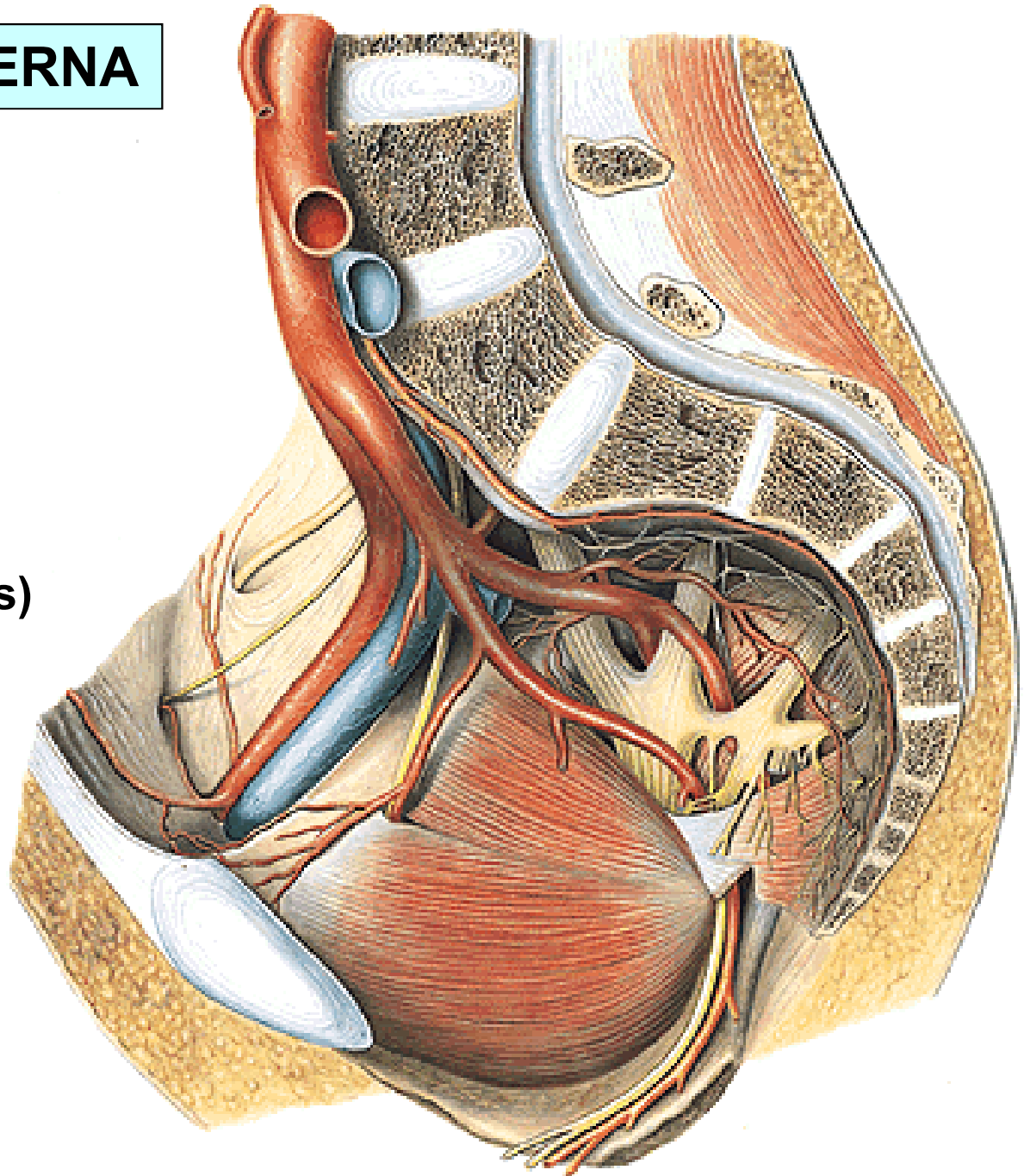
a. obturatoria

(r. pubicus - corona mortis)

a. glutea sup.

a. glutea inf.

a. pudenda interna



ARTERIA PUDENDA INTERNA

a. rectalis inf.

a. perinealis – rr. scrotales post.
(rr. labiales post.)

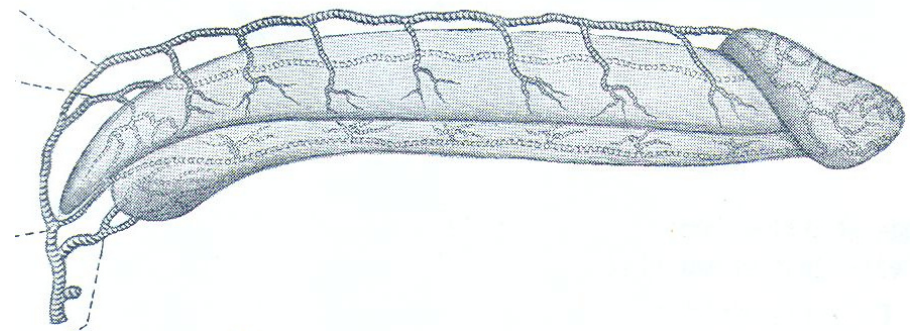
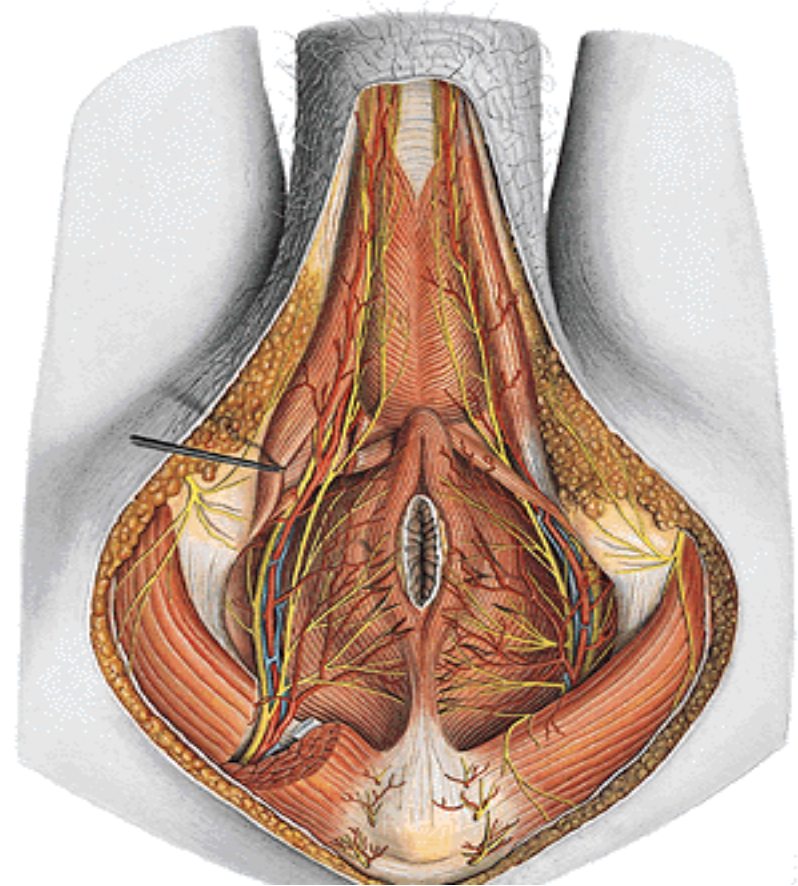
a. penis (a. clitoridis)

a. bulbi penis (vestibuli)

a. urethralis

a. profunda penis (clitoridis)

a. dorsalis penis (clitoridis)



ARTERIA ILIACA INTERNA

Viscerální větve

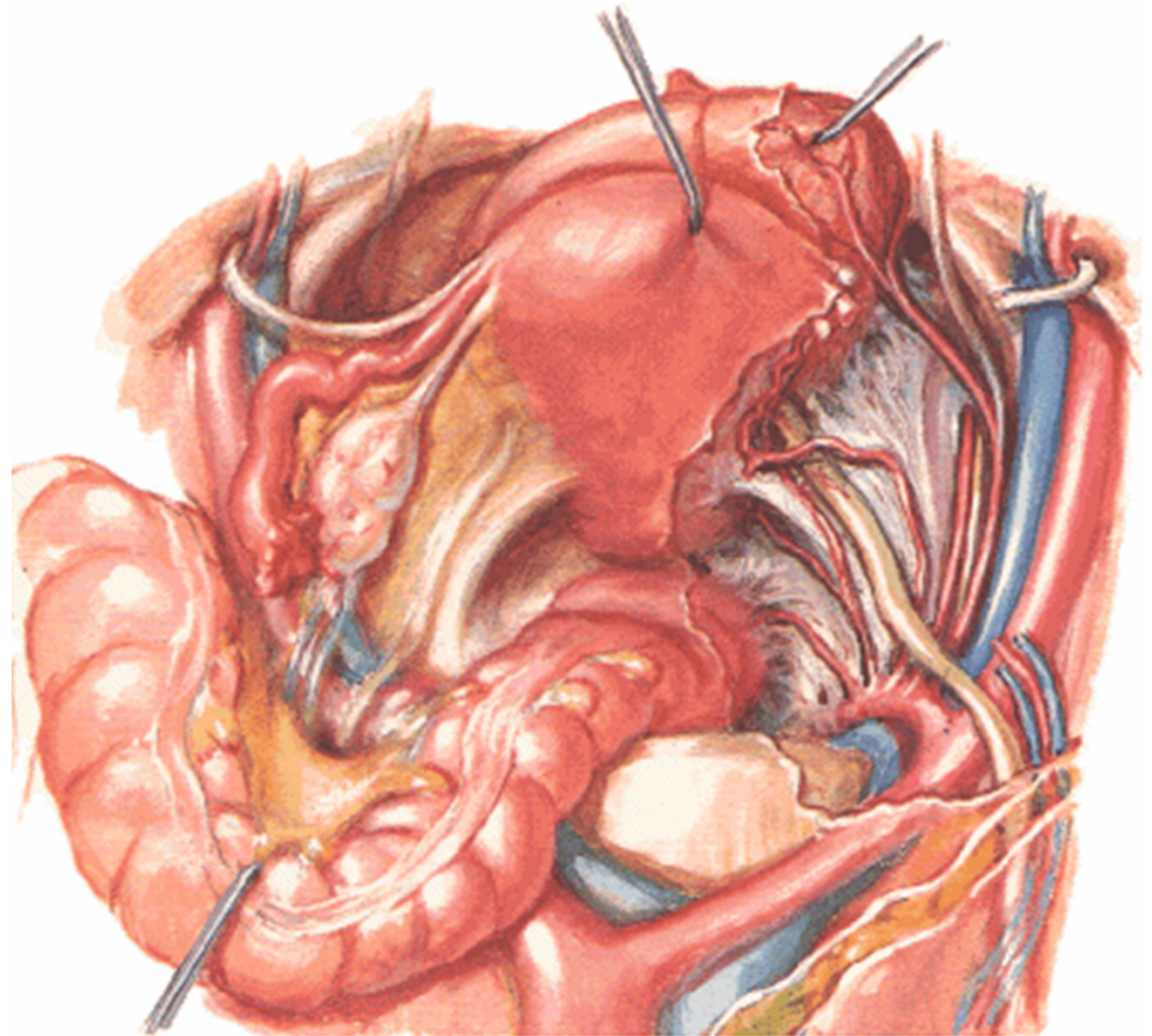
aa. vesicales sup.
(a. umbilicalis)

a. vesicalis inf.

a. rectalis media

♂ a. ductus deferentis

♀ a. uterina



ARTERIA UTERINA

r. uretericus

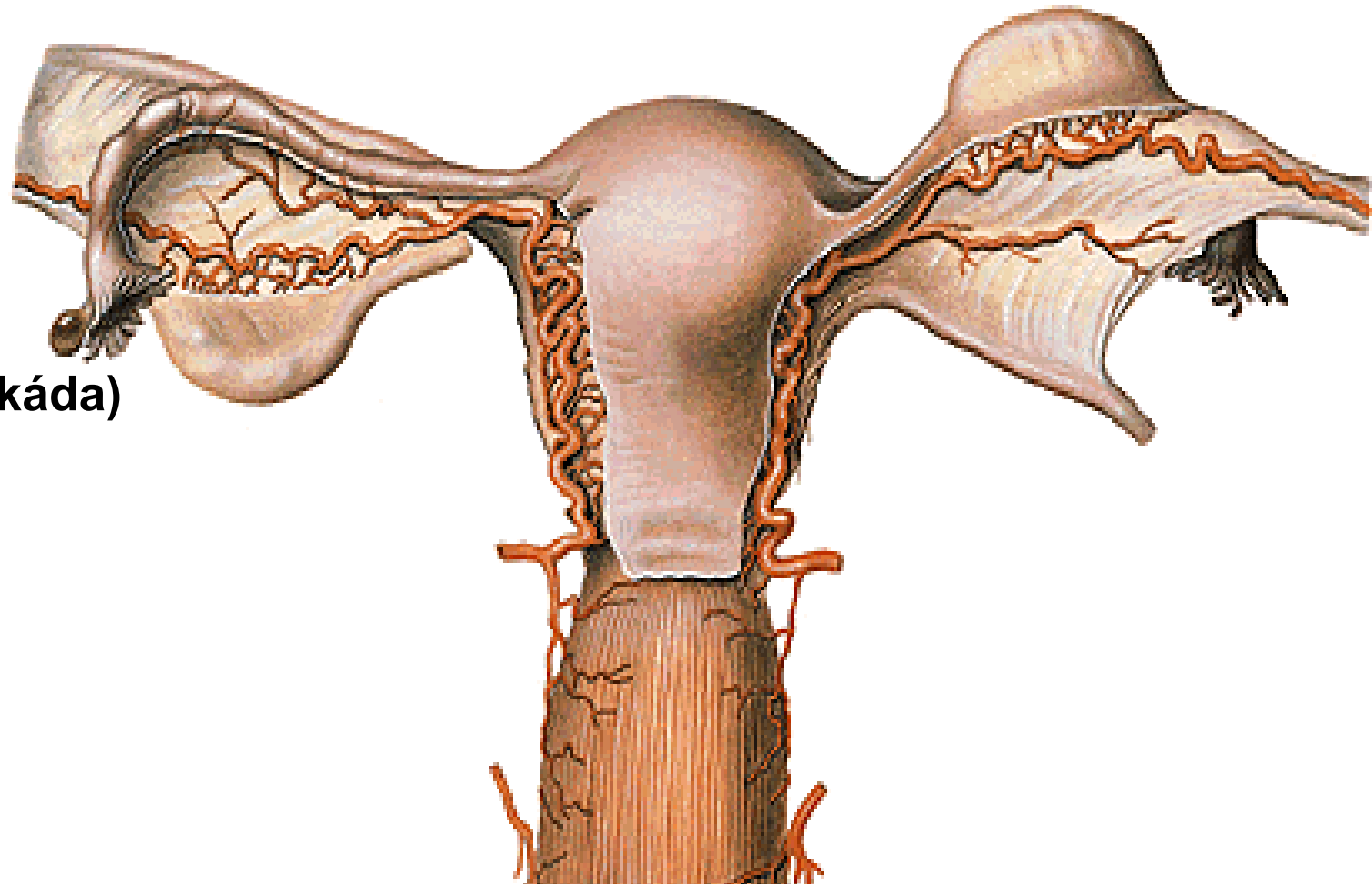
a. vaginalis ant. et post.

rr. uterini

r. tubarius

r. ovaricus

(ovariální arkáda)



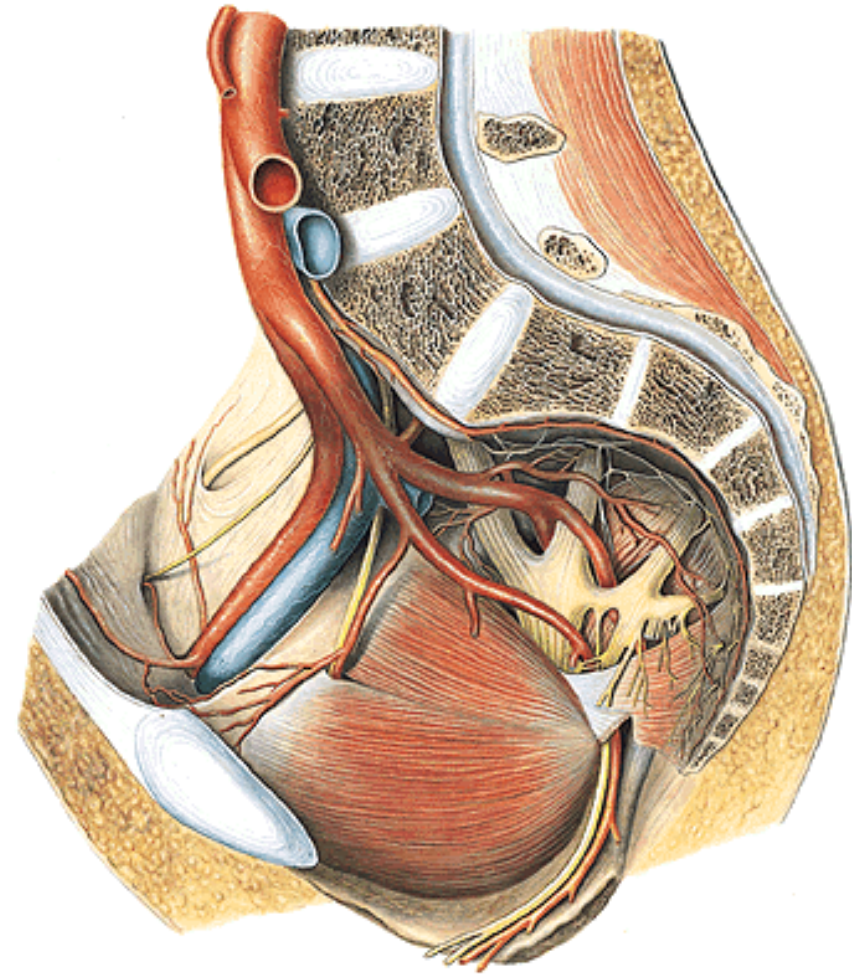
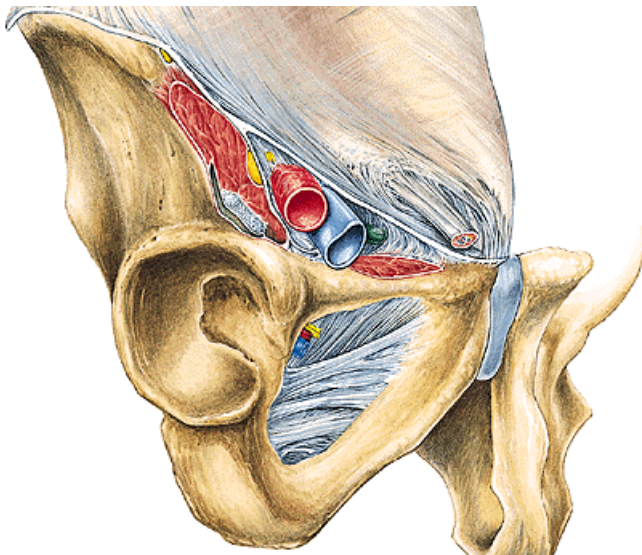
ARTERIA ILIACA EXTERNA

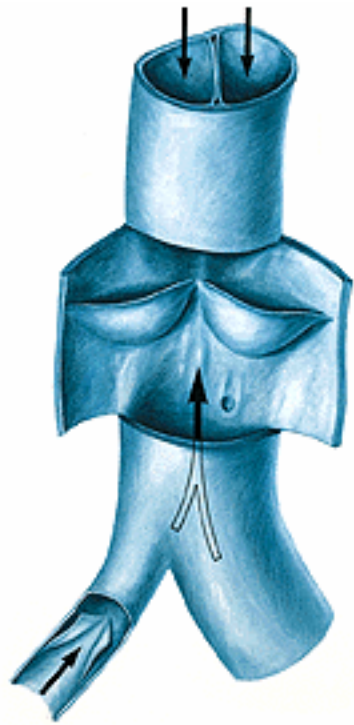
a. epigastrica inf.

r. pubicus (corona mortis)

