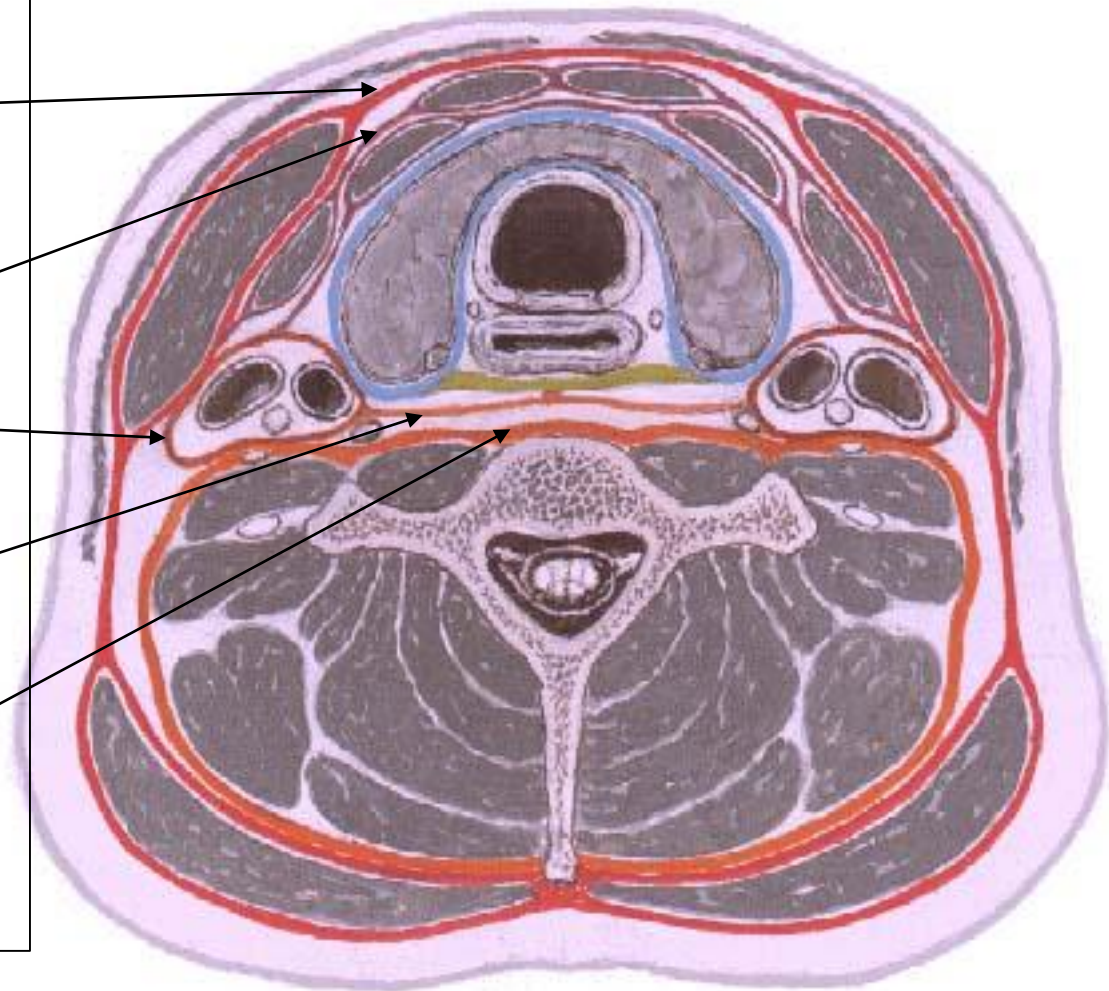
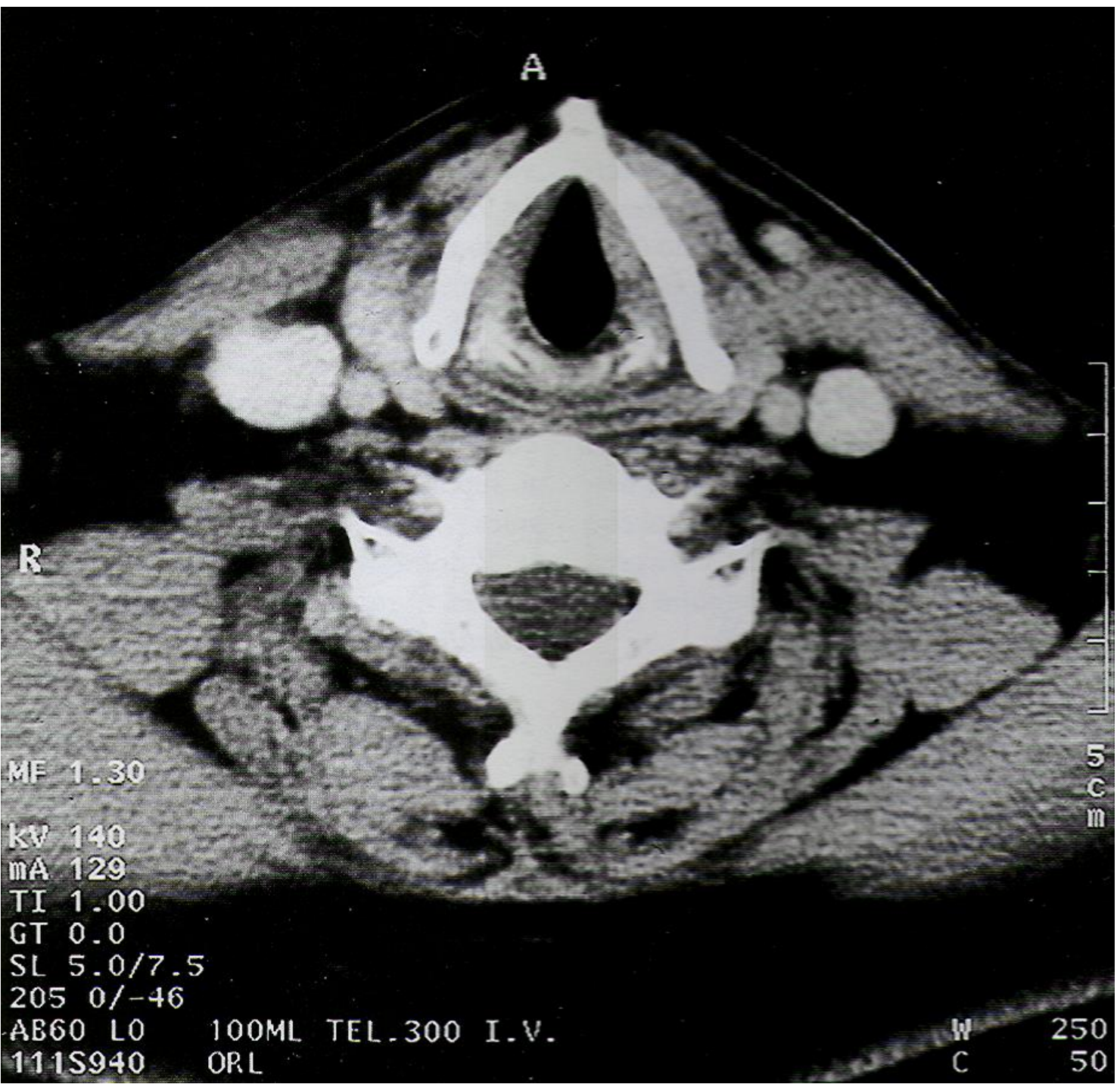


Fascia cervicalis – 3 listy

- lamina superficialis
- lamina pretrachealis
 - vagina carotica
- (fascia intercarotica/alaris)
- lamina prevertebralis





A

R

MF 1.30

kV 140

mA 129

TI 1.00

GT 0.0

SL 5.0/7.5

205 0/-46

AB60 LO

100ML TEL.300 I.V.