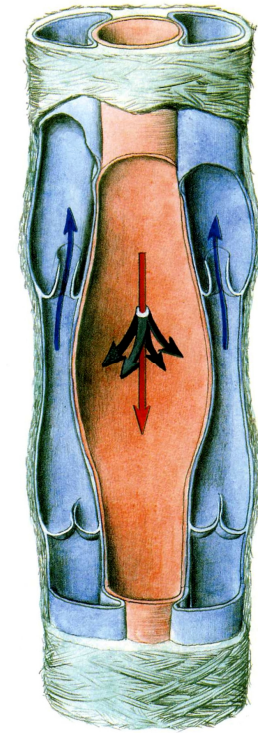
a. cremasterica
(a. ligamenti teretis)

a. circumflexa ilium profunda





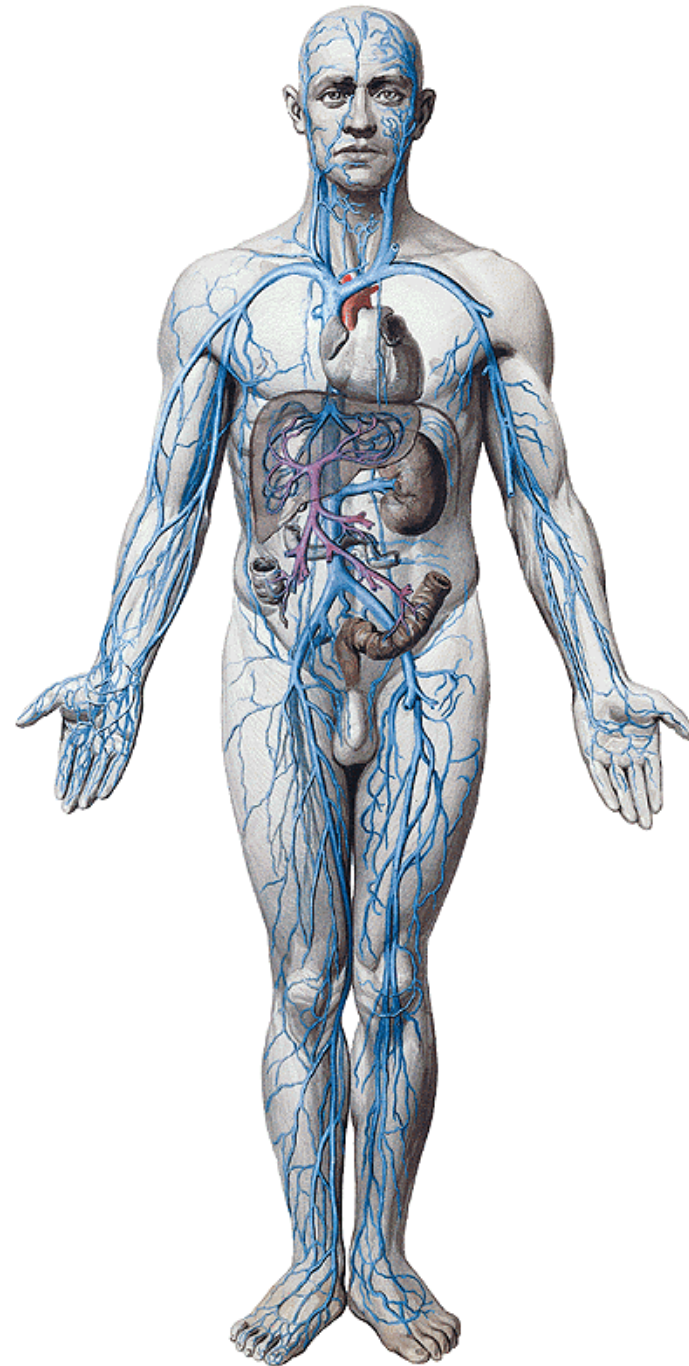
VENAE



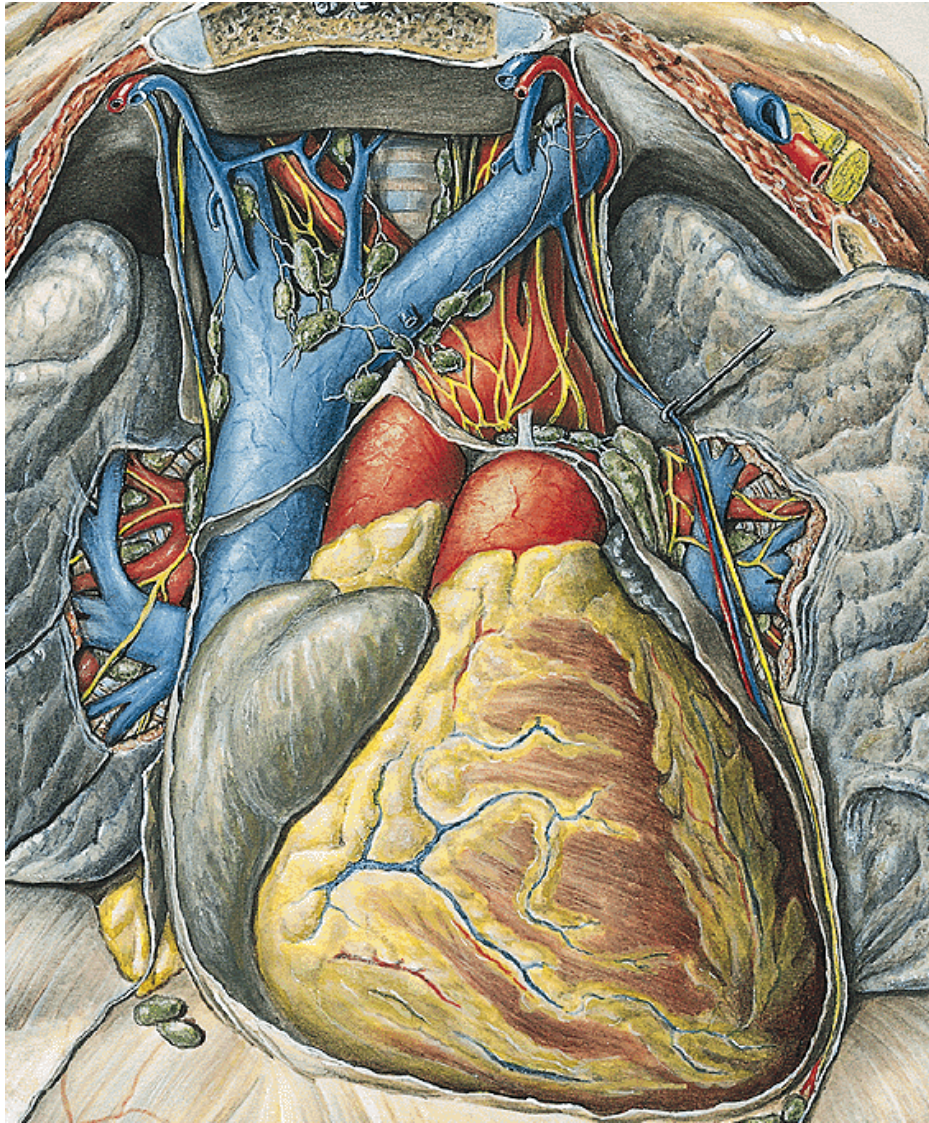
v. cava superior
(hlava, krk, hrudník)



v. cava inferior
(dolní končetiny, pánev, břicho)



Vena cava superior

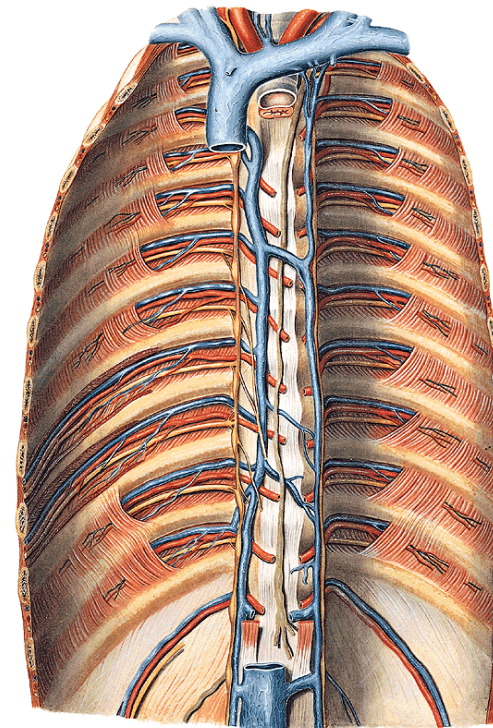


vv. brachiocephalicae (dx., sin.)

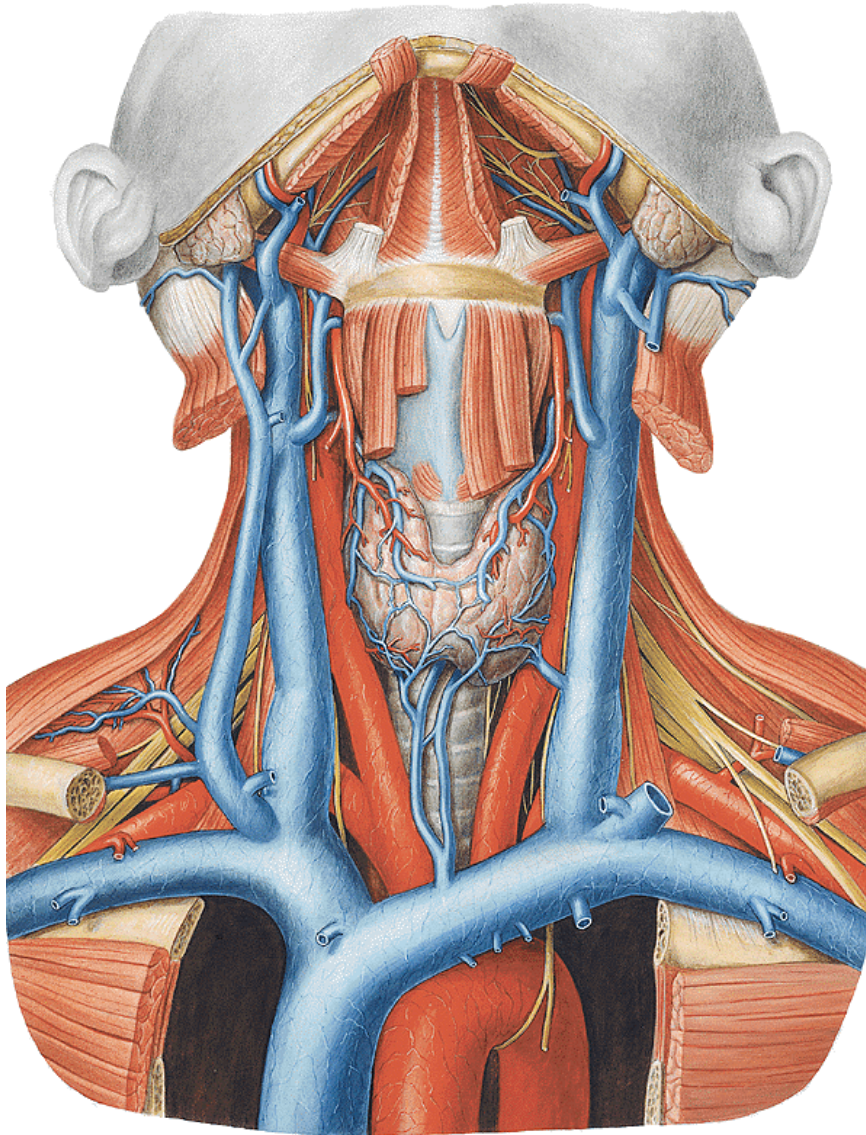
1.-3. sternokostální spojení dx.

Větve: v. azygos,

vv. mediastinales



Venae brachiocephalicae (dx., sin.)

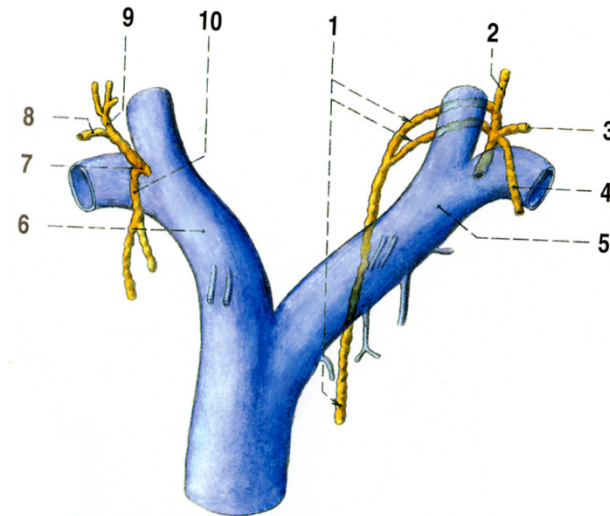


Angulus venosus dx., sin.

(art. sternoclavicularis)

v. subclavia, v. jugularis int.

(ductus thoracicus, tr. lymphaticus dx.)



Venae brachiocephalicae

(přítoky provázejí větve a subclavia)

v. thyroidea inf., ima (plexus thyroideus impar)

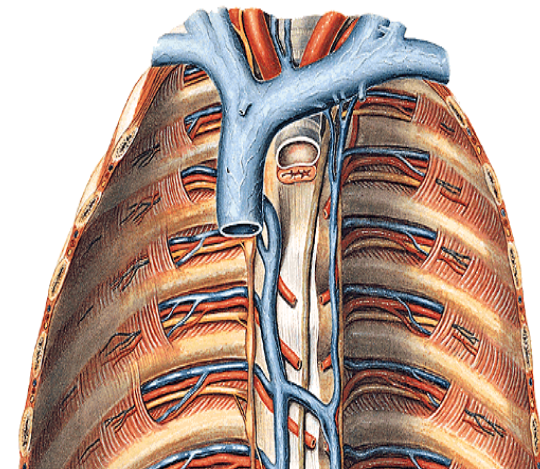
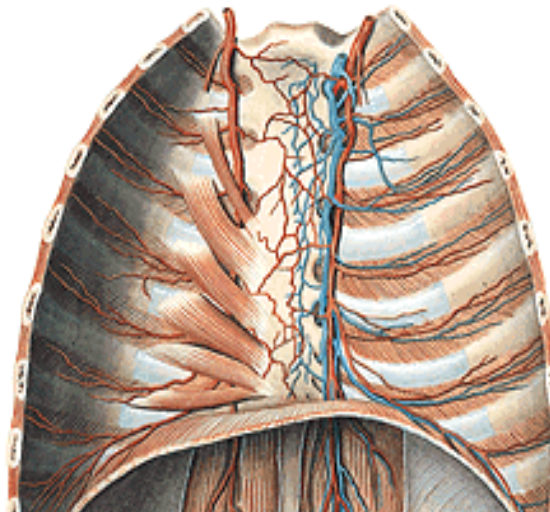
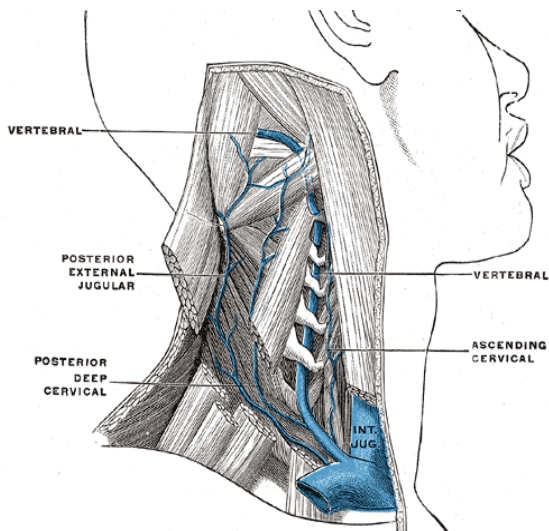
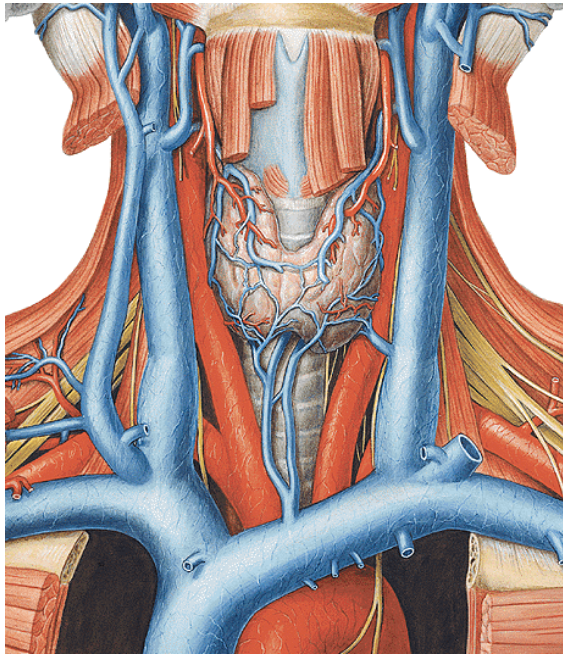
v. vertebralis (plexus venosus suboccipitalis)

v. thoracica int. (+ vv. subcutaneae abdominalis)

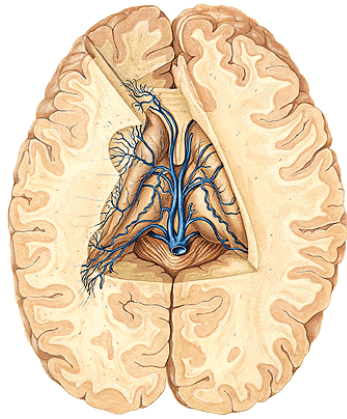
v. cervicalis prof.

v. intercostalis suprema (anastom. s v. azygos....)

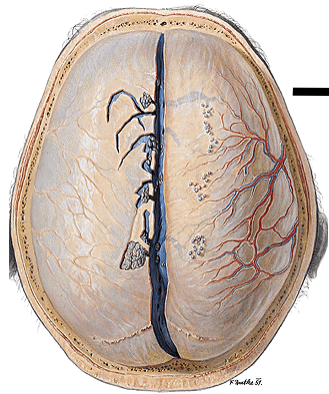
vv. mediastinales (thymicae, tracheales, bronchiales, pericardiacae, oesophageae)



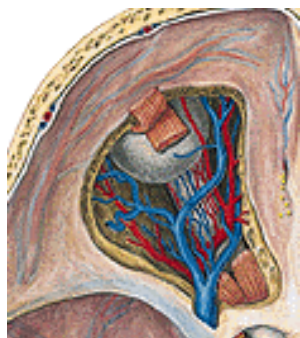
Intrakraniální přítoky



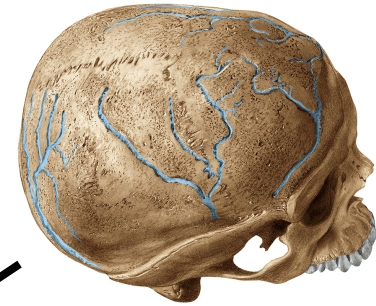
venae cerebri



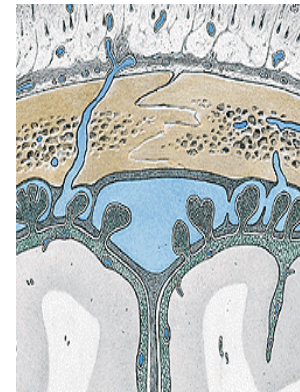
venae meningeae



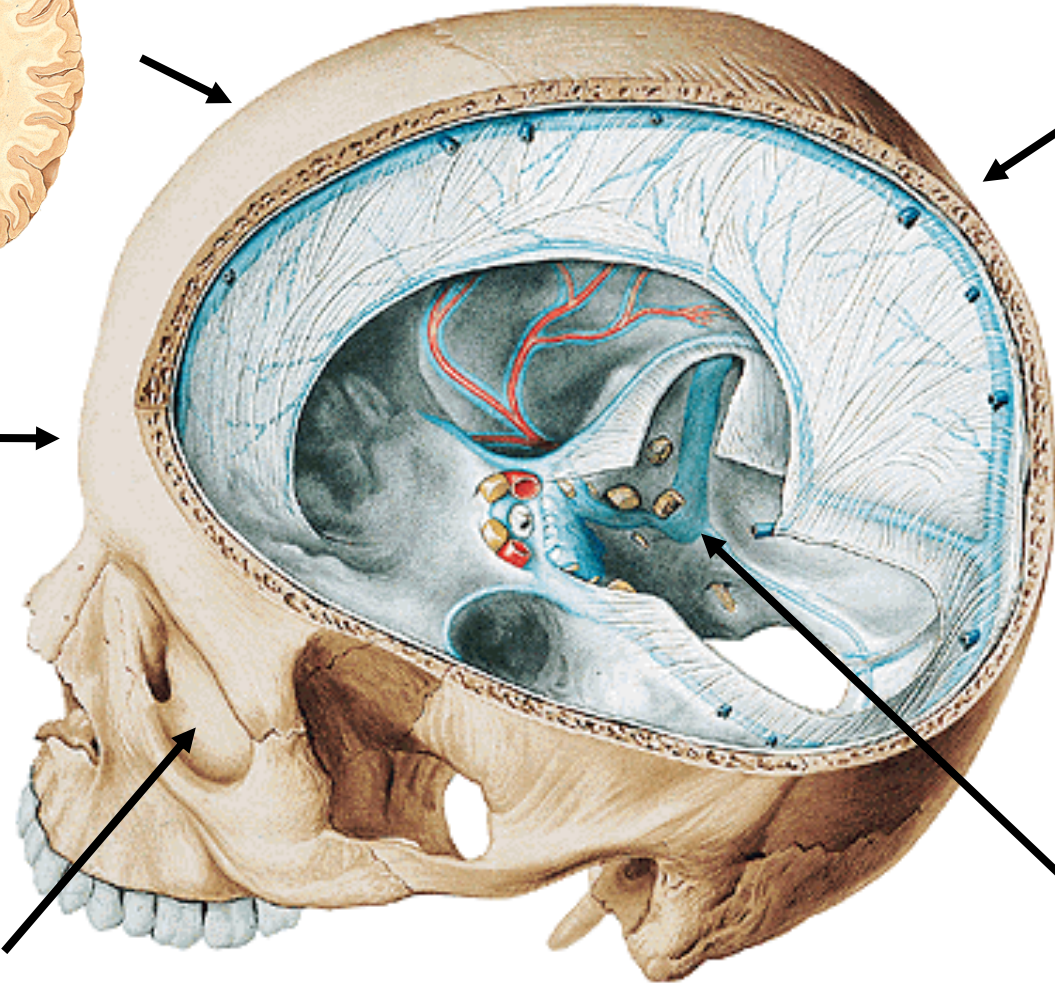
venae ophthalmicae



venae diploicae



venae emissariae



sinus sigmoideus !



Extrakraniální přítoky

Přední (samostatně, společný kmen...)

- v. facialis
- v. lingualis
- v. thyroidea superior

Mediální (samostatně)

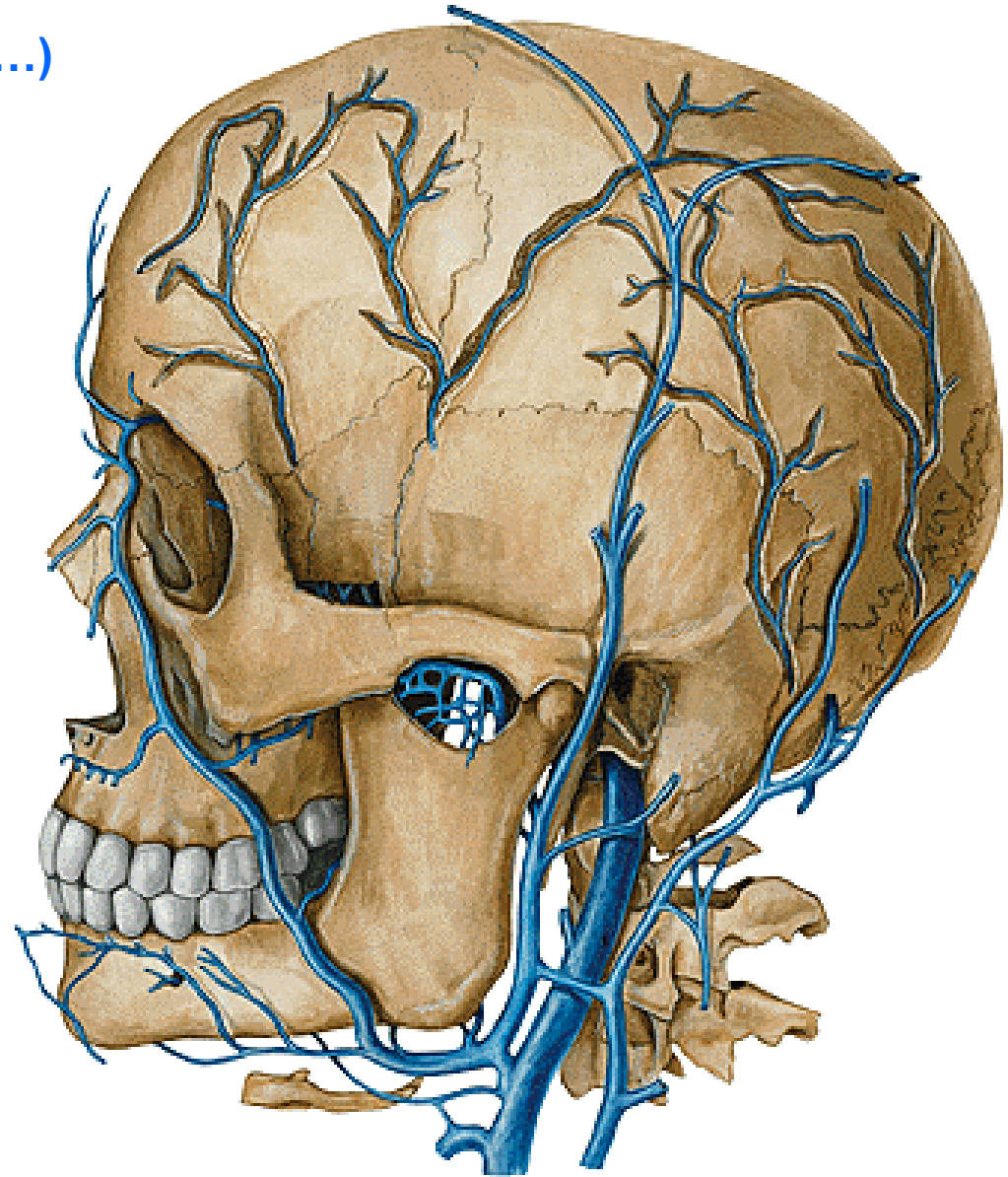
- v. pharyngea (plexus pharyngeus)

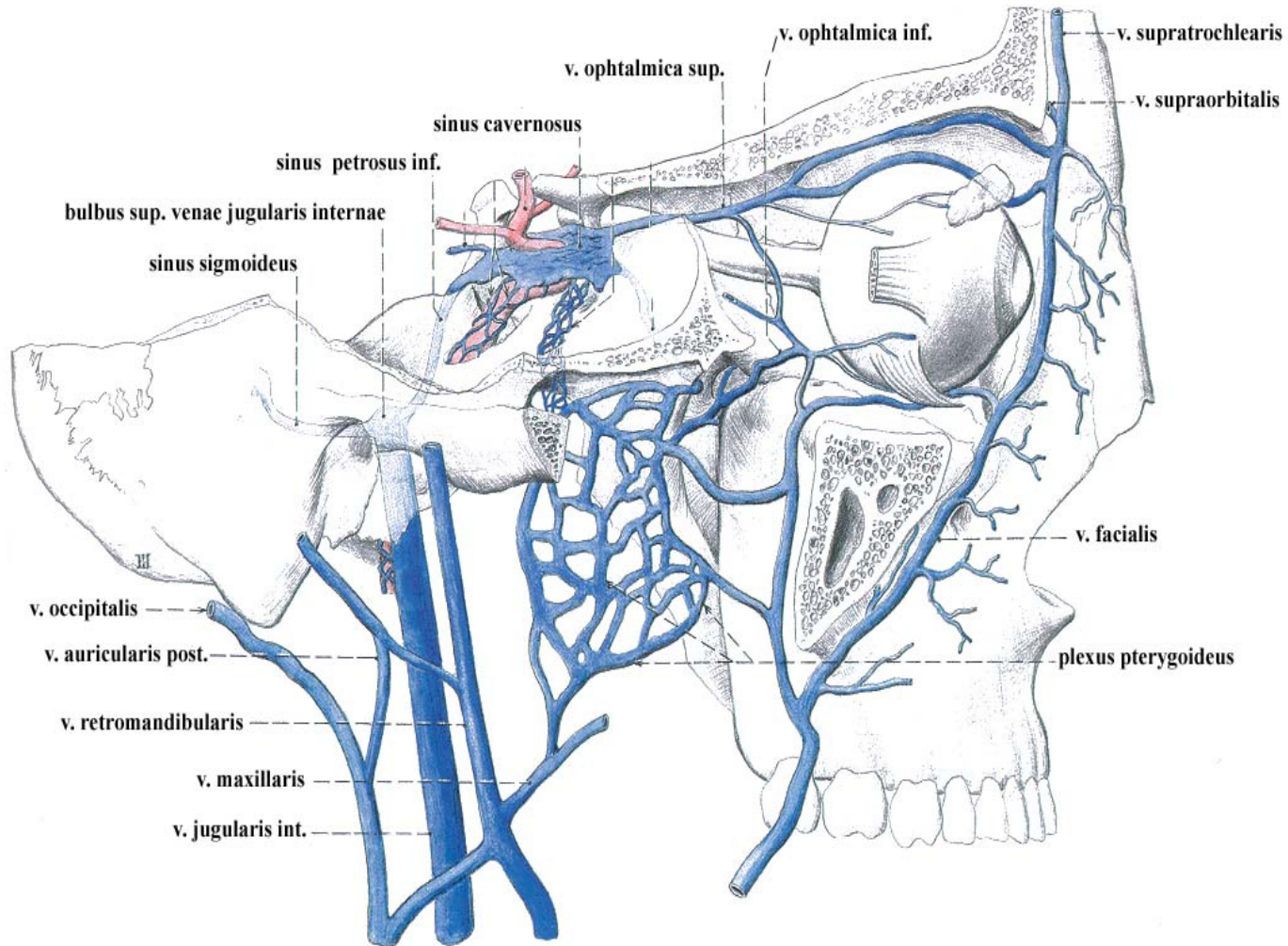
Zadní (vena jugularus externa)

- v. auricularus posterior
- v. occipitalis

Kmenové (vena retromandibularis)

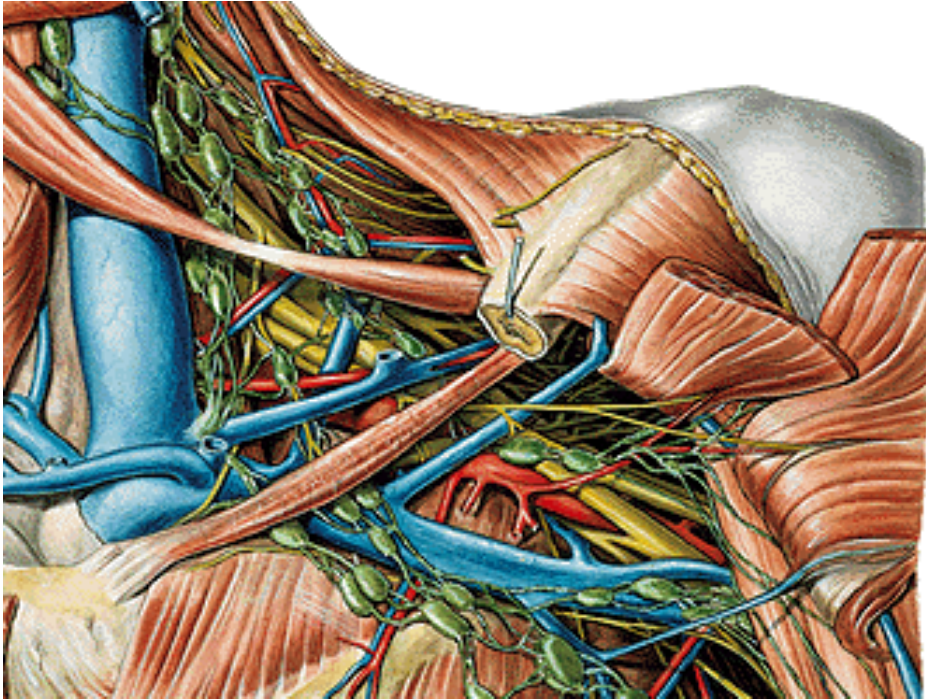
- v. temporalis superficialis
- v. maxillaris (plexus pterygoideus)



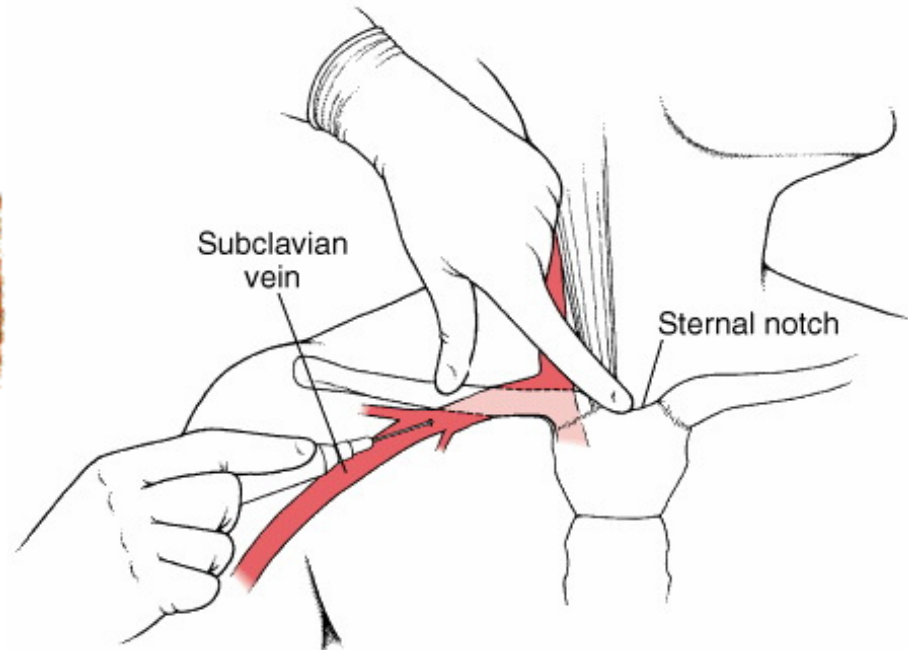


Vena subclavia

Neprobíhá skrze fissura scalenorum !!!



Centrální katetrizace

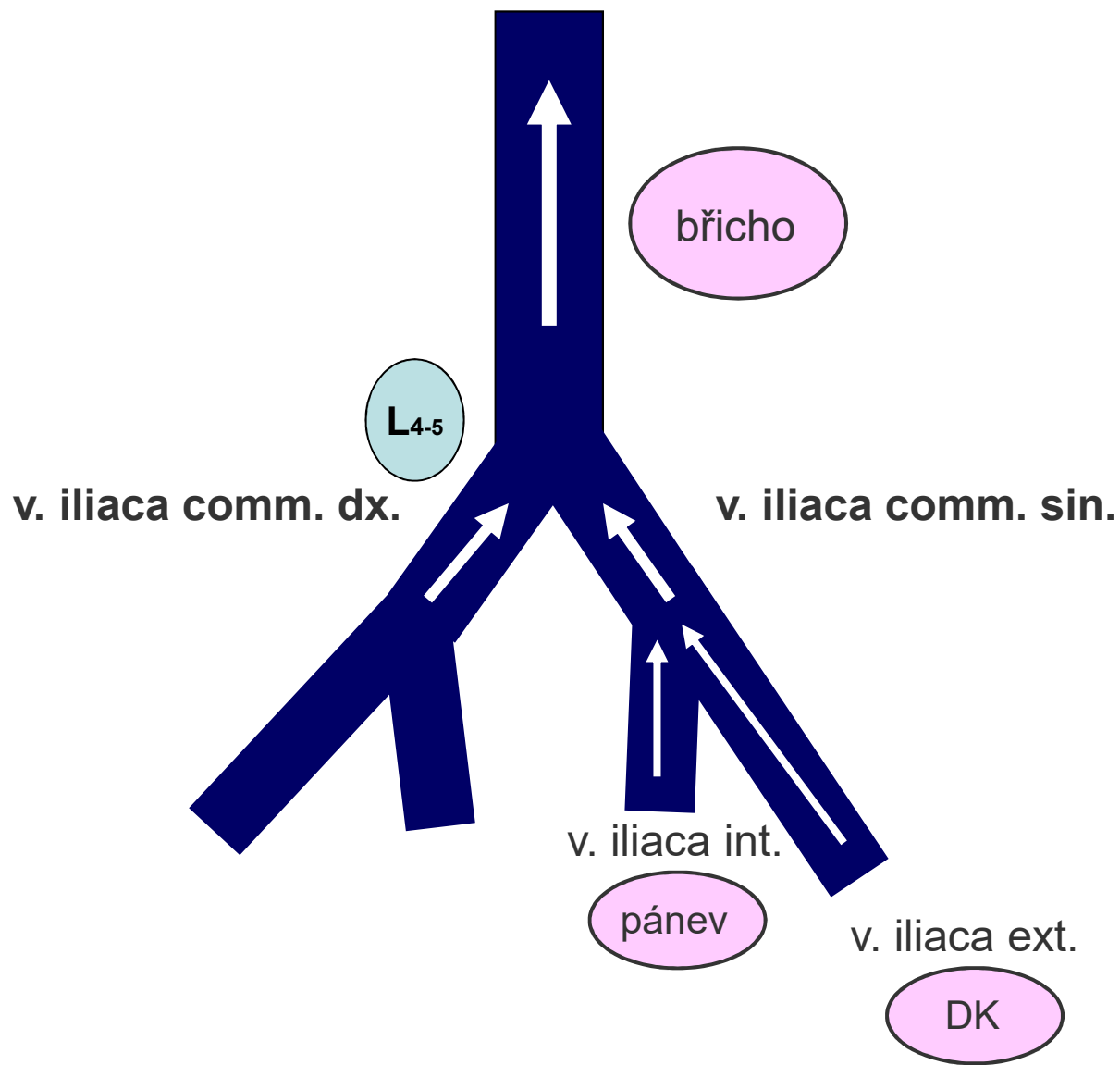


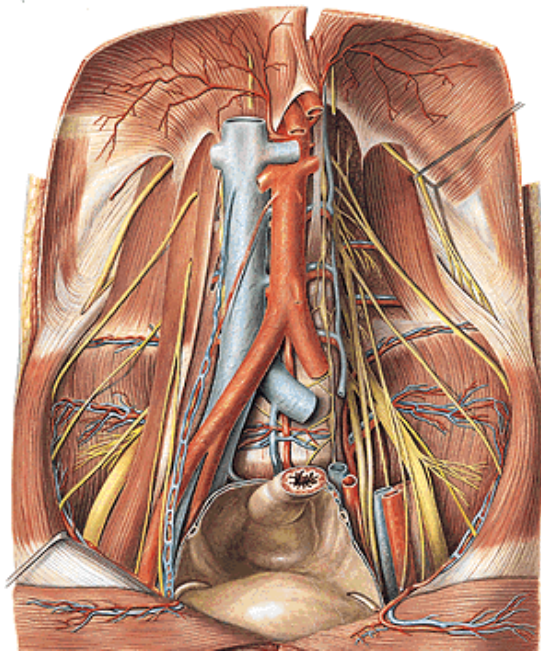
v. suprascapularis

v. transversa colli



v. cava inferior





Vena cava inferior – parietální přítoky

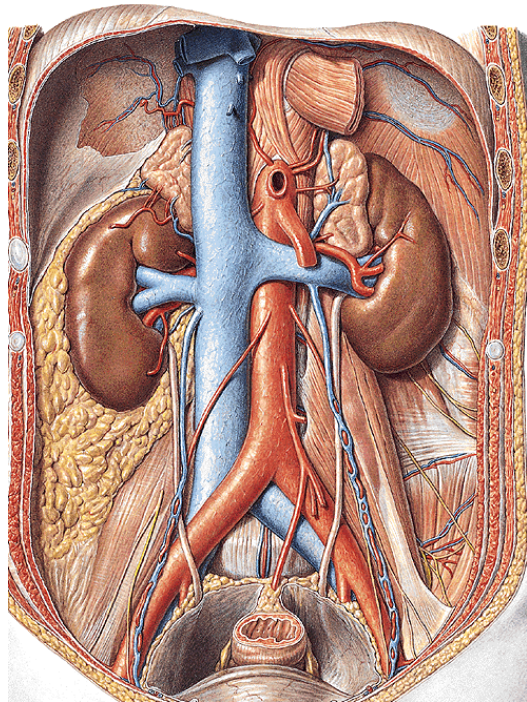
v. phrenicae inf dx. (sin. – v. renalis sin.)

vv. lumbales

plexus venosi vertebrales (externi, interni)

vv. lumbales asc. (v. azygos, v. hemiazygos)

v. sacralis mediana (nebo v. iliaca comm. sin.)