111S940

ORL

W 250

C 50

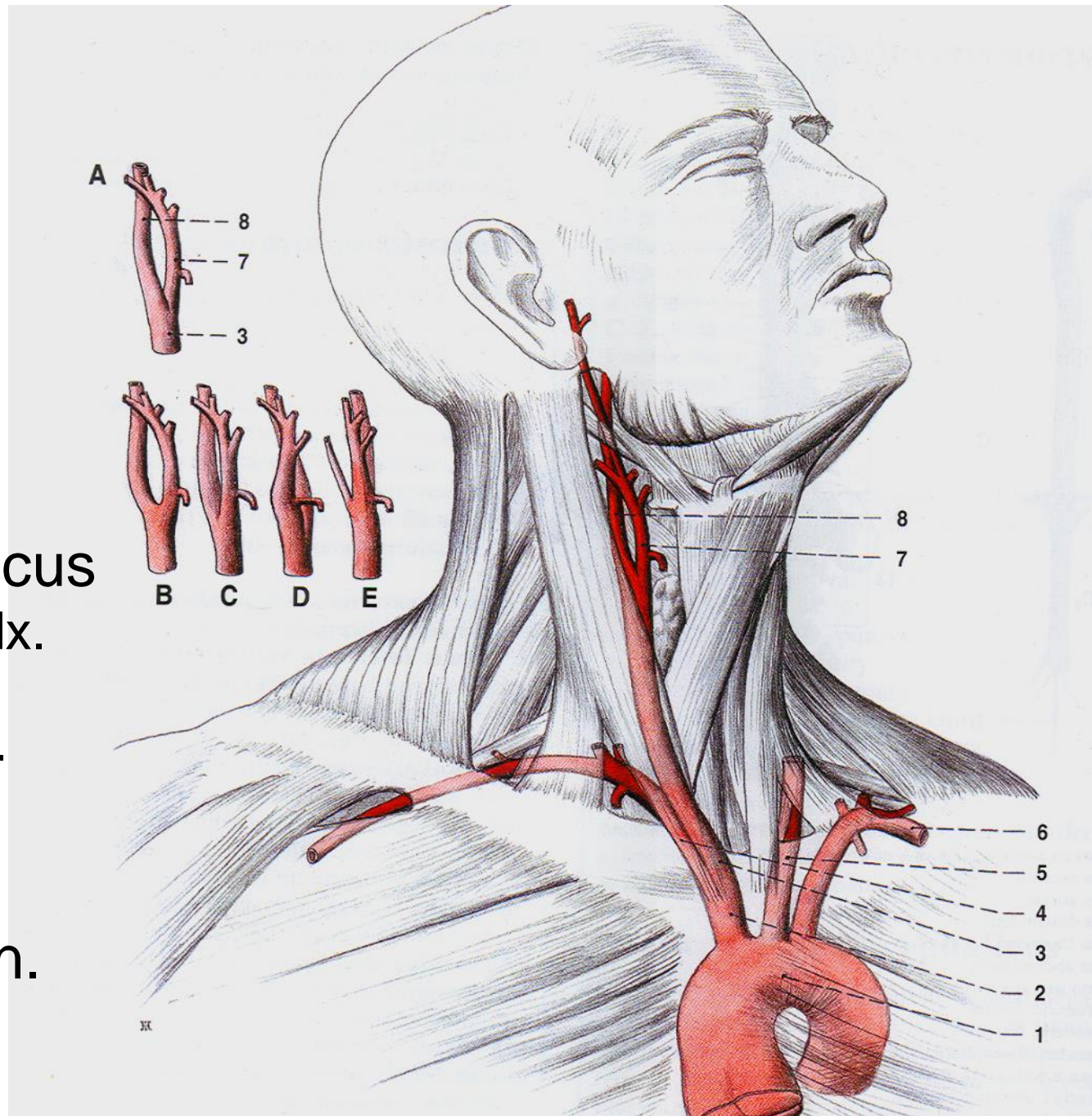
5
C
M

Arcus aortae

levostranný

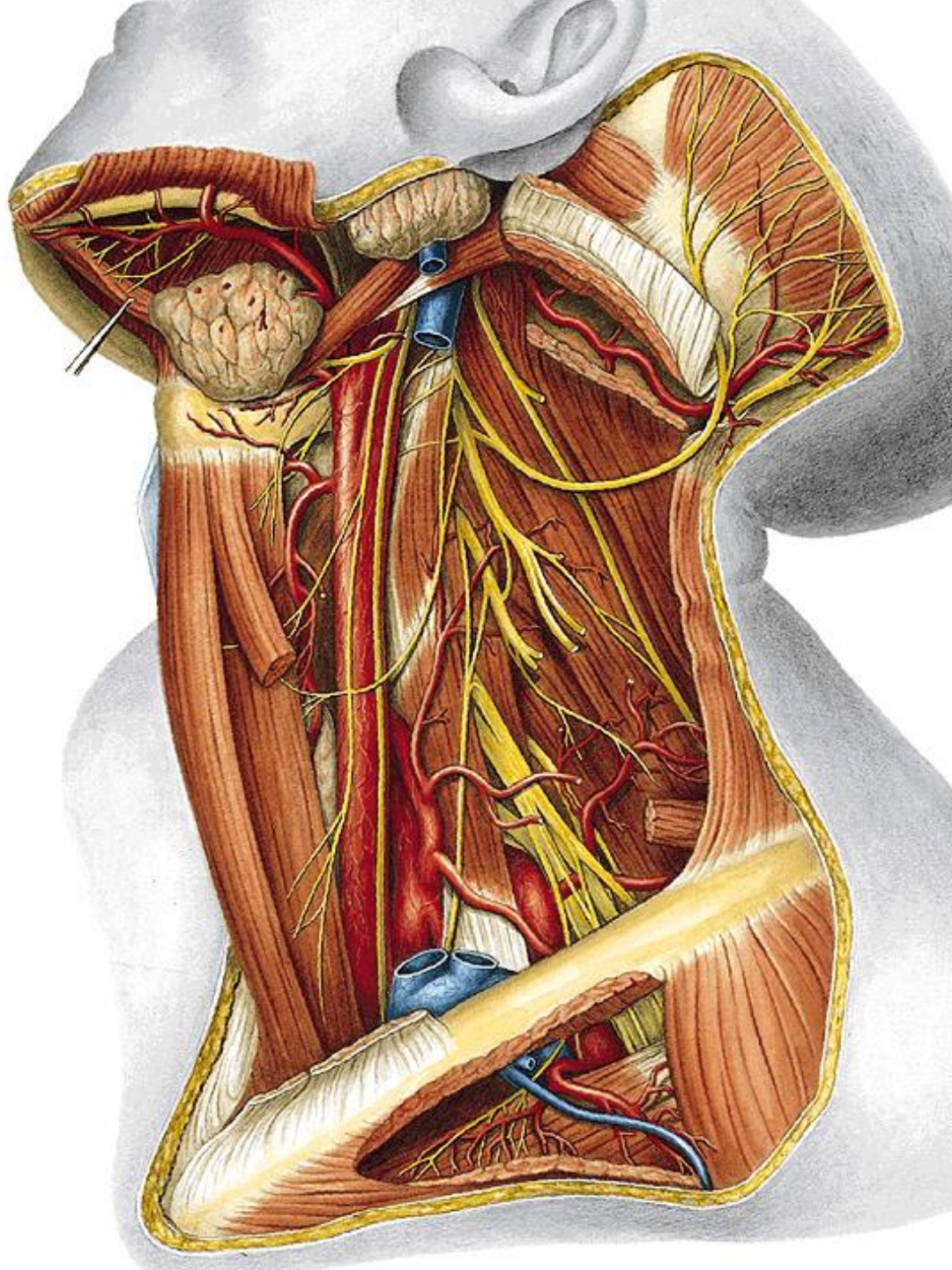
3 větve:

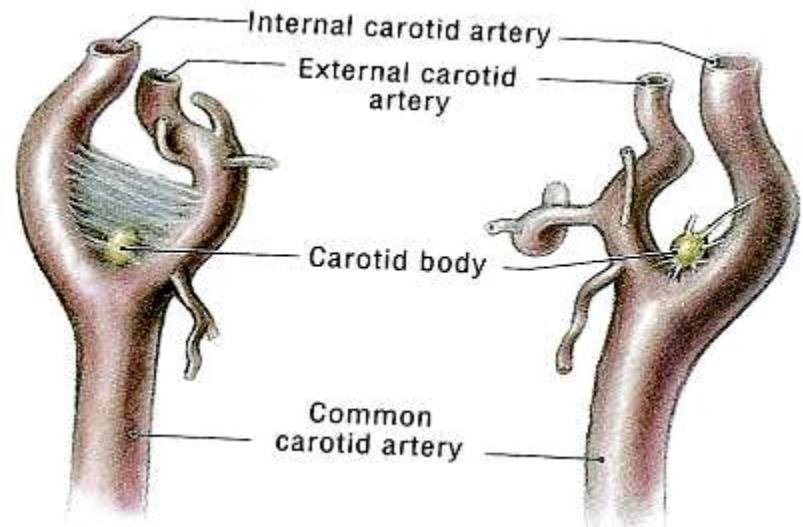
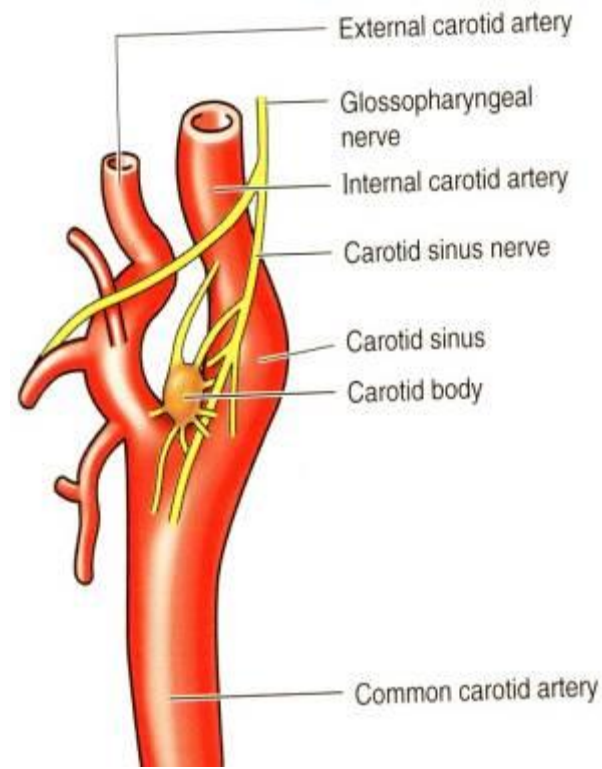
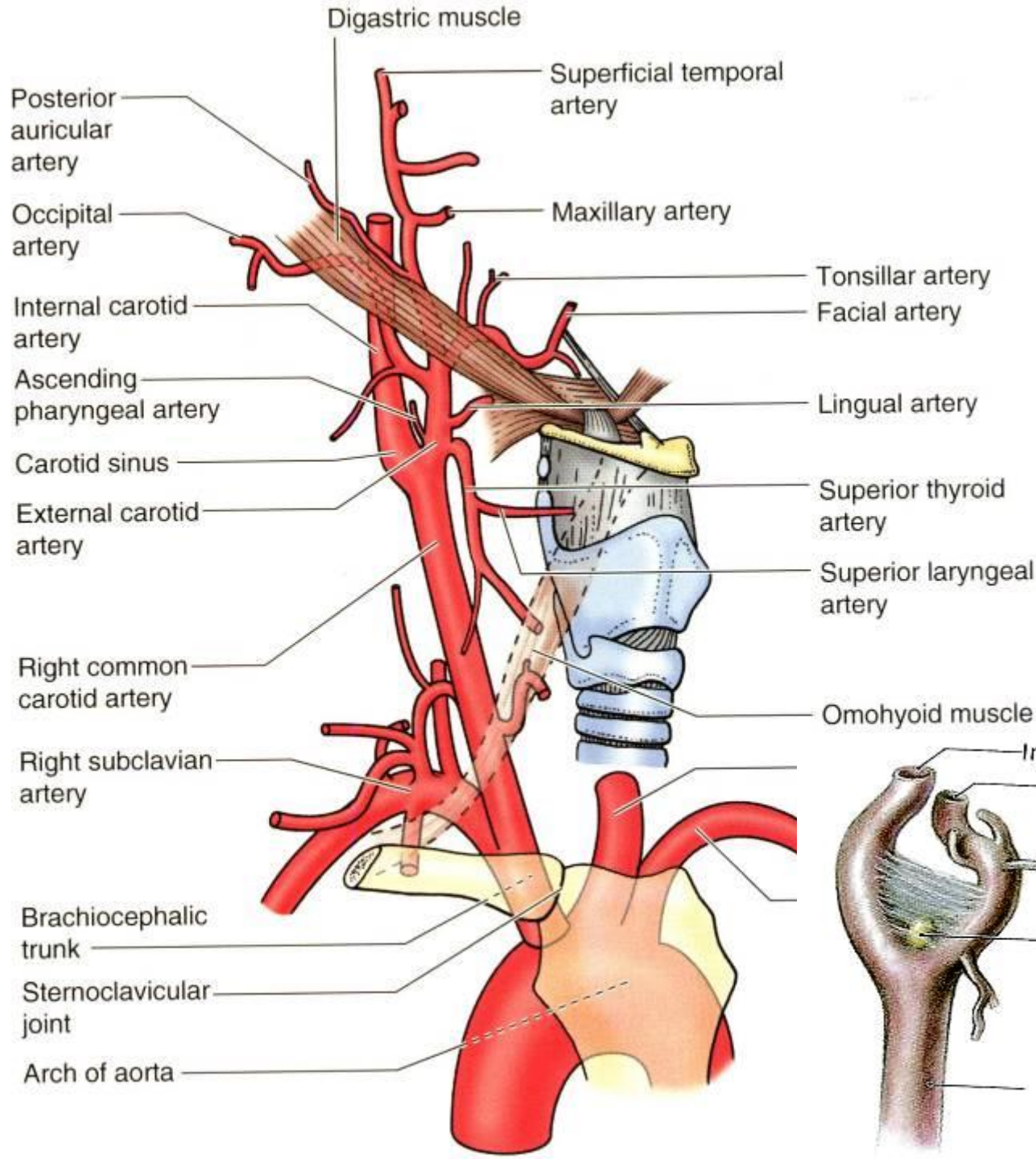
- truncus brachiocephalicus
 - a. subclavia dx.
 - a. carotis communis dx.
- a. carotis communis sin.
- a. subclavia sin.