Vena cava inferior – viscerální přítoky

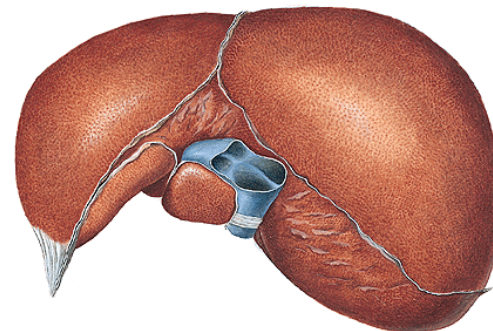
v. suprarenalis dx.

vv. renales (sin. - bránice, nadledviny, pohl. žlázy)

v. testicularis dx. (plexus pampiniformis)

v. ovarica dx. (plexus venosus ovaricus)

vv. hepaticae



Vena iliaca communis

Přítoky: v. iliaca interna + v. iliaca externa (articulatio sacroiliaca)

v. sacralis mediana (do v. iliaca comm. **sin.!**)

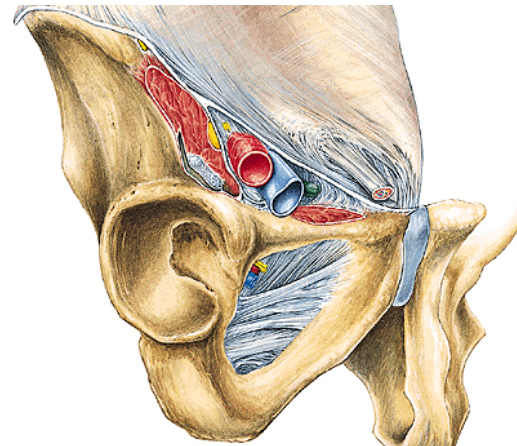
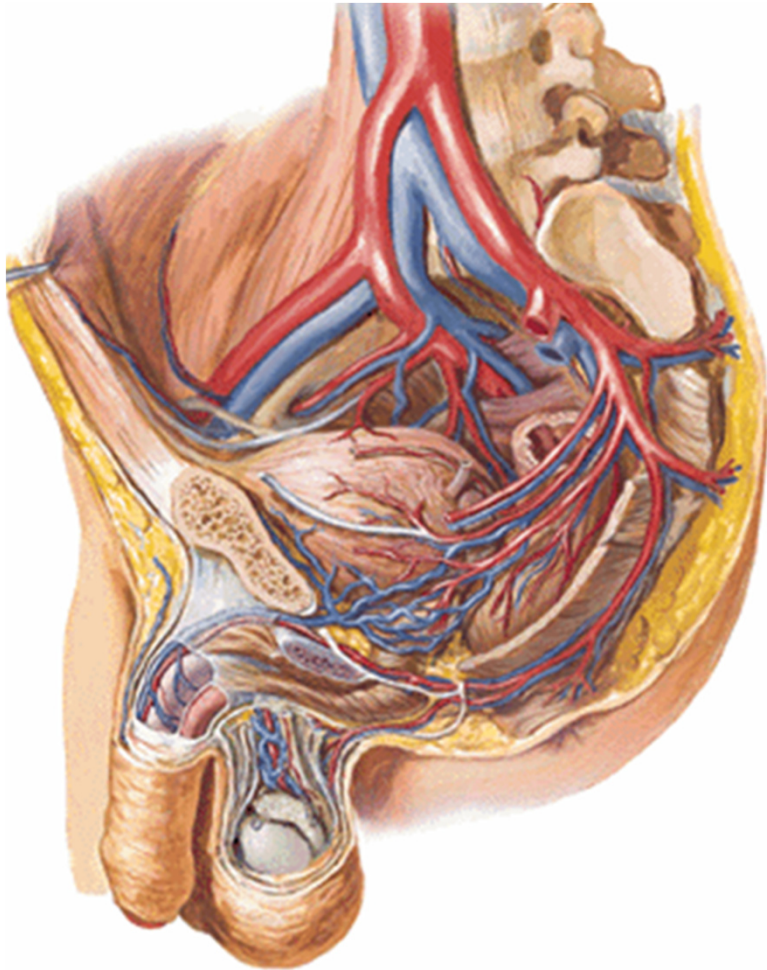
Variabilně: v. sacralis lat., v. iliolumbalis

Vena iliaca externa

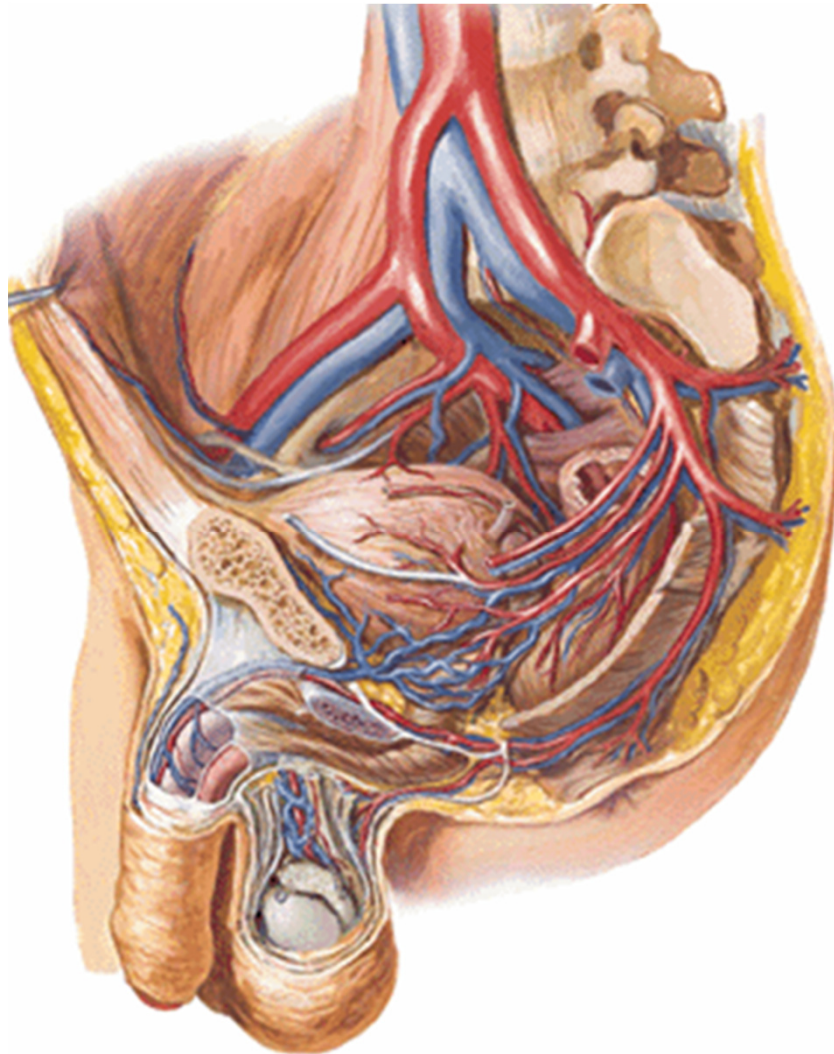
v. epigastrica inferior

v. circumflexa ilium profunda

v. femoralis (lacuna vasorum)



Vena iliaca interna – parietální přítoky



odpovídají větvení tepen

vena glutea superior

vena glutea inferior

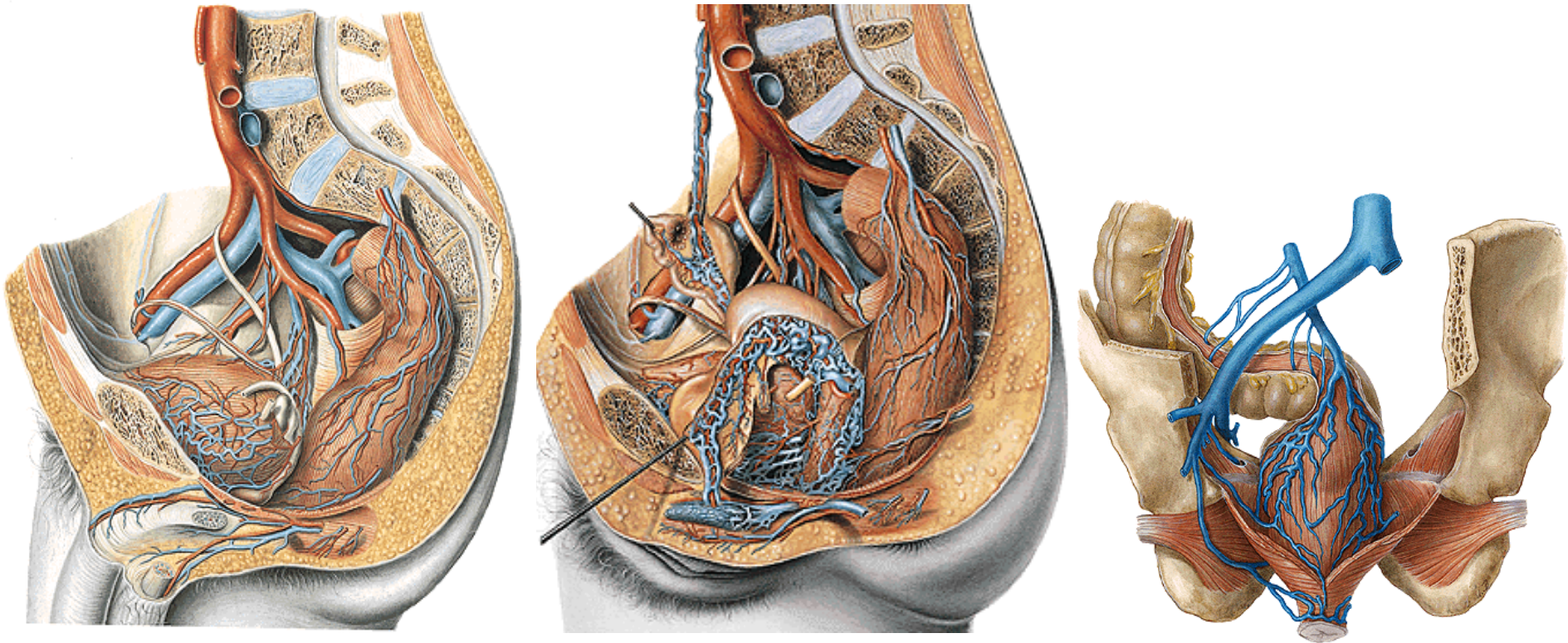
vena sacralis lateralis

vena iliolumbalis

vena obturatoria

vena pudenda interna

Vena iliaca interna - viscerální přítoky



Pleteně kolem pánevních orgánů – plexus venosi

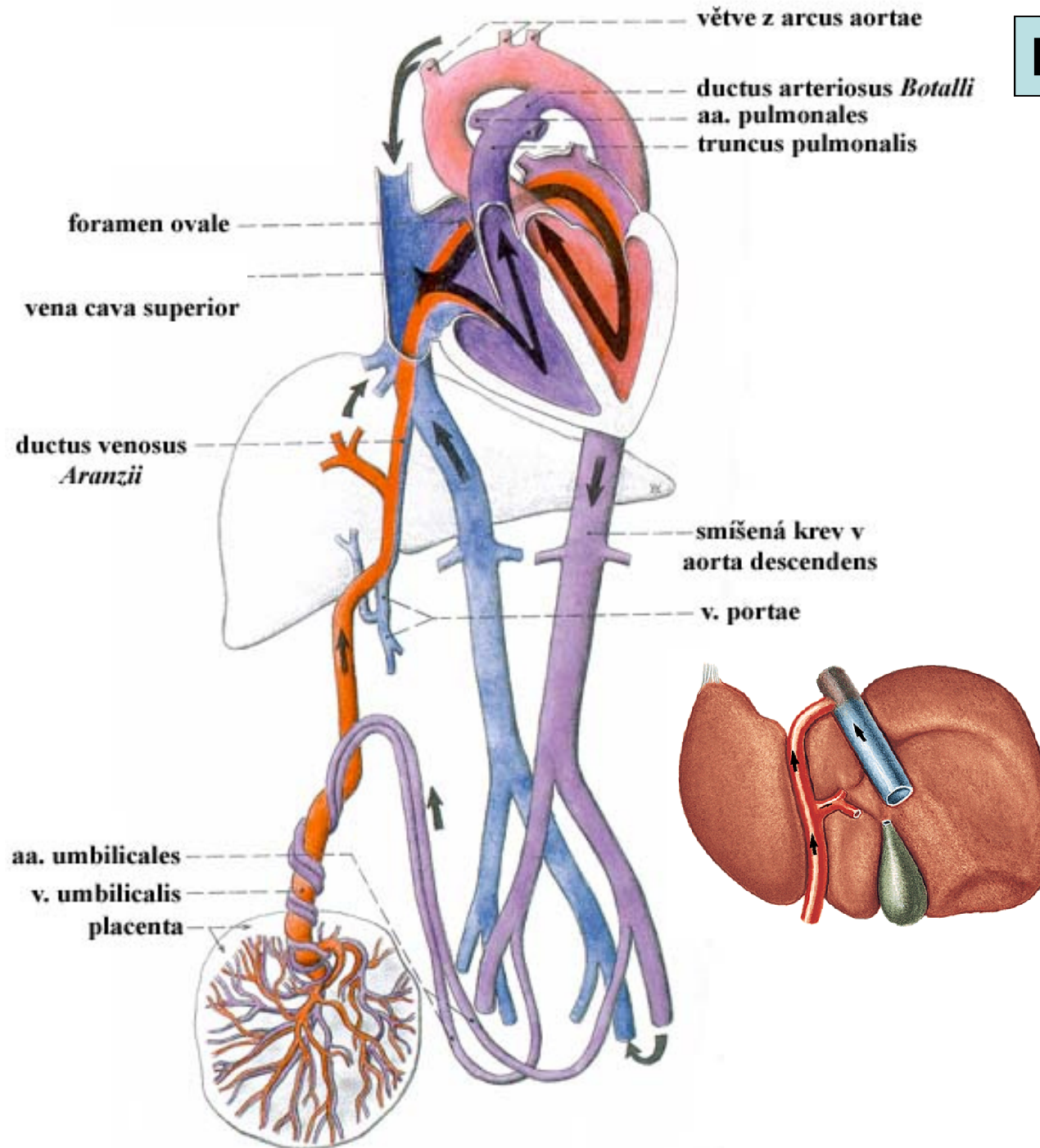
vesicalis

prostaticus (uterovaginalis)

rectalis – v. rectalis sup. (v. portae), med. (v. iliaca int.), inf. (v. pudenda int.)

sacralis

Fetální krevní oběh



v. umbilicalis
(lig. teres hepatis)

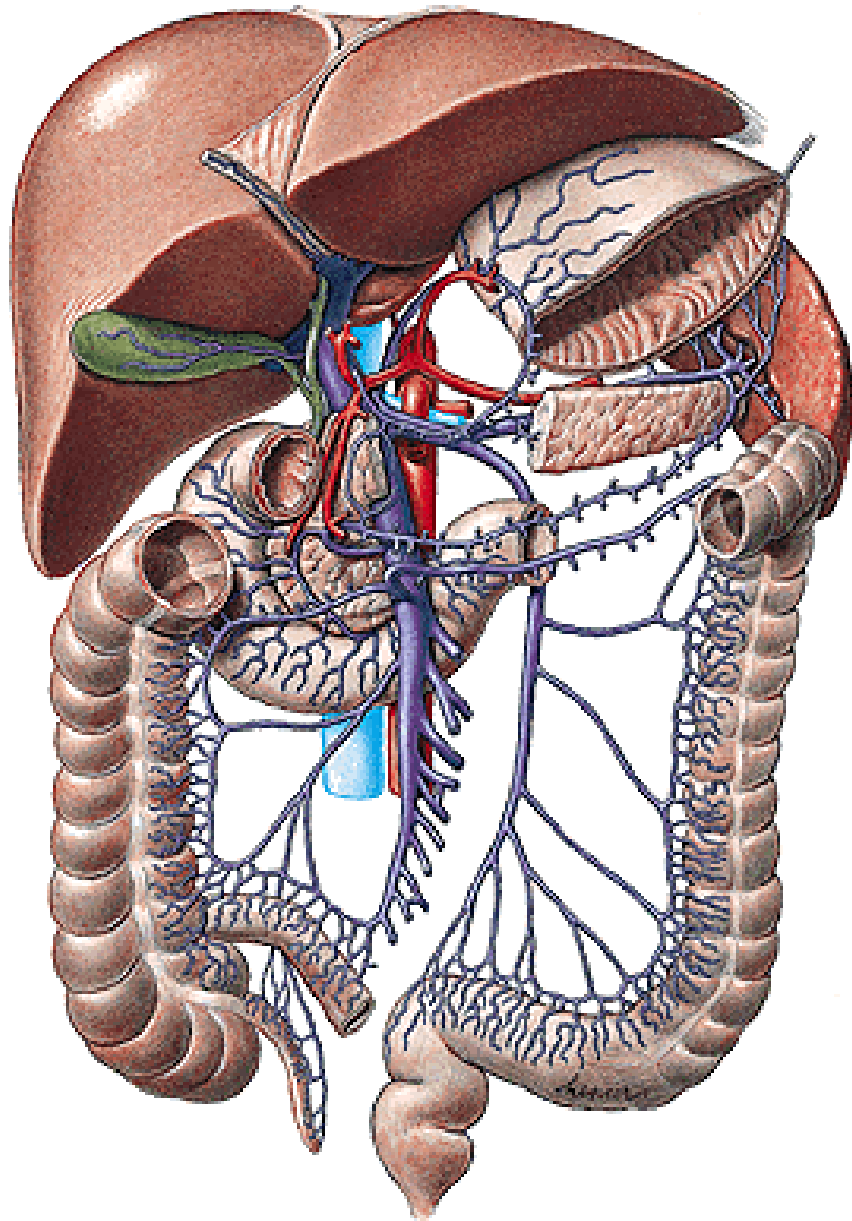
ductus venosus
(lig. venosum)

foramen ovale
(fossa ovalis)

ductus arteriosus
(lig. arteriosum)

aa. umbilicales
(ligg. umbilicalia lat.)

Vena portae



Vena lienalis (v. mesenterica inf.)

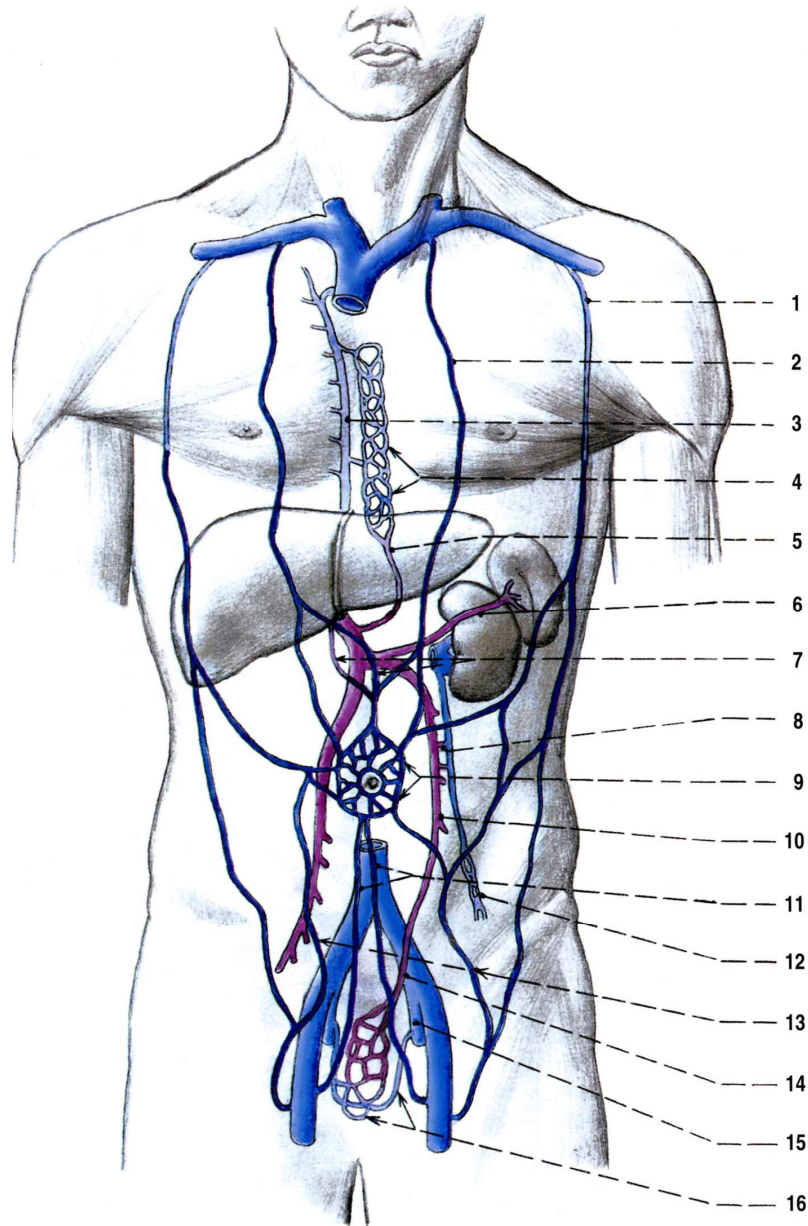
Vena mesenterica sup.

Vena gastrica sin. (vv. oesophageae)

Vena gastrica dx.

Vv. paraumbilicales

Portokavální anastomosisy



1. Jícen

vv. oesophageae - vv. gastricae

2. Caput medusae

vv. thoracoepigastr., epigastricae spf.
- vv. paraumbilicales

3. Plexus rectalis

v. rectalis inf. et media – v. rectalis sup.

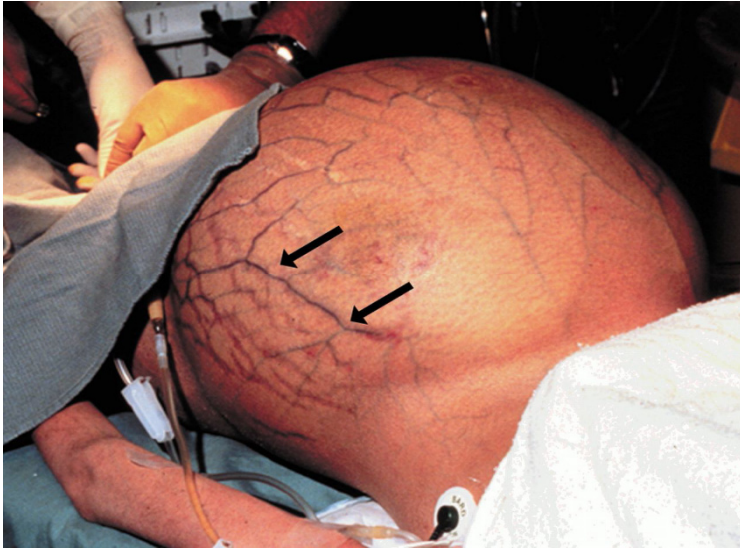
4. Retziusovy spojky

vv. retroperitoneální (vv. renales...)
– vv. intraperitoneální (v. lienalis...)