A. carotis communis (Společná krkavice)

- vagina carotica
- spatium parapharyngeum
- trigonum caroticum + omotracheale
- bifurcatio carotidis C4
 - a. carotis interna
 - a. carotis externa



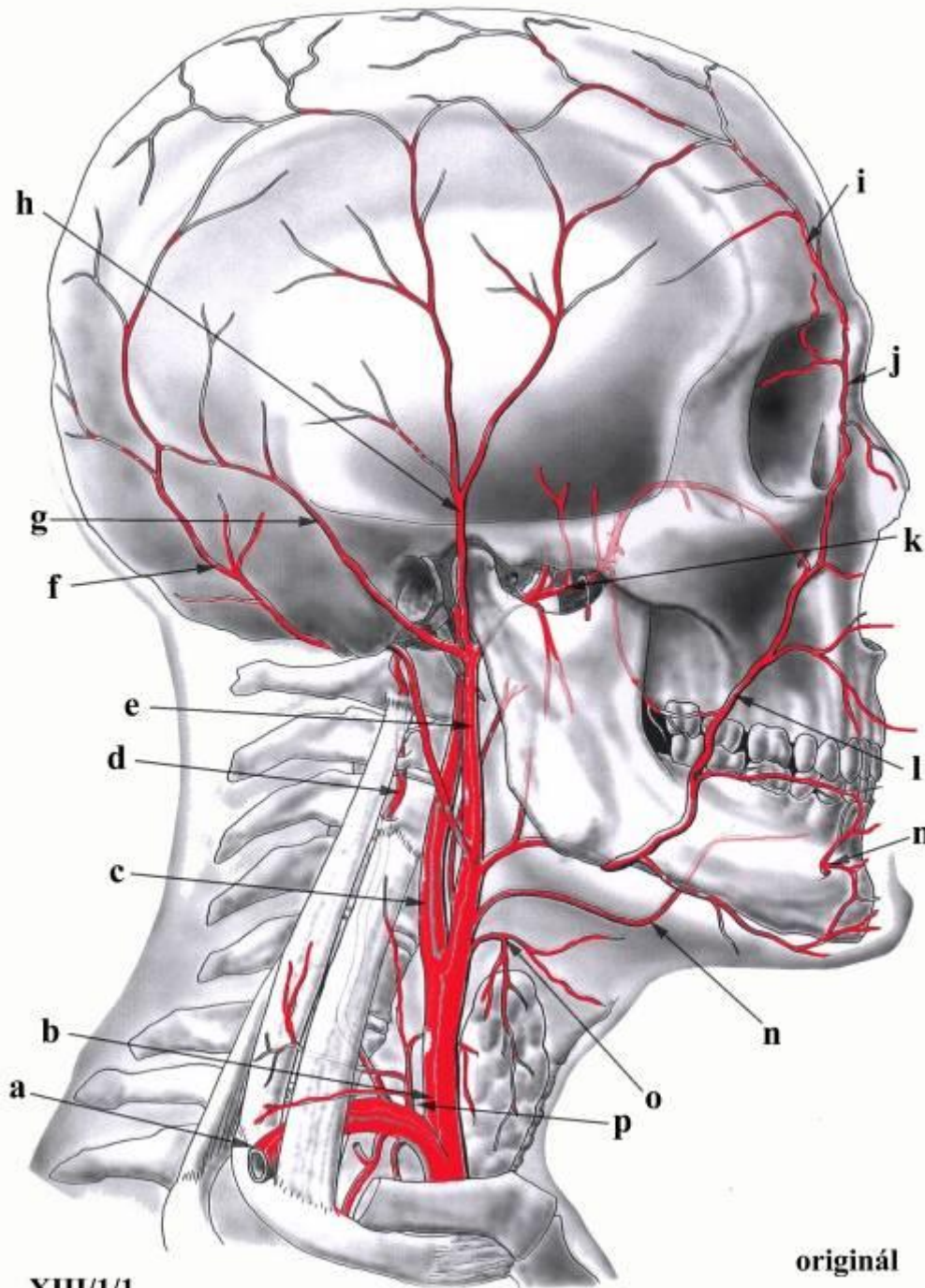


A. carotis externa

- ventromediálně
- 8 větví
- obličej, jazyk, ústní dutina, hltan, pleny

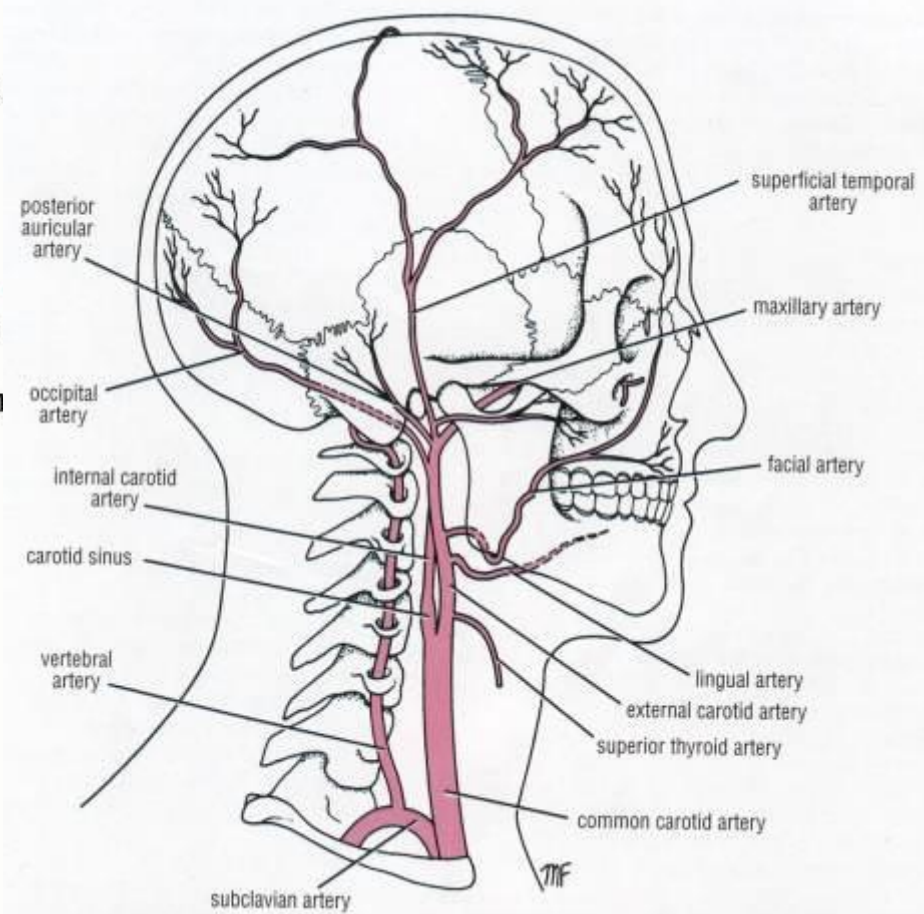
A. carotis interna

- dorzolaterálně
- žádná větev na krku
- mozek, oko



XIII/1/1.

originál



Arteria carotis externa větve

ventrální:

- a. thyroidea sup.
- a. lingualis
- a. facialis

dorzální:

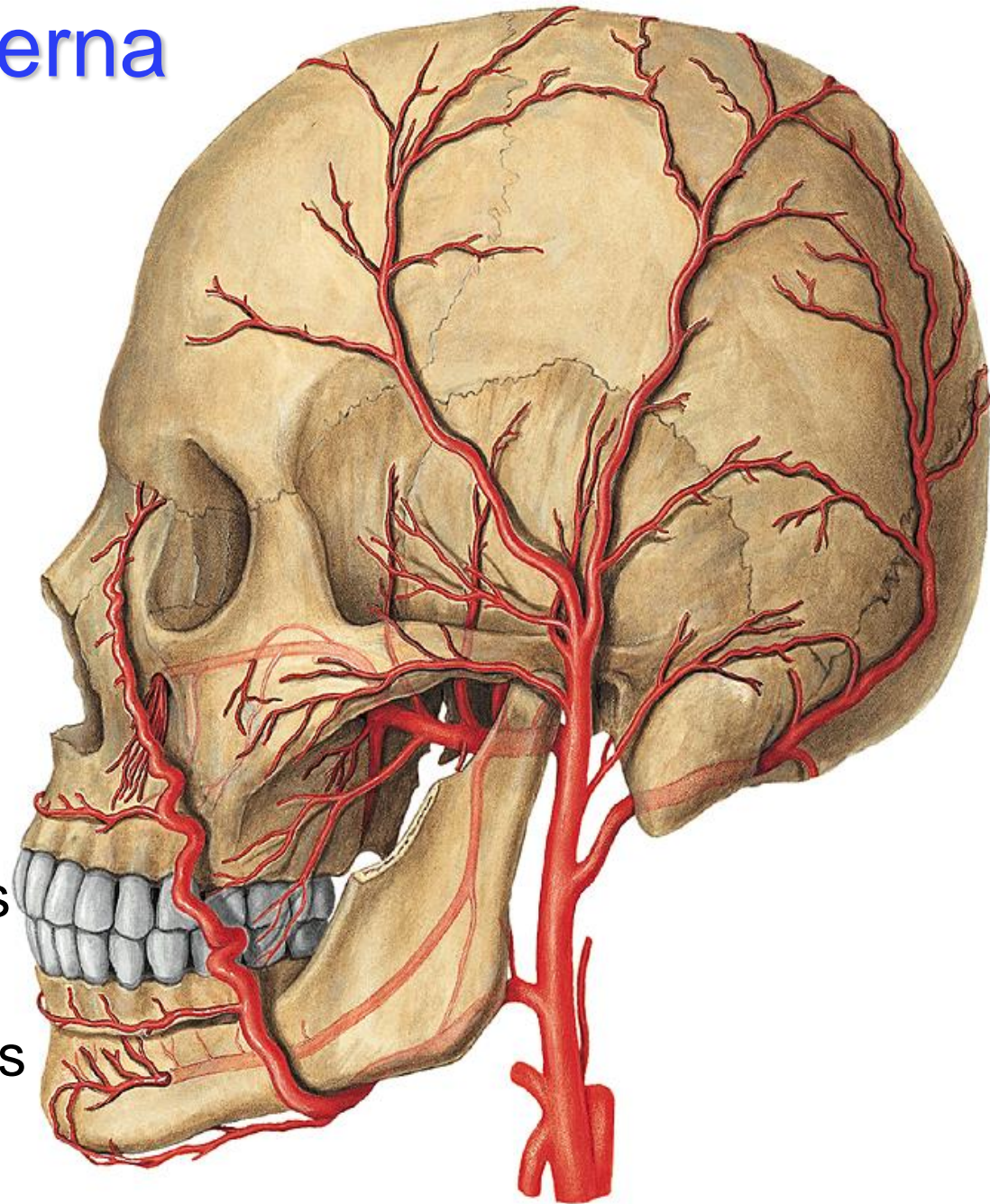
- a. occipitalis
- a. auricularis posterior

mediální:

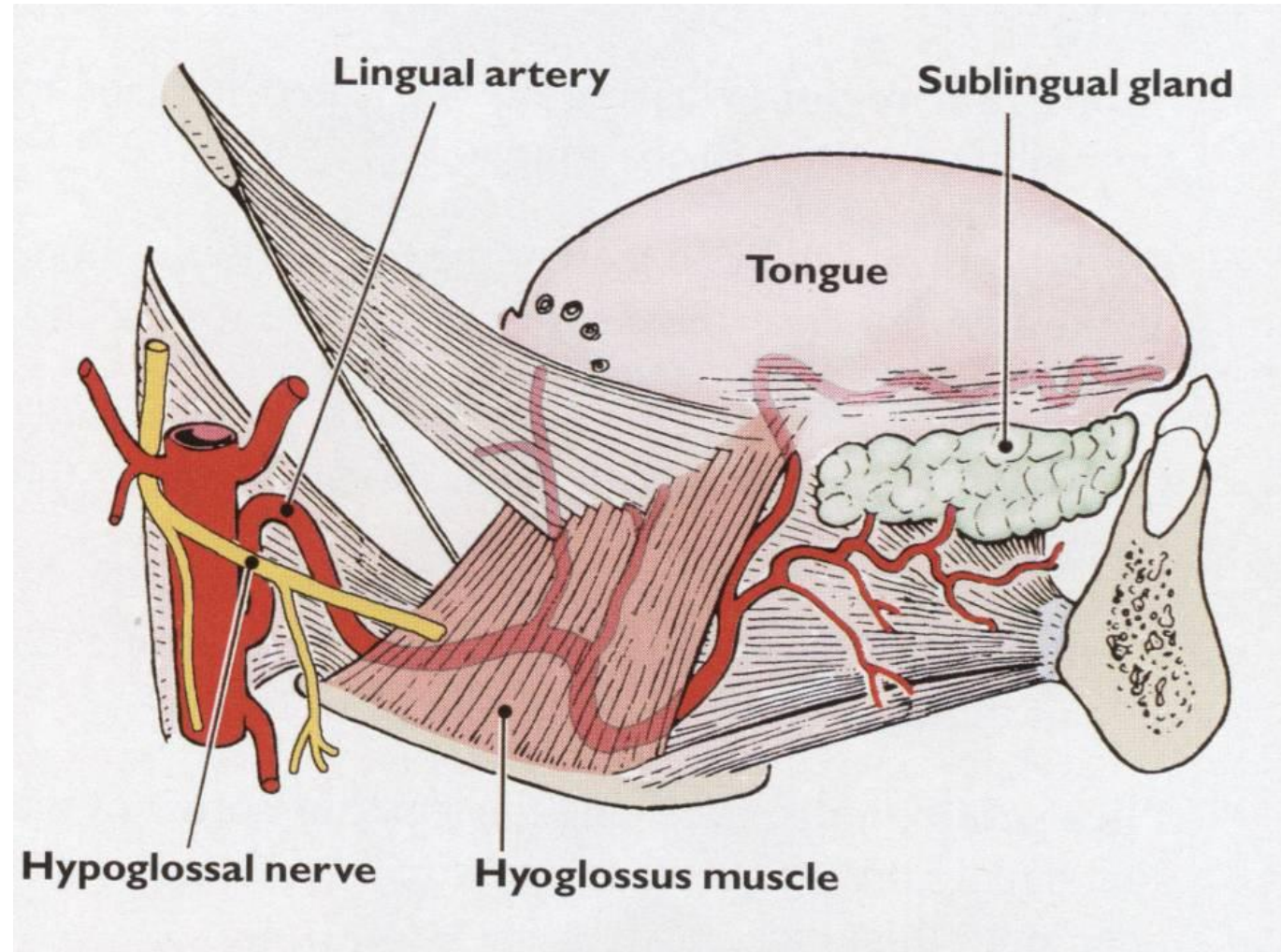
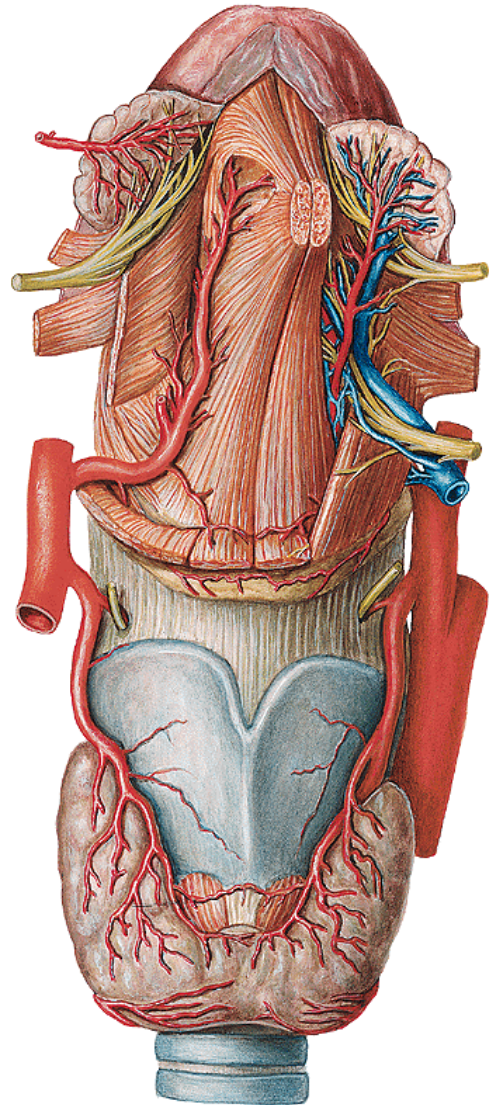
- a. pharyngea ascendens

koncové:

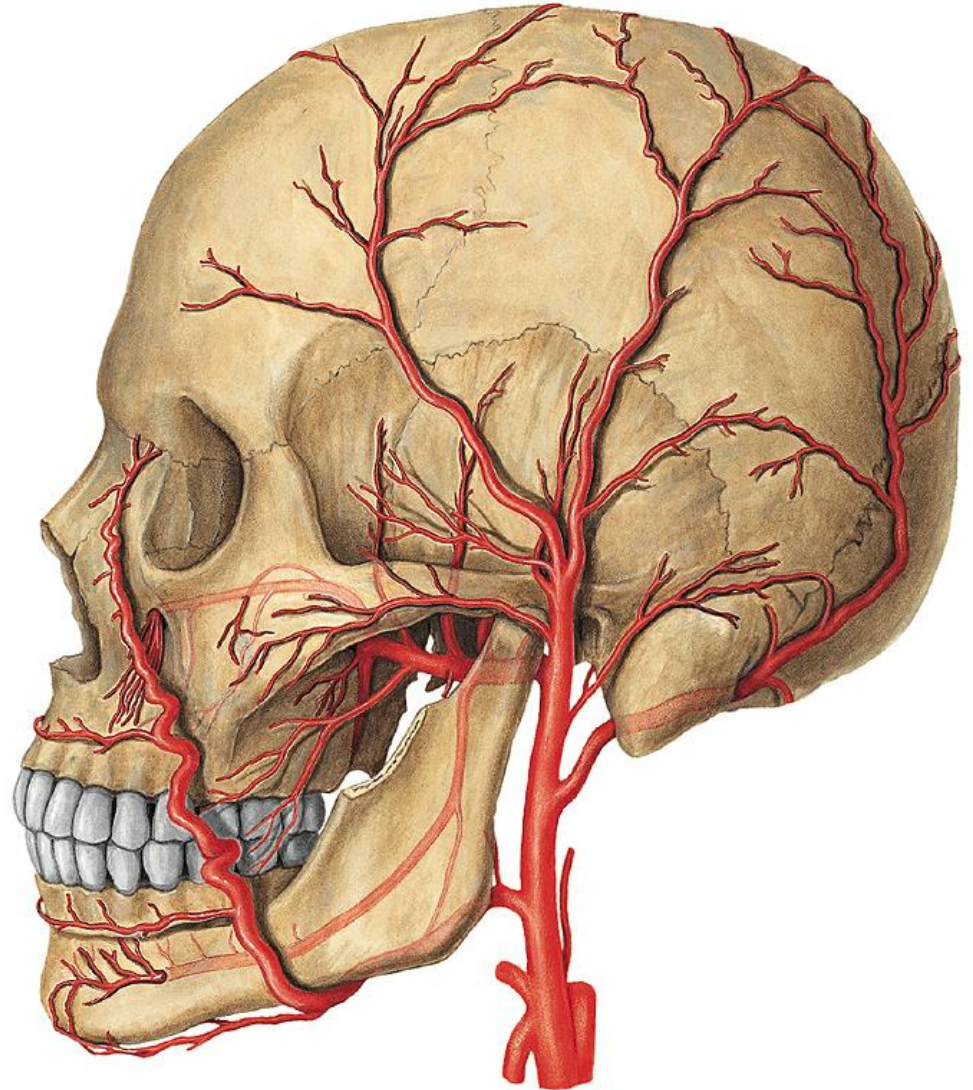
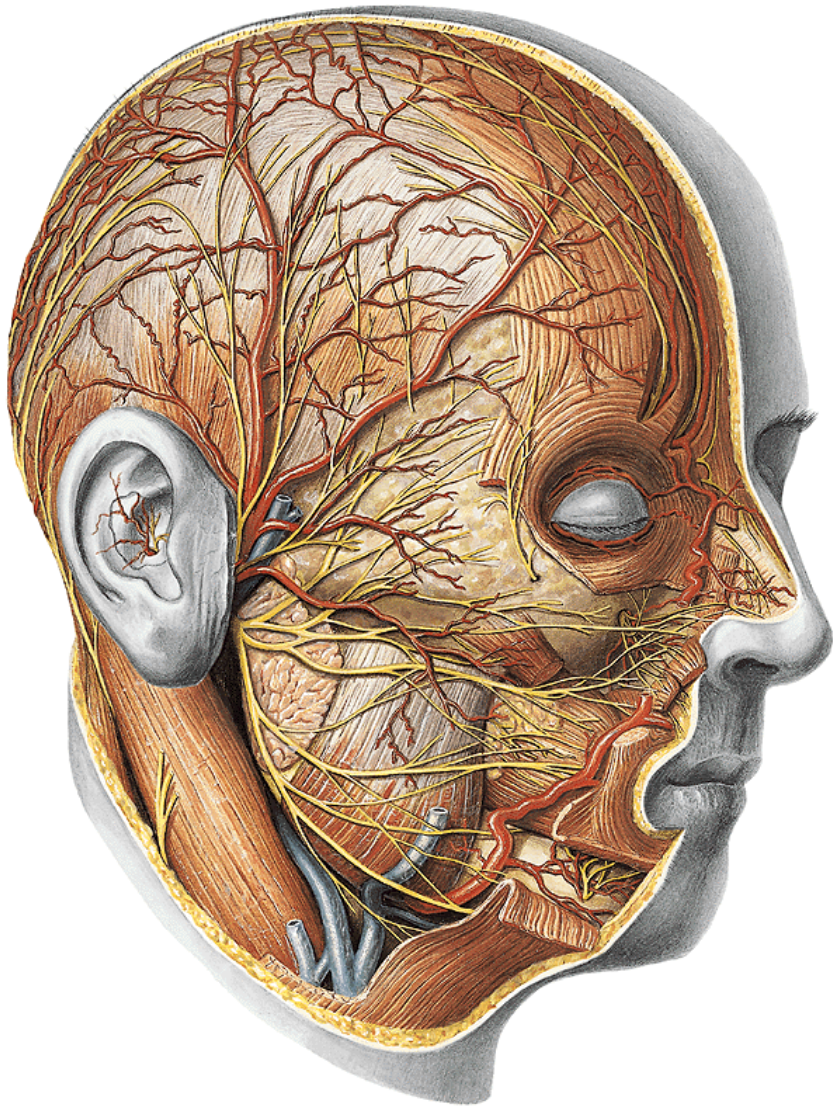
- a. temporalis superficialis
- a. maxillaris