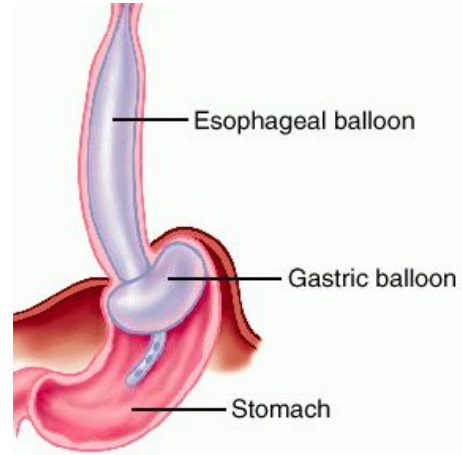
5. Spojky v okolí močového měchýře Burowovy

plexus vesicalis – vv. paraumbilicales

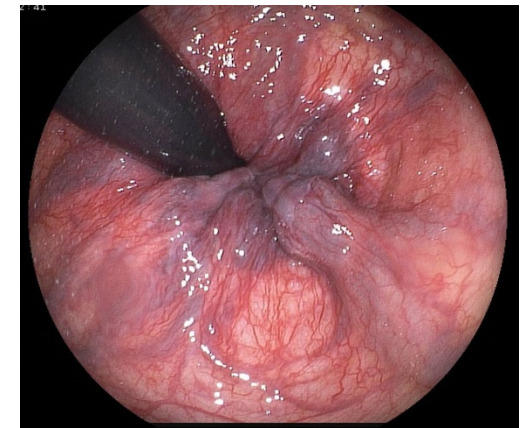
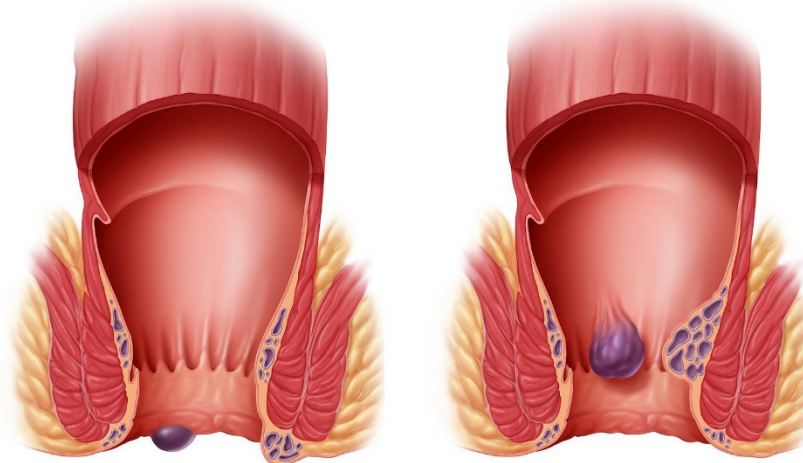
Caput medusae



Varices oesophageales



Varices haemorrhoidales



SYSTEMA LYMPHATICUM

Mízní systém (vasa lymphatica)

Funkce :

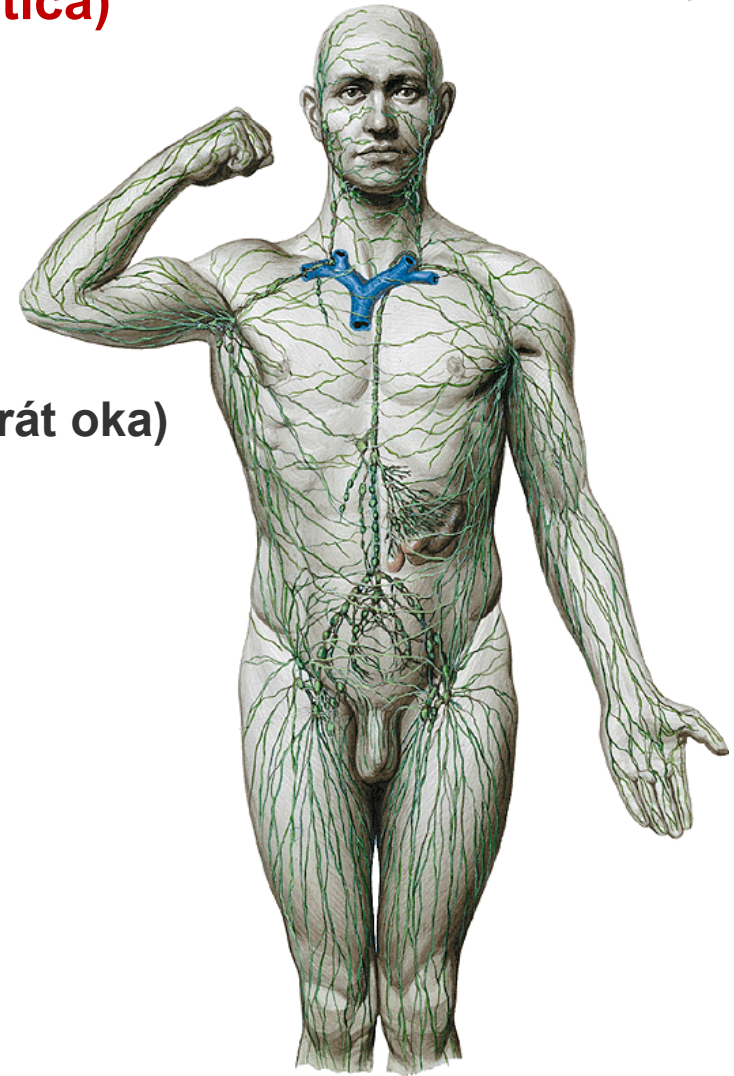
transport makromolekulárních látek do krve

hlavní složka imunitního systému

(chybí – epitel, kost, chrupavka, CNS, optický aparát oka)

Stavba:

- míza (lymph) 1,5-2l denně
- mízní cévy (vasa lymphatica)
- mízní uzliny (nodi lymphatici)
- lymfatické orgány (tonsillae, lien, thymus)



Mízní cévy (vasa lymphatica)

kapiláry (vasa lymphocapillaria)

mízní síť (rete lymphocapillare)

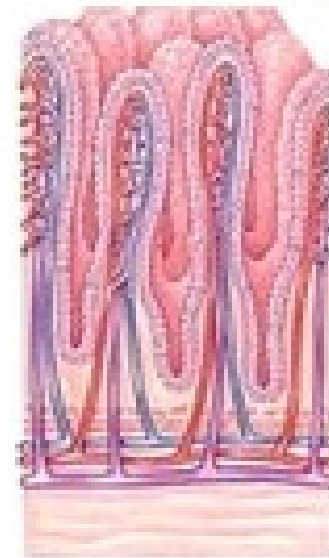
sběrné cévy (collectores lymphatici)

mízní pleteně (plexus lymphatici)

kmeny (trunci lymphatici)

vasa lymphatica profunda

vasa lymphatica superficialia

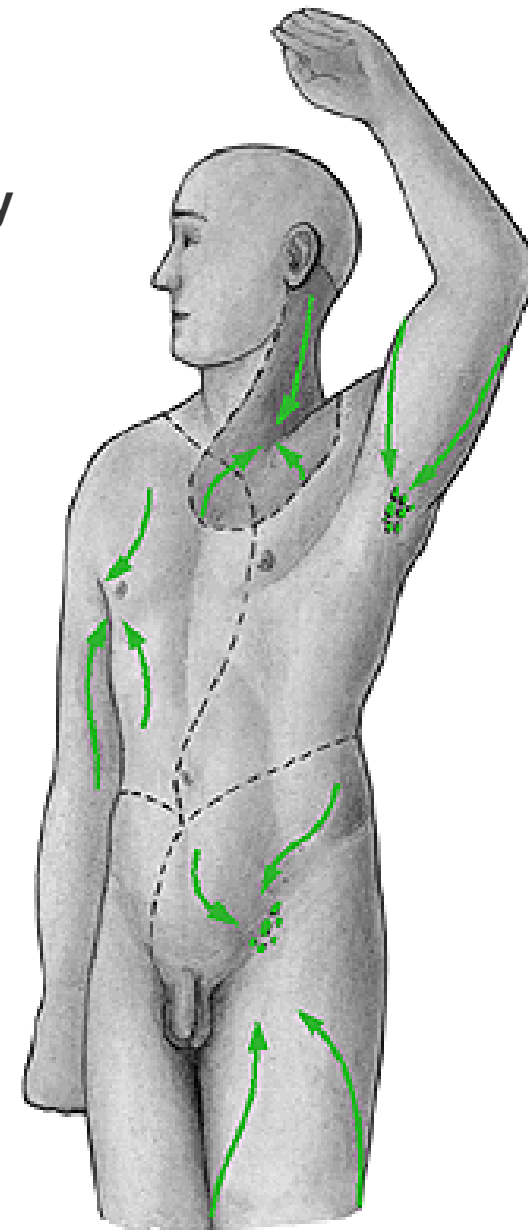
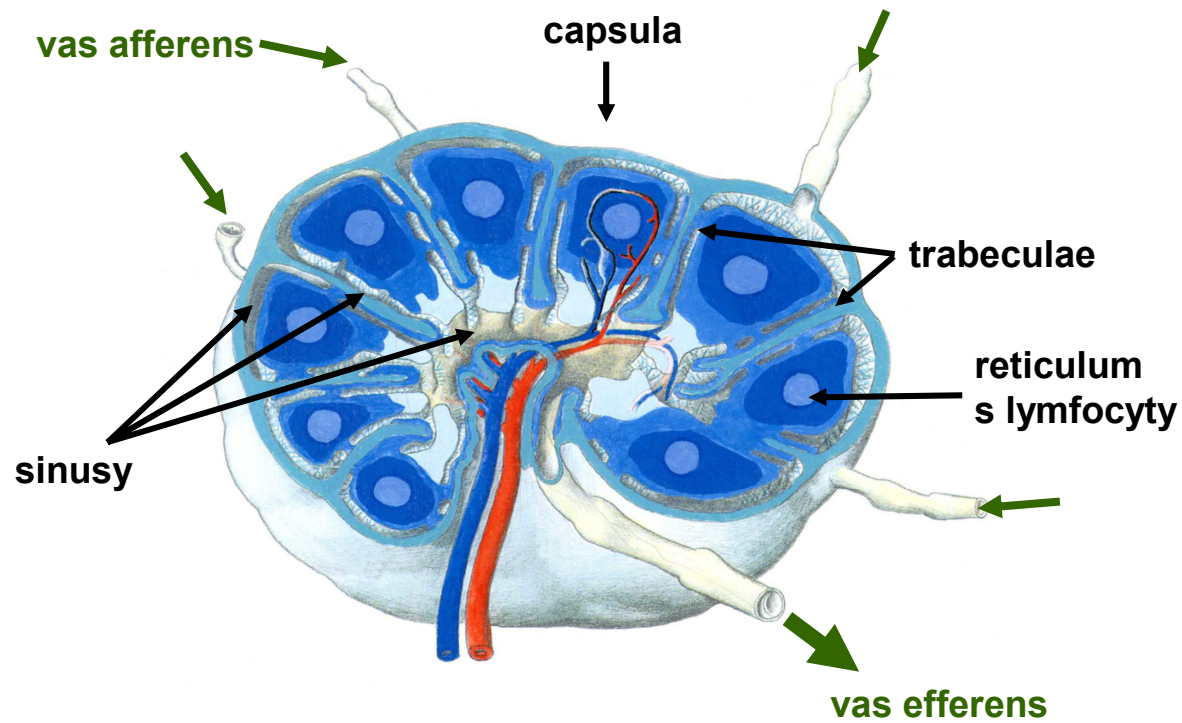


Mízní uzliny (nodi lymphatici)

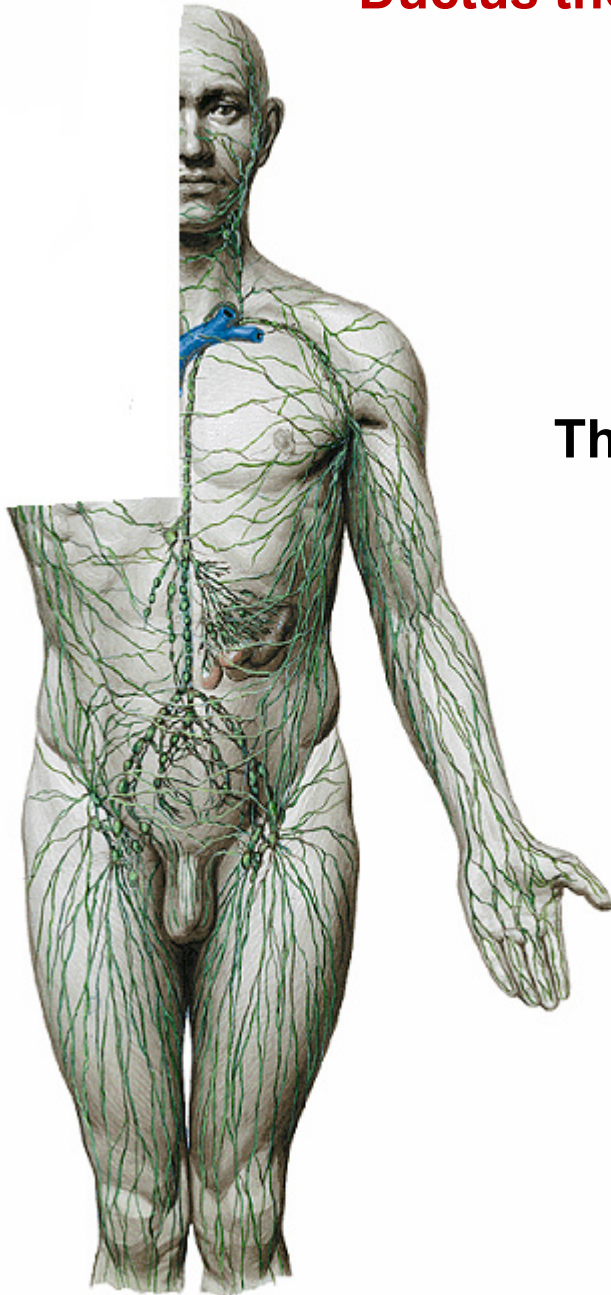
Sentinelova uzlina

Regionální mízní uzliny

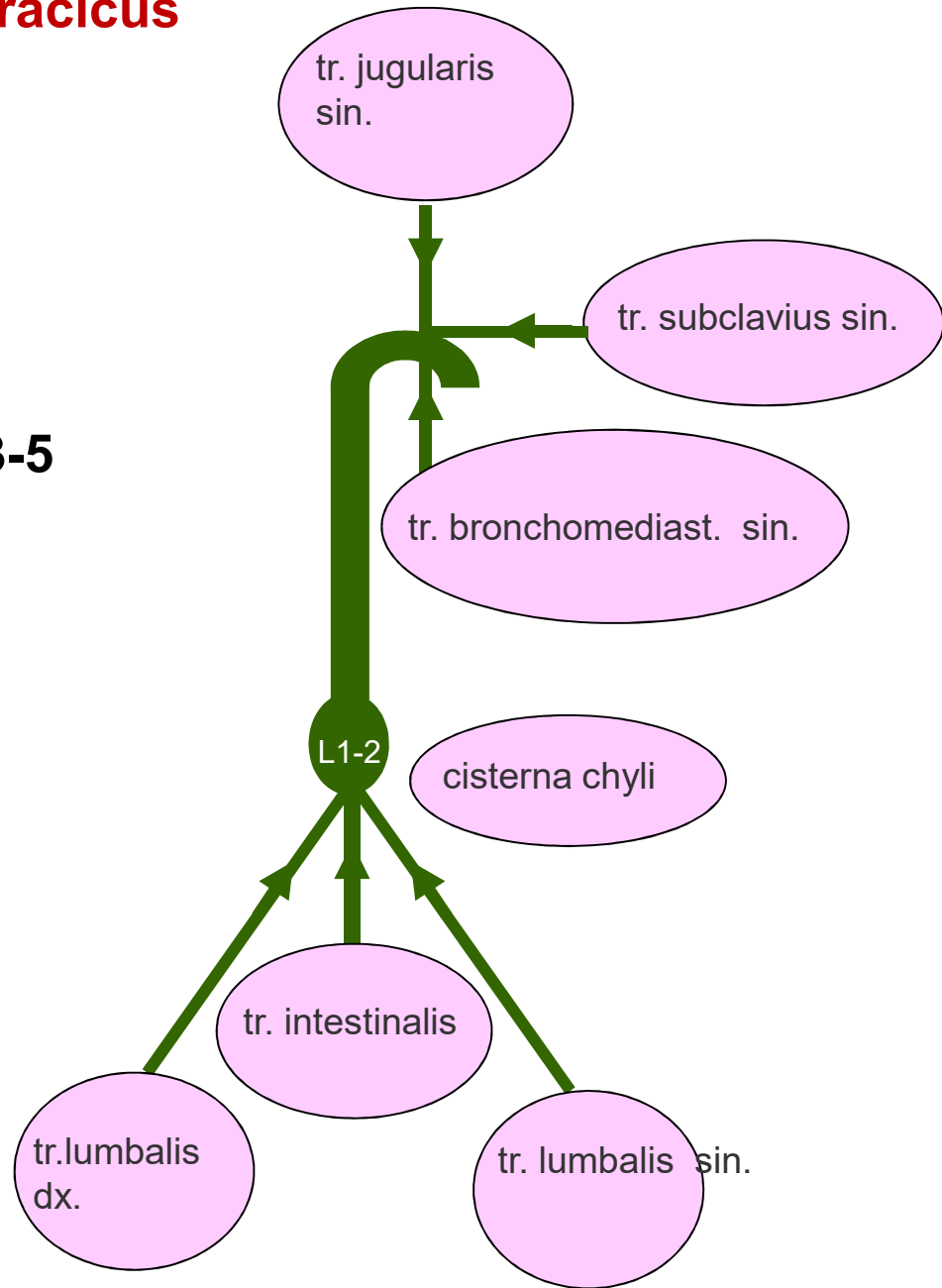
Tributární oblast



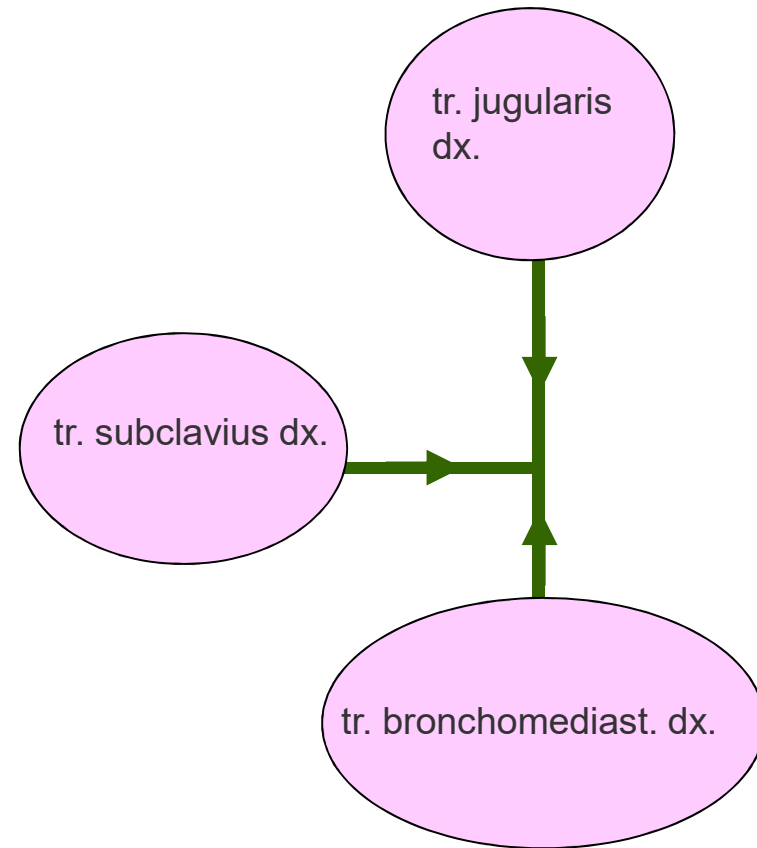
Ductus thoracicus



Th3-5



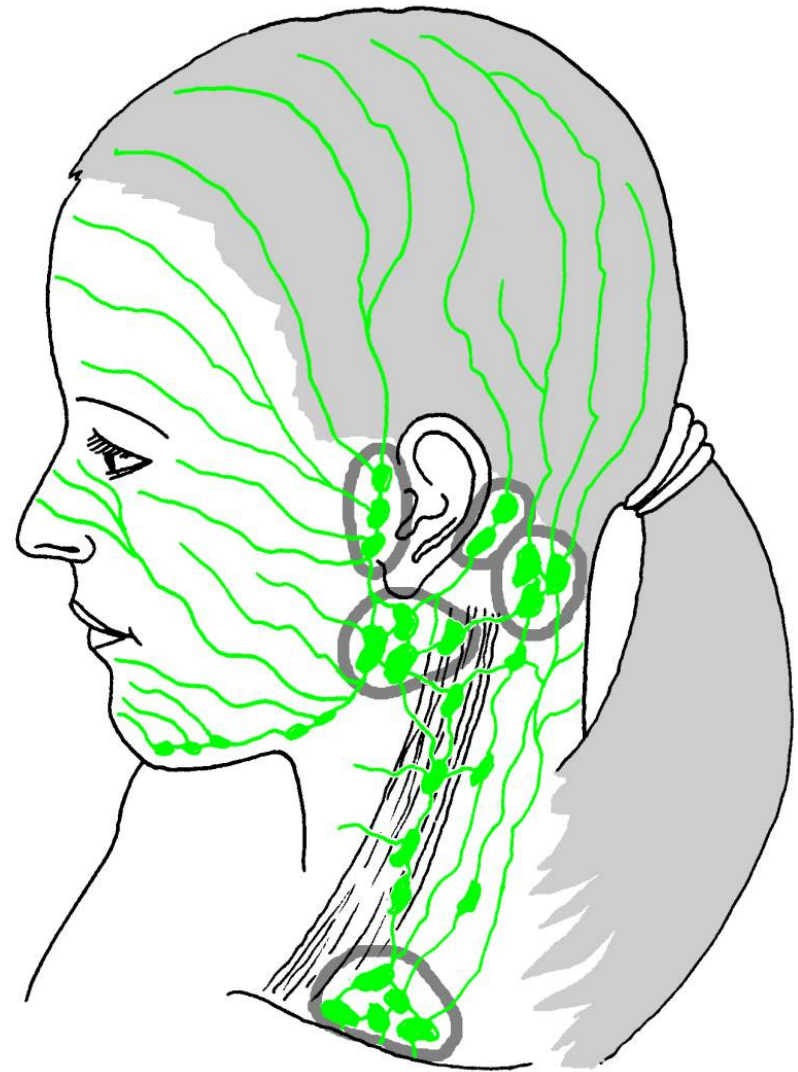
Ductus lymphaticus dx.



- **nodi lymphatici occipitales**
- **nodi lymphatici retroauriculares**
- **nodi lymphatici parotidei**
- **nodi lymphatici submandibulares**
- **nodi lymphatici submentales**
- **nodi lymphatici retropharyngei**



nll. cervicales superficiales
nll. cervicales profundi



Nodi lymphatici cervicales

- **superficiales**

 - podél vena jugularis externa

 - podél v. jugularis ant.

- **profundi**

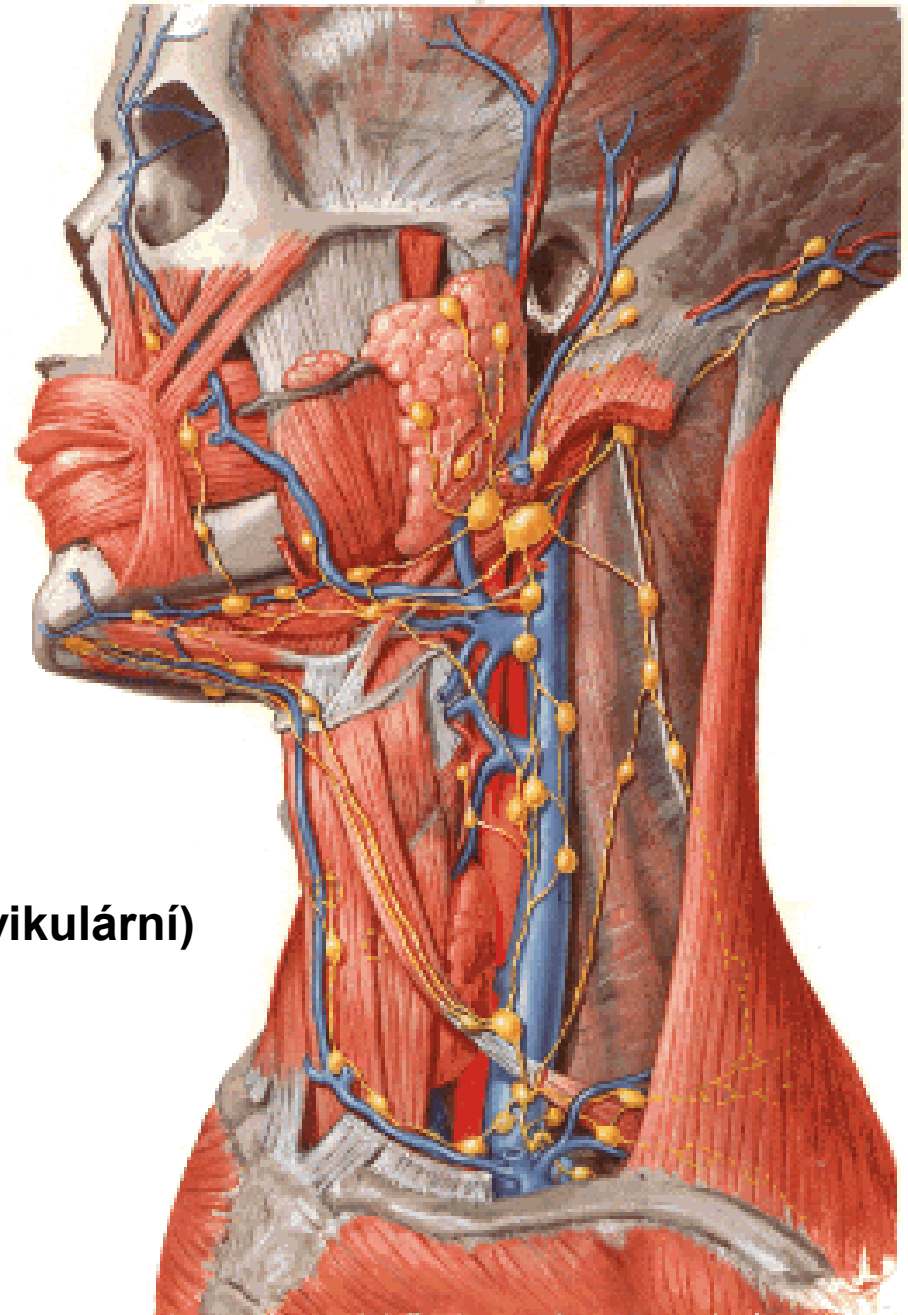
 - podél vena jugularis interna

 - podél nervus accesorius

 - podél vasa transversa coli (supraklavikulární)

 - (Wirchovova uzlina)

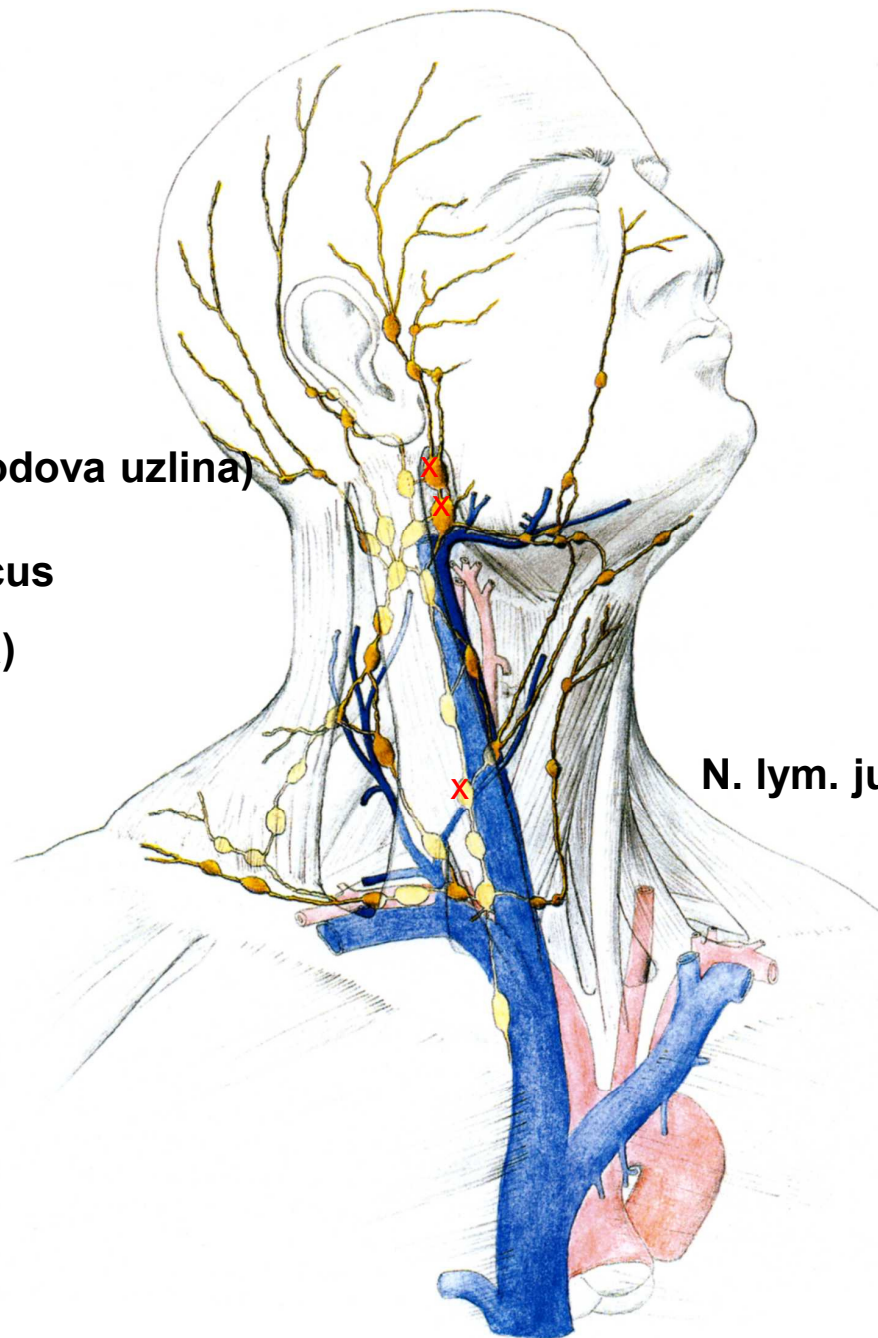
 - kolem laryngu, trachey, štítné žlázy



N. lym. tonsilaris (Woodova uzlina)

**N. lym. jugulodigastricus
(Kütnerova uzlina)**

N. lym. juguloomohyoideus



Mízní cévy horní končetiny

Rete cutaneum spf., prof.

- povrchové kolektory

přední

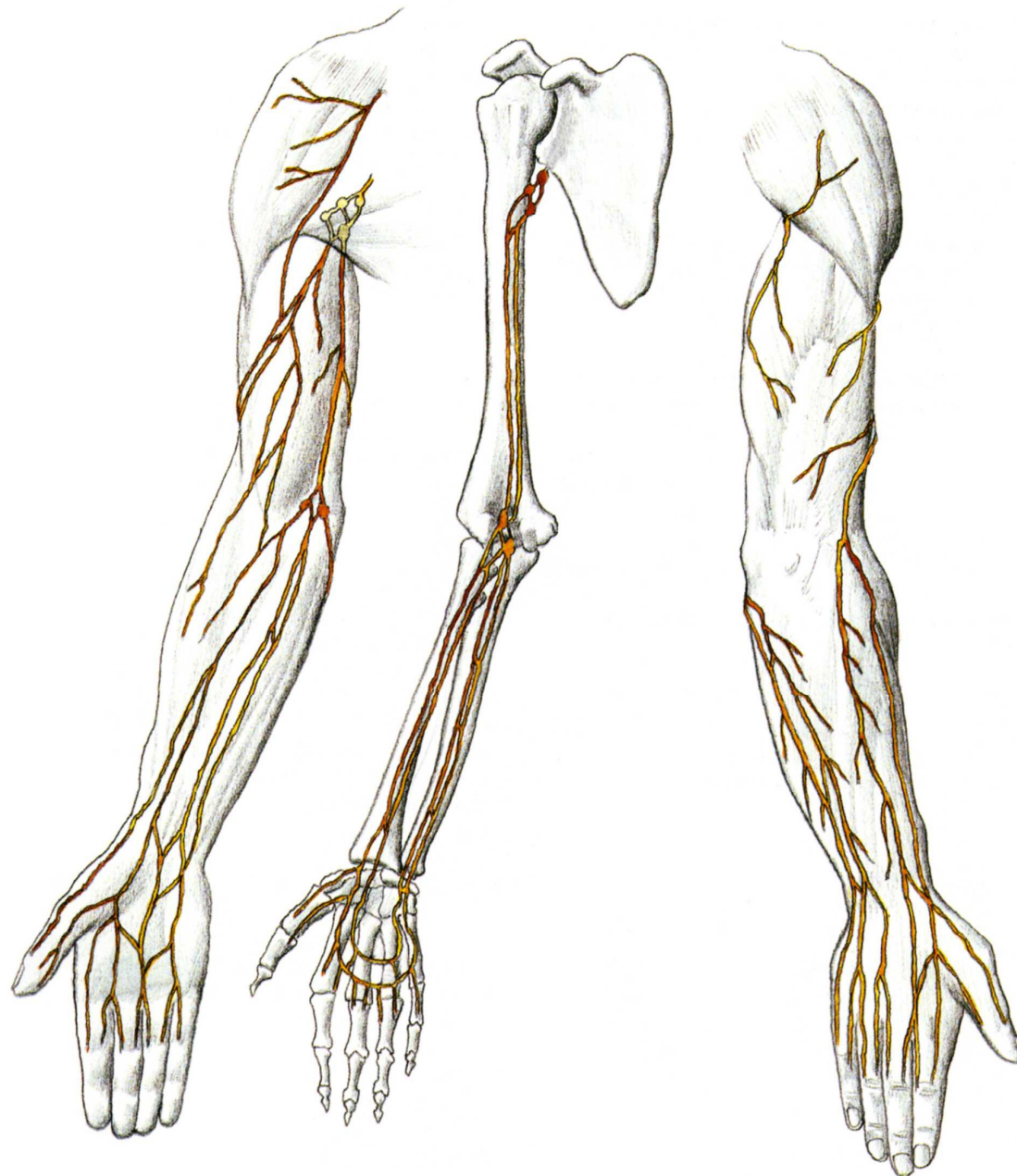
laterální

mediální

n.l. cubitales superf.

- hluboké cévy

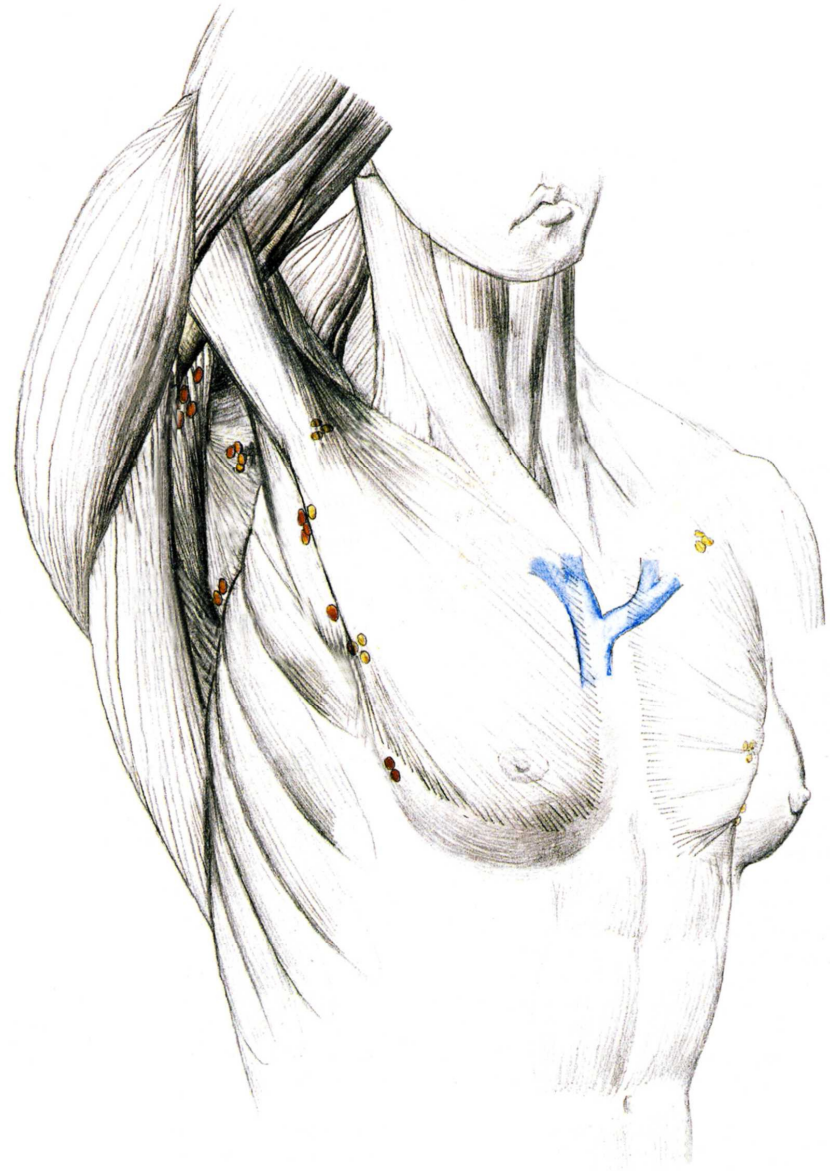
n.l. cubitales prof.
n.l. axillares



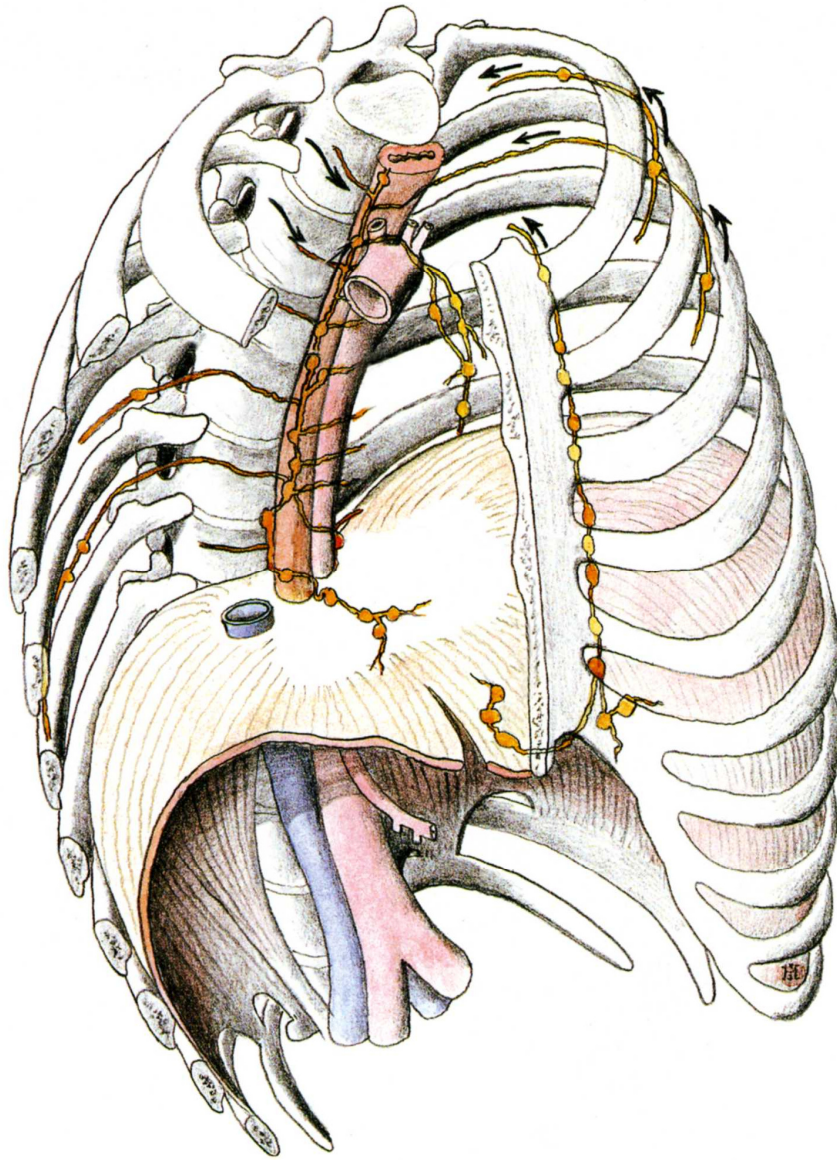
Nodi lymphatici. axillares

- n.l. laterales (brachiales)
- n.l. subscapulares
- n.l. pectorales (n.l. interpectoriales)
Sorgiusova uzlina
- n.l. centrales
- n.l. apicales

truncus subclavius



Mízní cévy hrudníku



Parietální nodi lymphatici:

phrenici sup.

parasternales

intercostales

tr. lymphaticus dx.

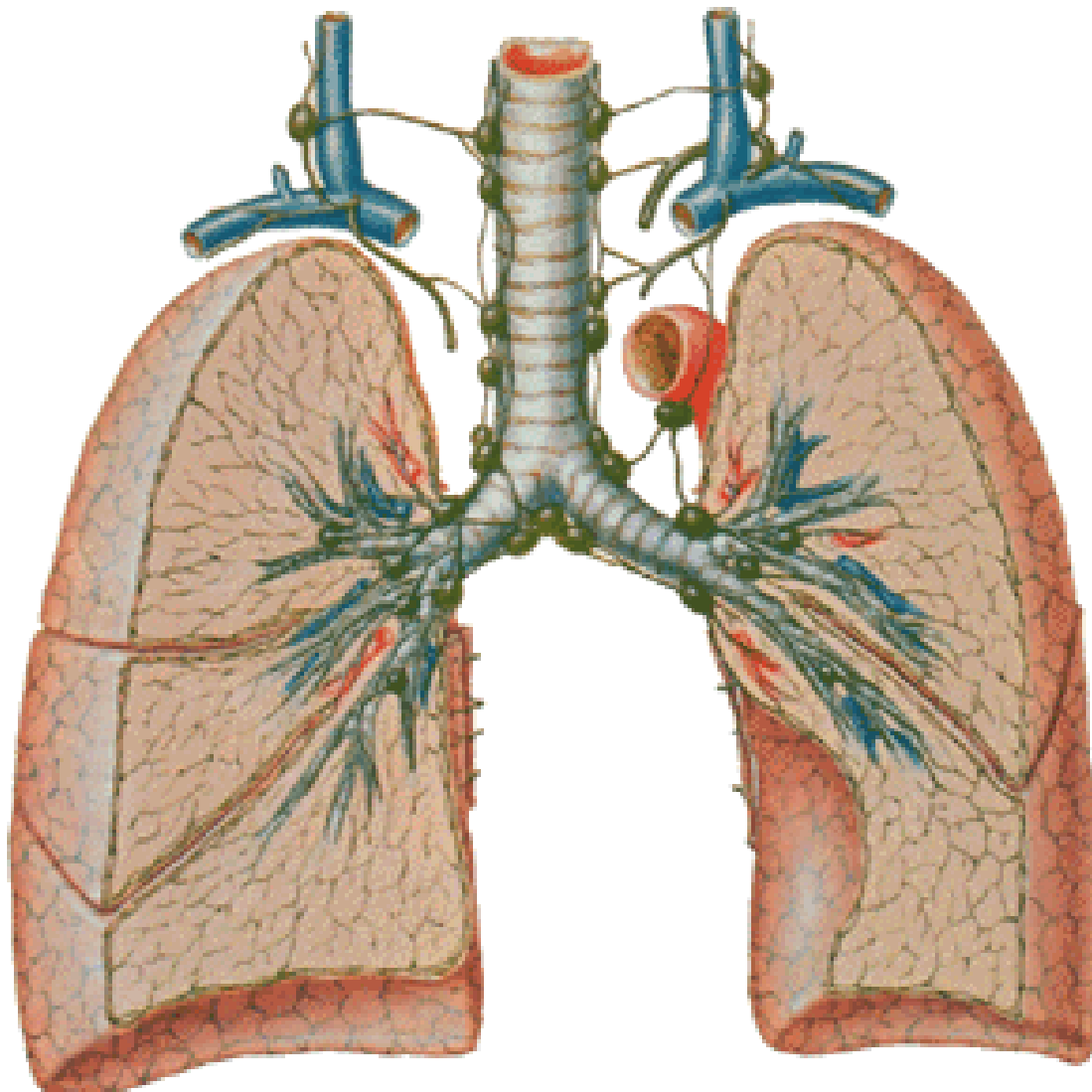


tr. bronchomed. dx.

ductus thoracicus



tr. bronchomed. sin.



pulmonales

bronchopulmonales

bronchiales

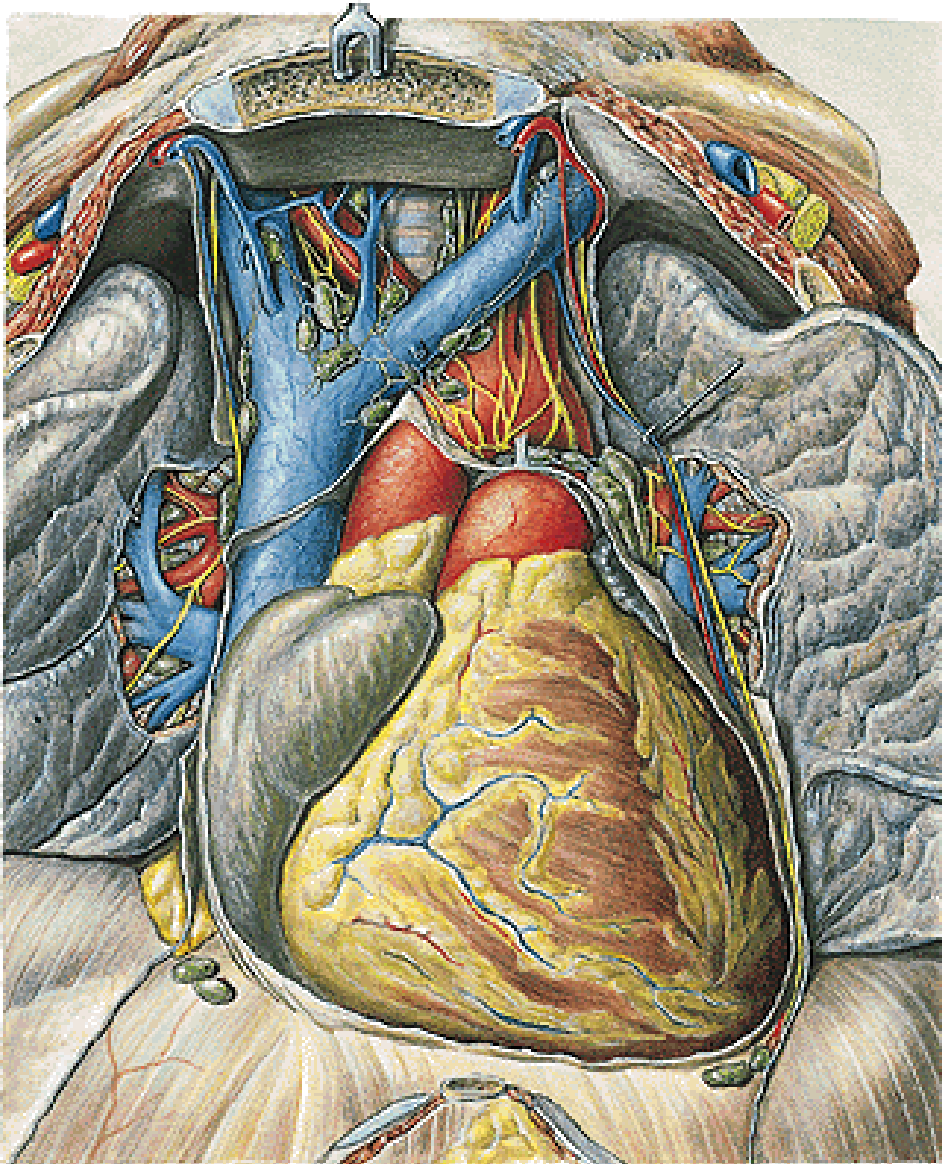
tracheobronchiales sup., inf.

tracheales

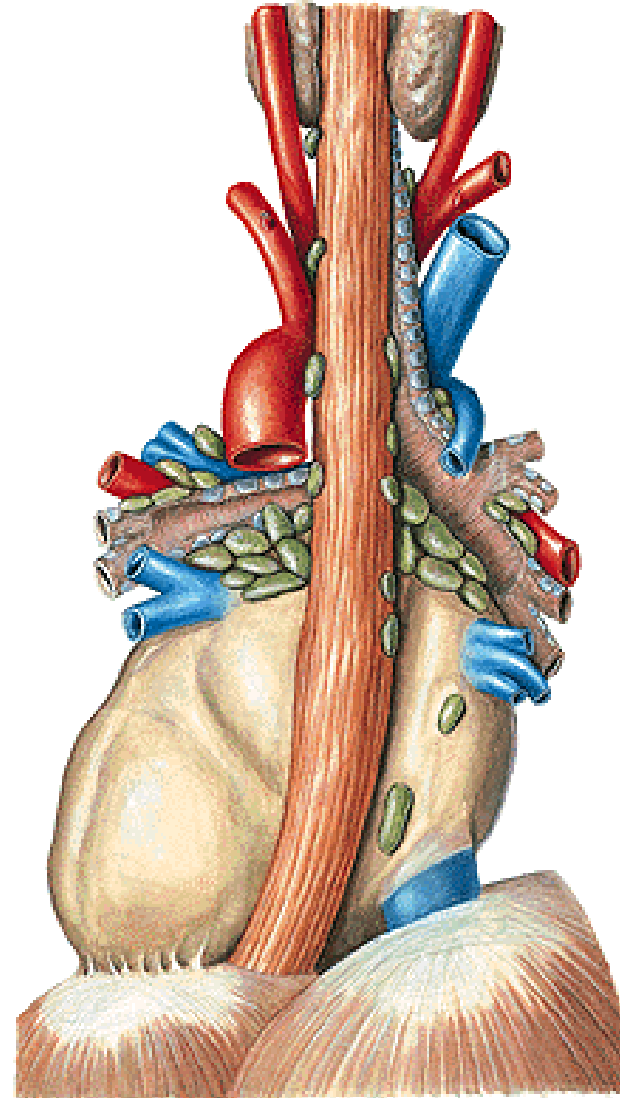
mediastinales ant.

mediastinales posteriores

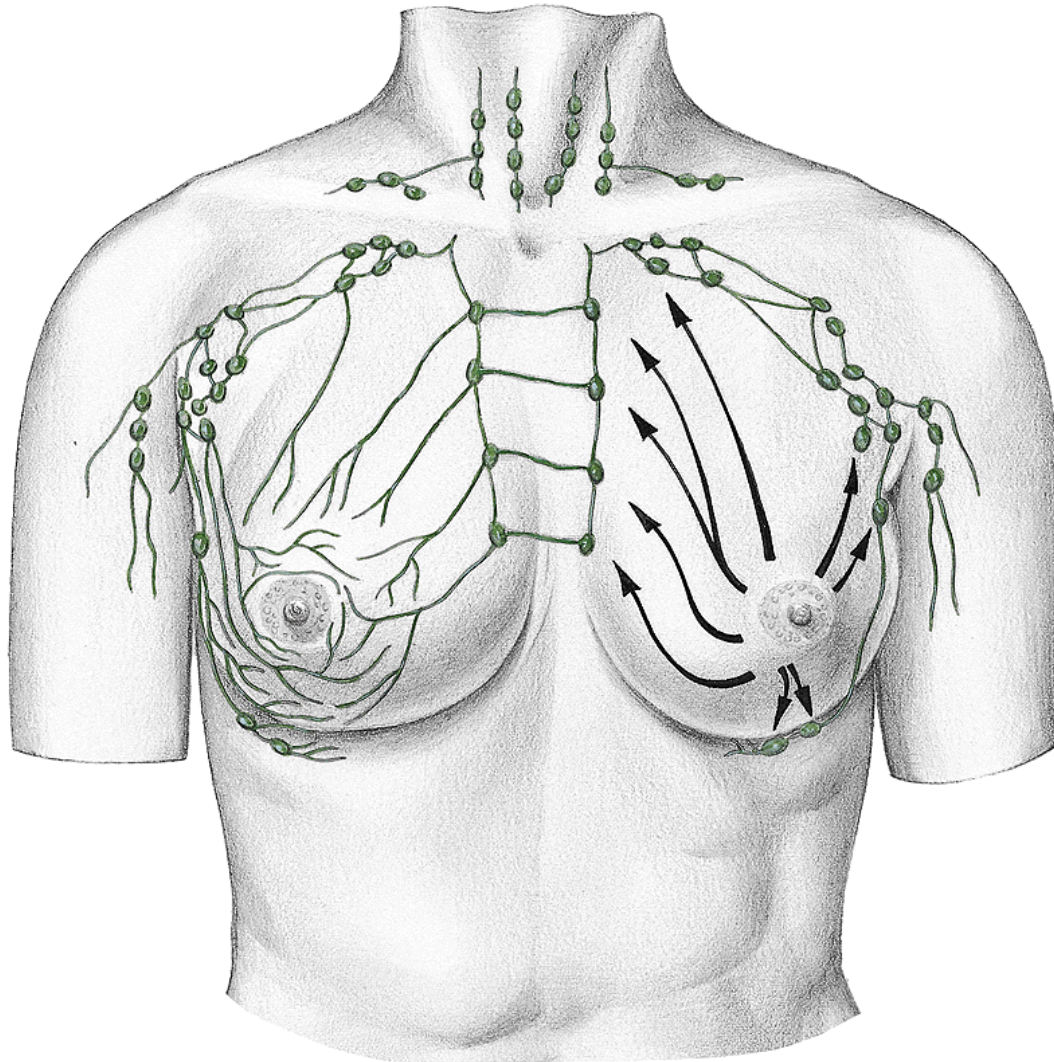
**mediastinales anteriores
(podél n. phrenicus, horní a
střední mediastinum)**



**mediastinales
posteriores
(zadní mediastinum)**



LYMFATICKÁ DRENÁŽ PRSU



nll. axillares

(Sorgiusova uzlina)

nll. parasternales

nll. supraclaviculares

nll. intercostales

nll. mediastinales ant.

Mízní cévy dolní končetiny

- **povrchové kolektory**

mediální

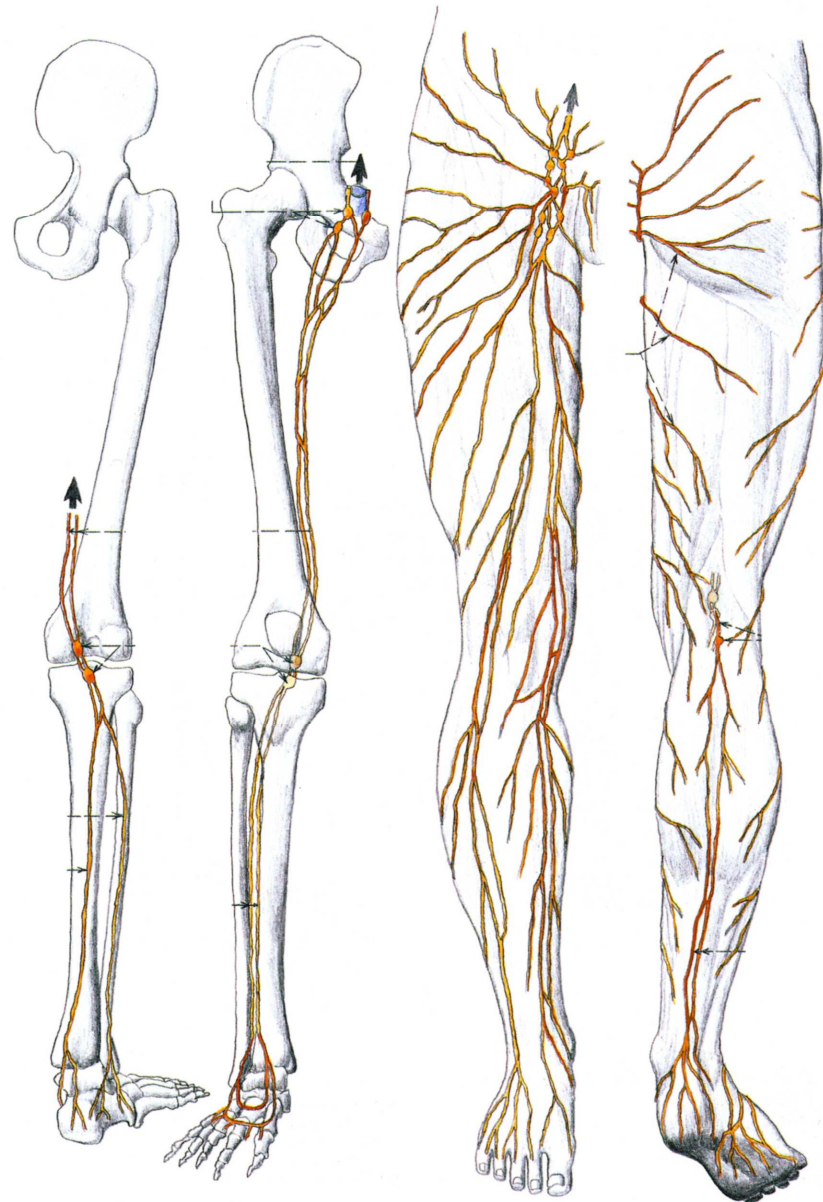
laterální

zadní

n.l. poplitei superf.
n.l. inguinales superf.

- **hluboké cévy**

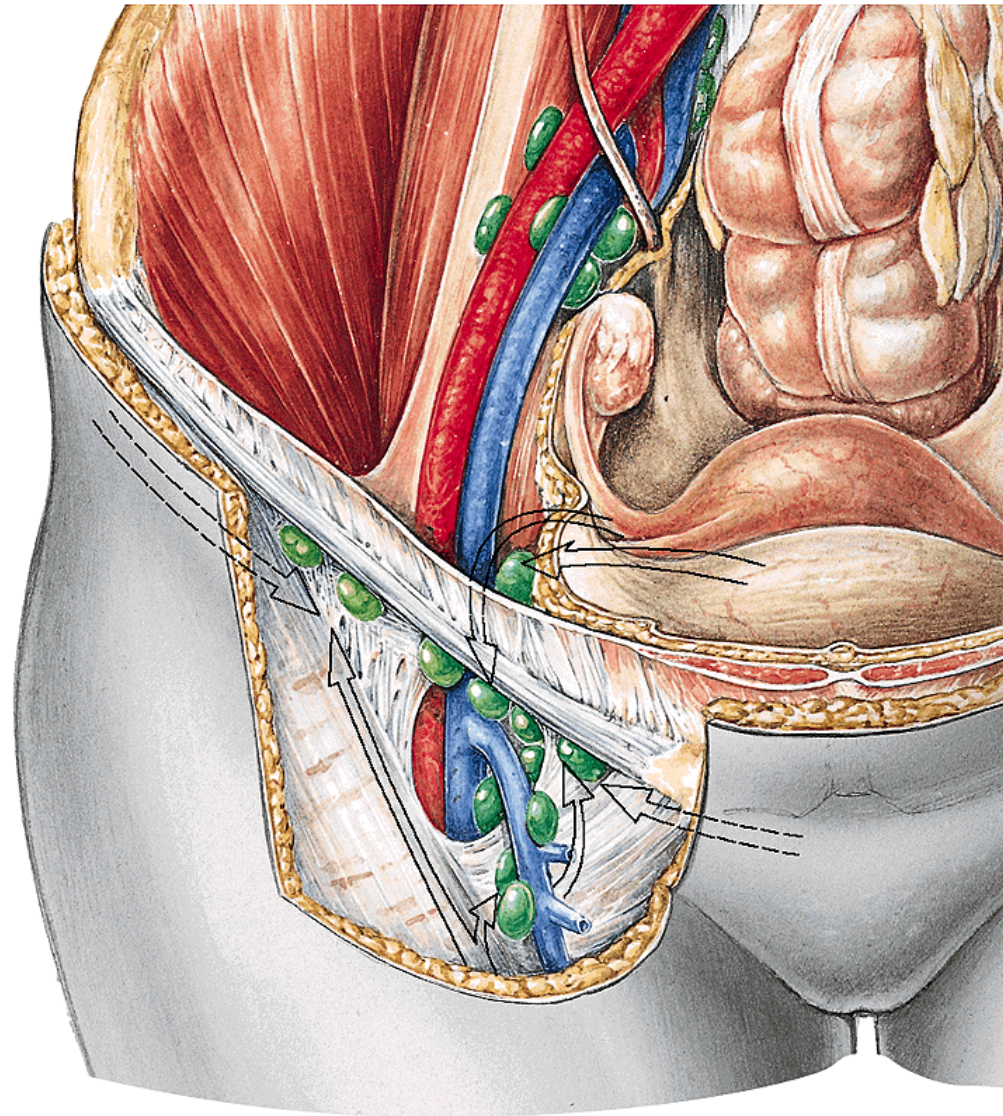
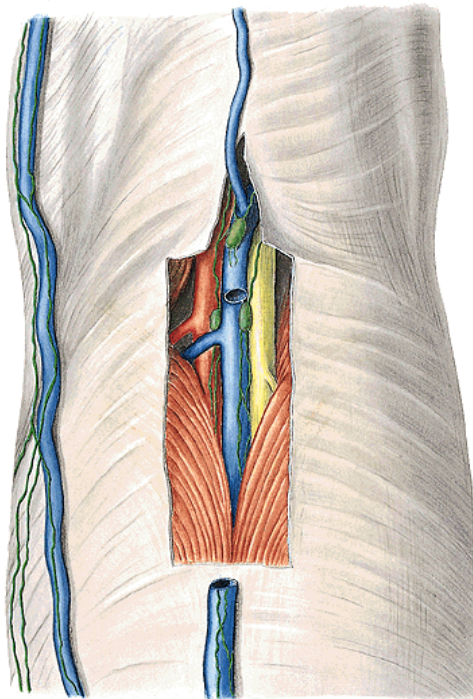
n.l. poplitei prof.
n.l. inguinales prof.



Nll. poplitei prof., spf.

Nll. inguinales spf.

**Nll. inguinales prof.
(Cloquetova uzlina)**



Mízní uzliny břišní dutiny

nodi lymphatici iliaci (comm.)



nodi lymphatici lumbales

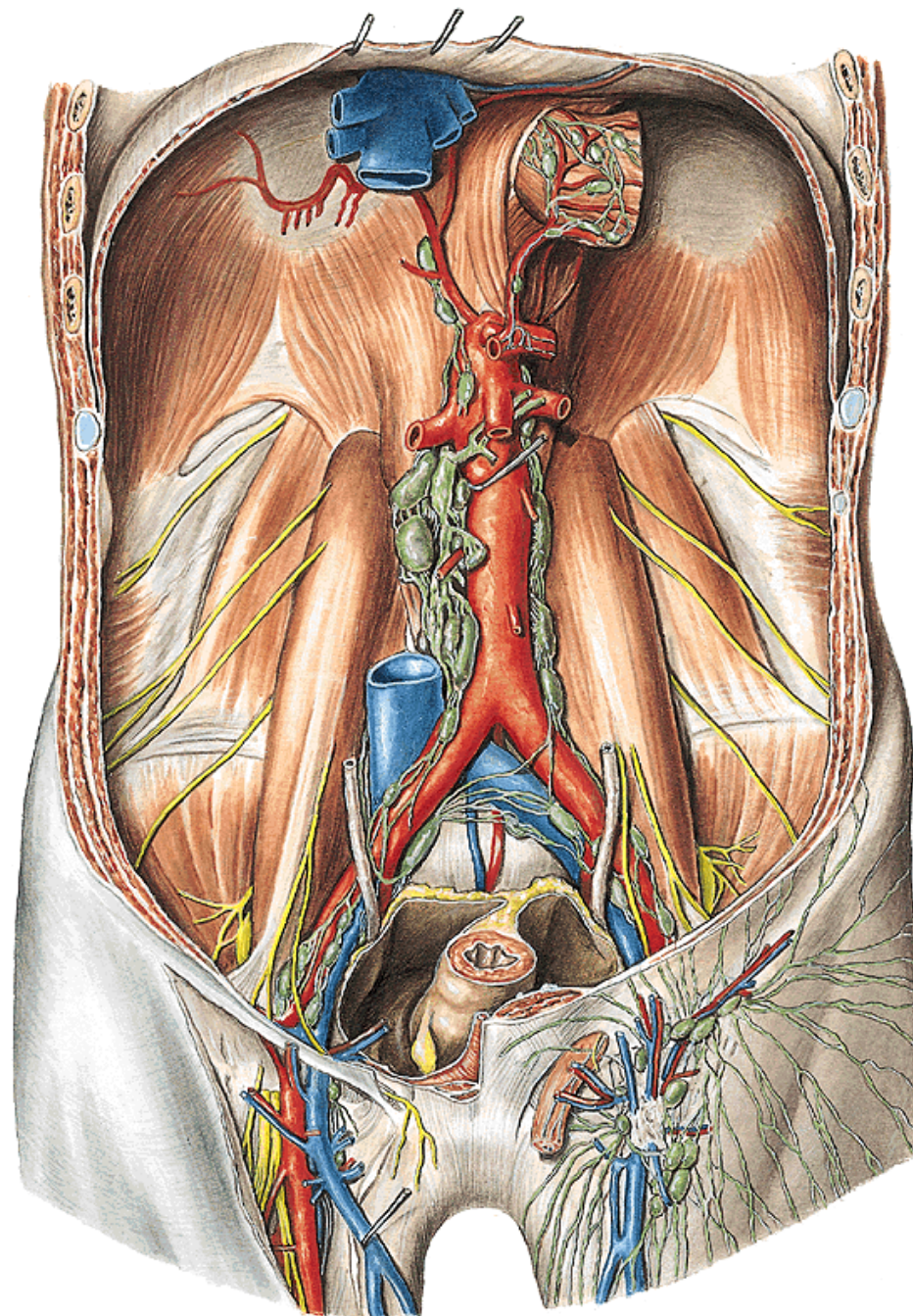
(paraaortales - podél aorta abd., v.
cava inf.)

parietální

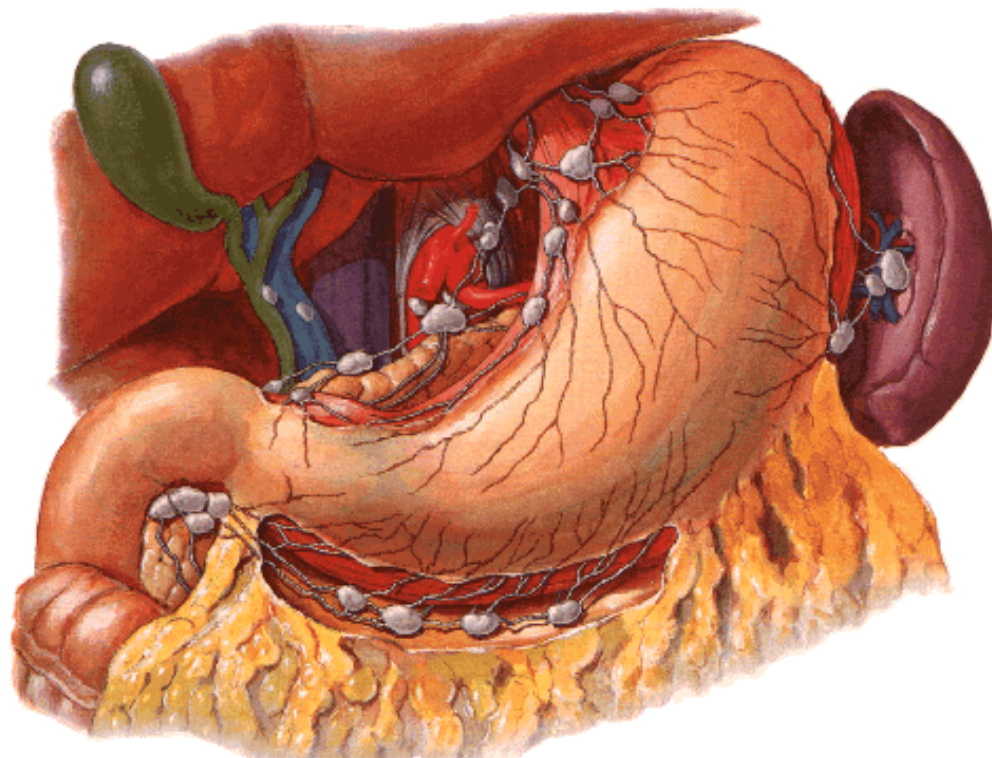
viscerální z párových orgánů



truncus lumbalis dx. et sin.



Mízní uzliny z nepárových orgánů dutiny břišní

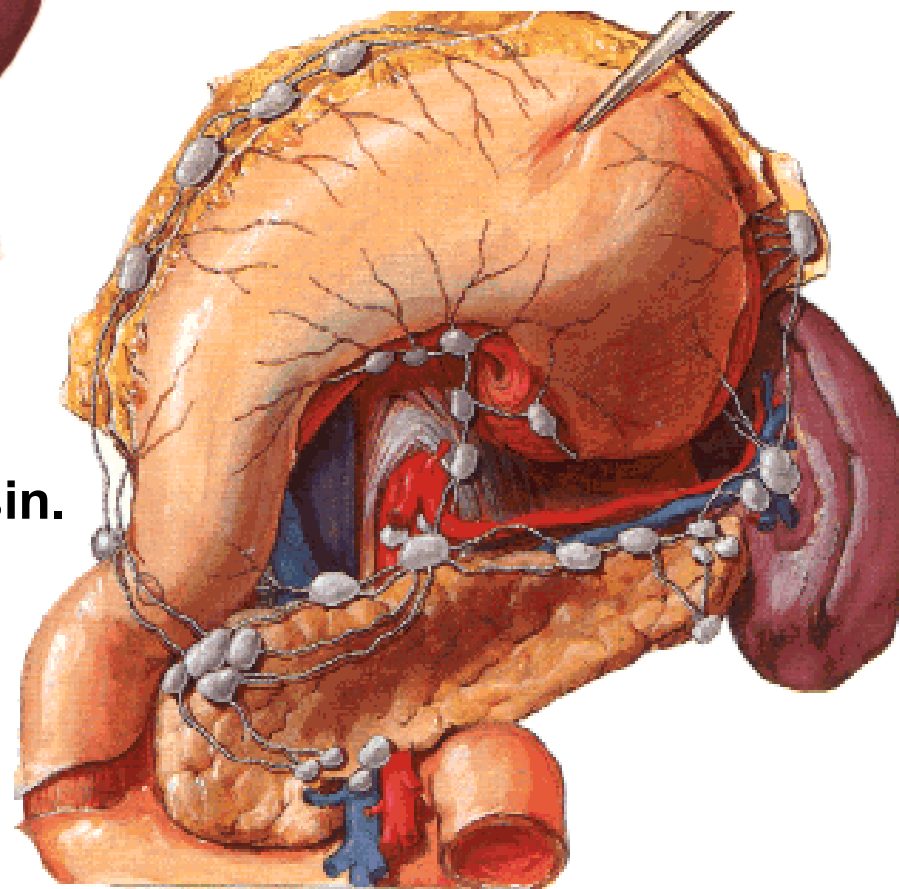


- gastrici dx.,sin., gastroepiploici dx., sin.
- hepatici
- pancreaticoduodenales, pancreatici
- lienales

truncus intestinalis



nodi lymphatici coeliaci



Mízní uzliny z nepárových orgánů dutiny břišní

Nll. mesenterici sup.

Nll. ileocolici

Nll. colici dx.

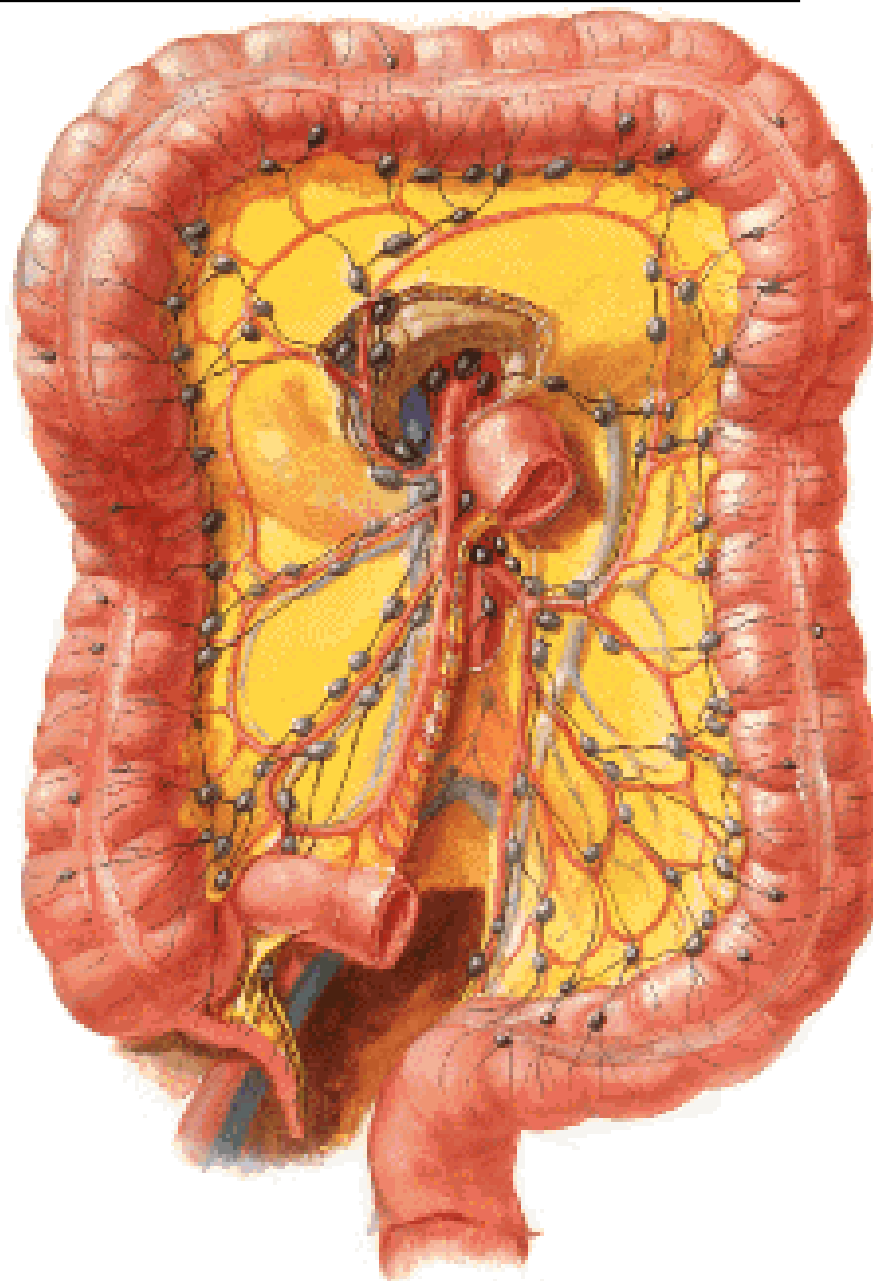
Nll. colici medii

Nll. mesenterici inf.

Nll. colici sinistri

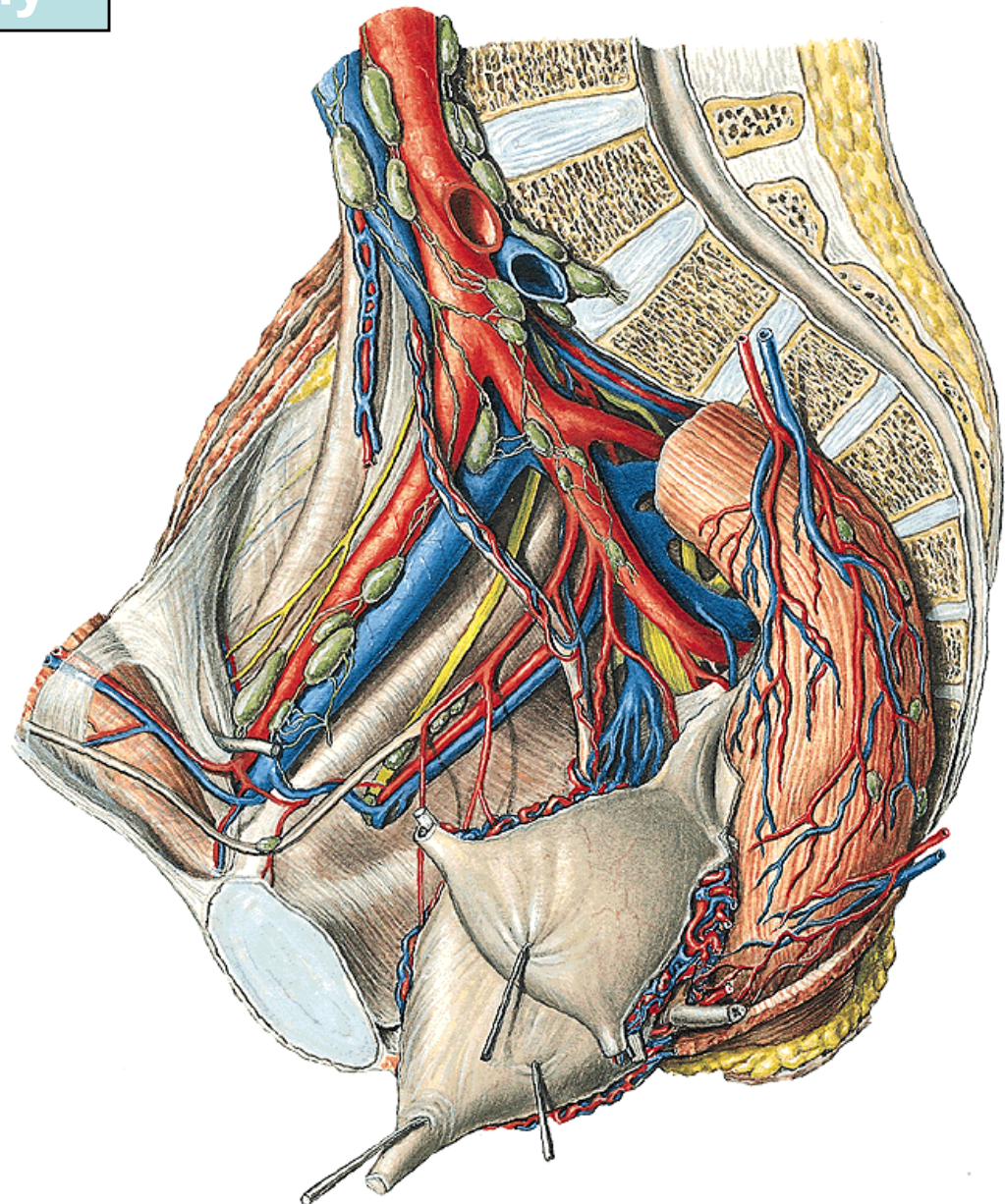
Nll. sigmoidei

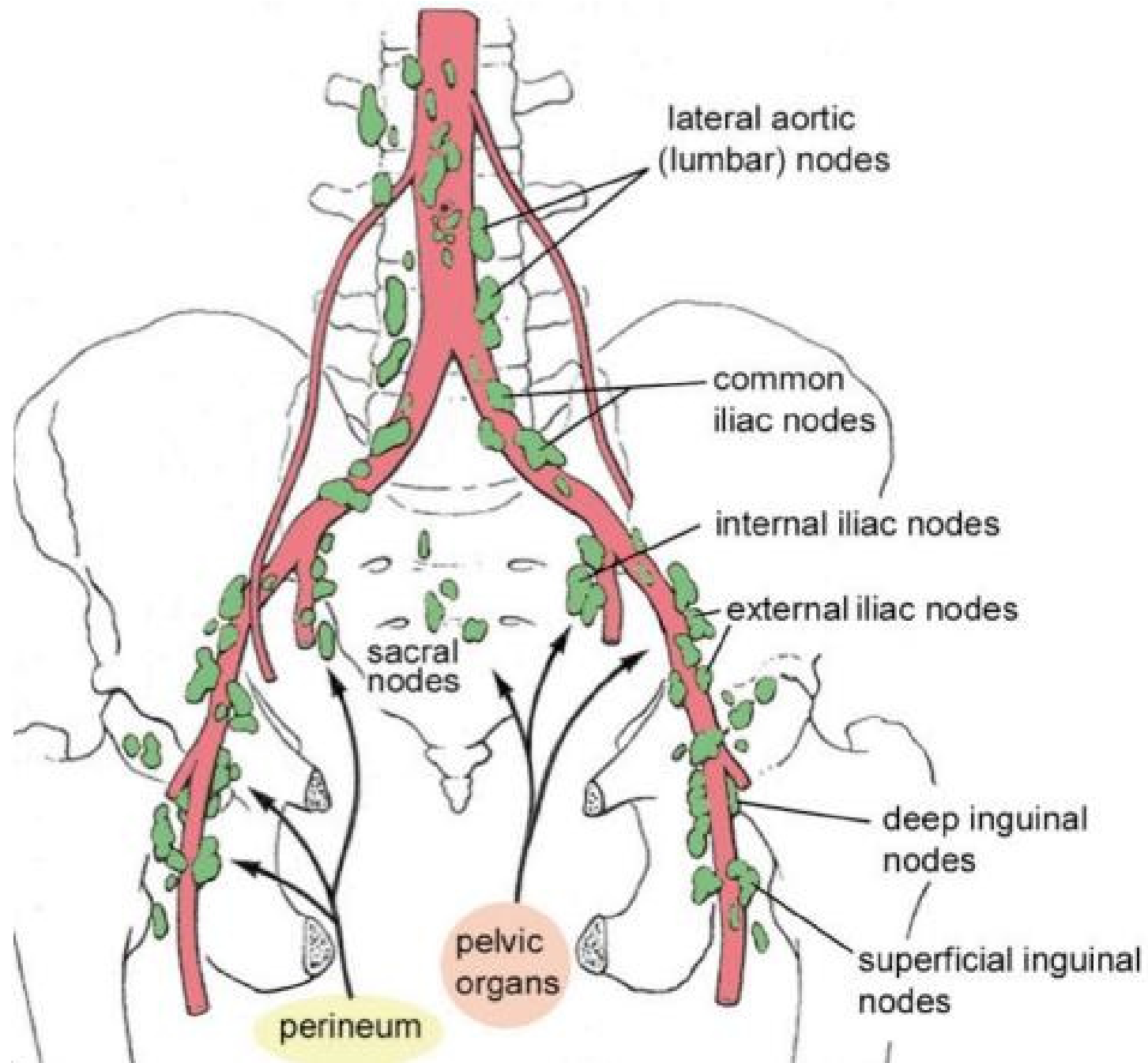
Nll. rectales sup.



Mízní uzliny pánevní dutiny

- **nodi lymphatici iliaci (externi)**
- **nodi lymphatici iliaci interni**
 - parietální - sacrales**
 - viscerální - paravesicales**
 - parauterini**
(Bayerova uzlina)
 - paravaginales**
(paraprostatici)
 - pararectales**





Lymfografie



Použité materiály

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