A. thyroidea superior + a. lingualis



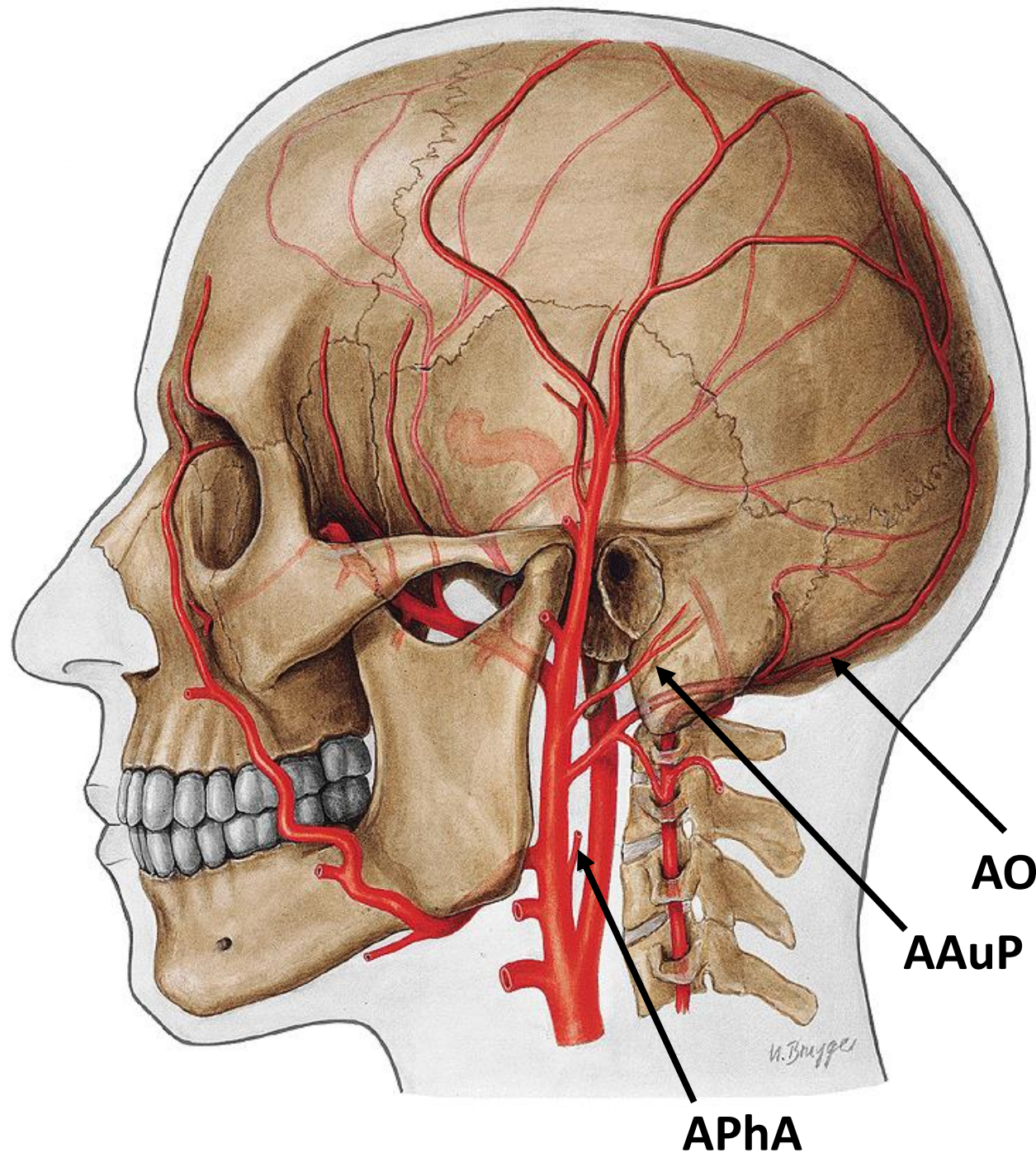
Arteria facialis



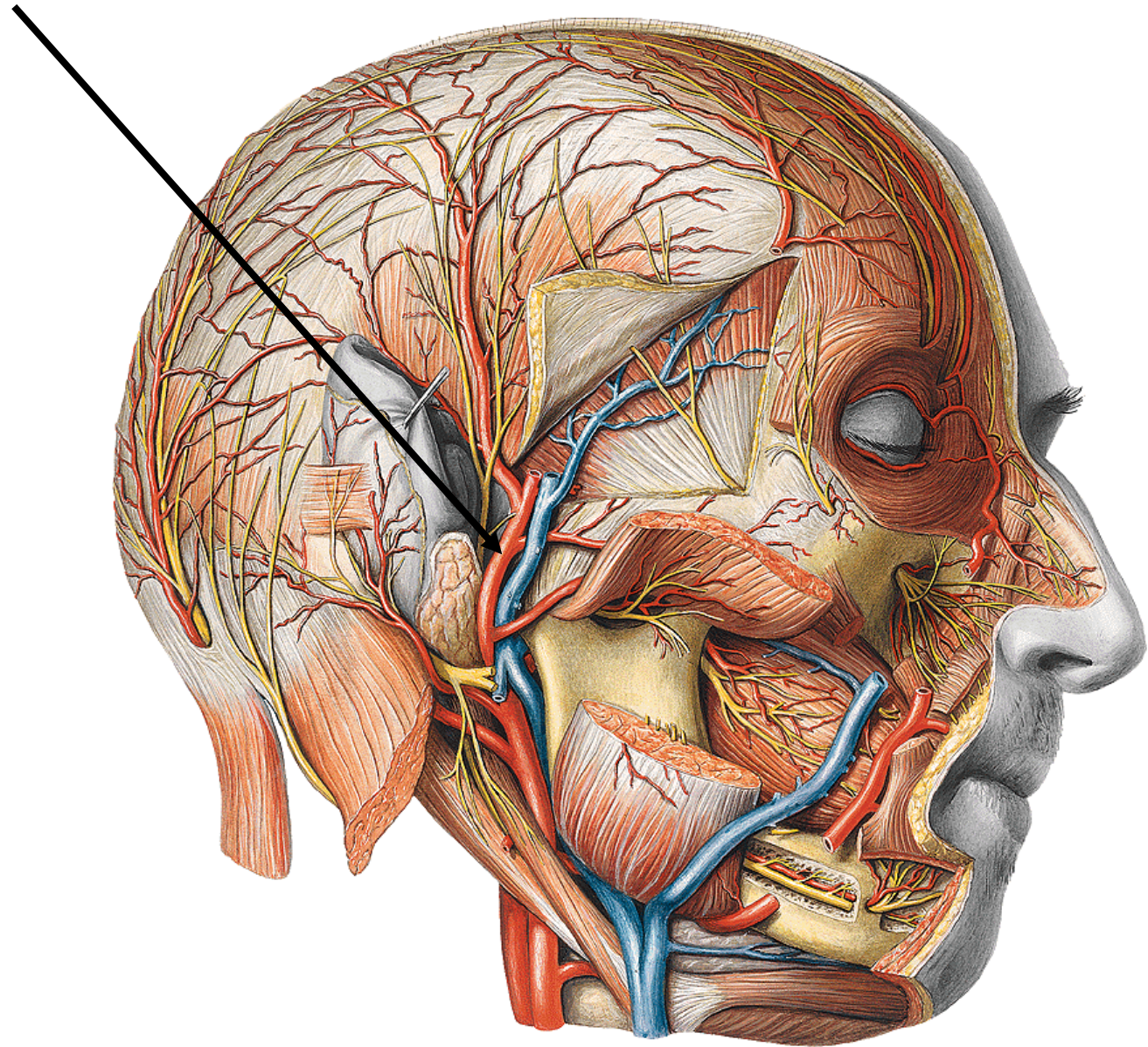
Arteria
occipitalis

Arteria
auricularis
posterior

Arteria
pharyngea
ascendens

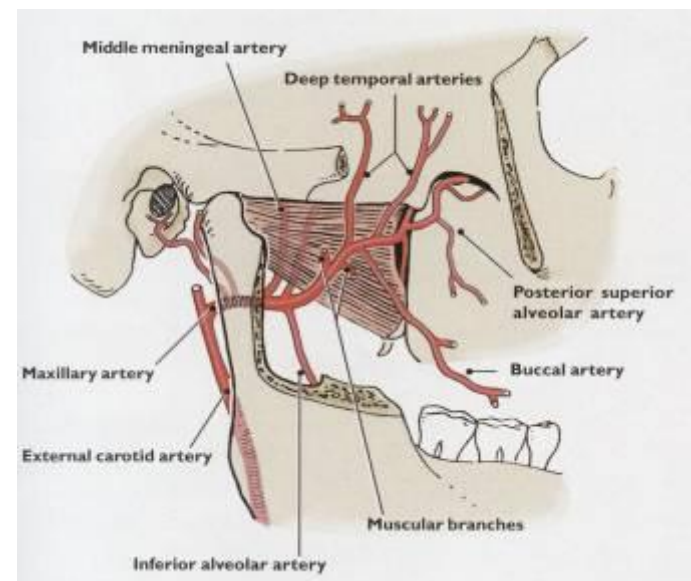
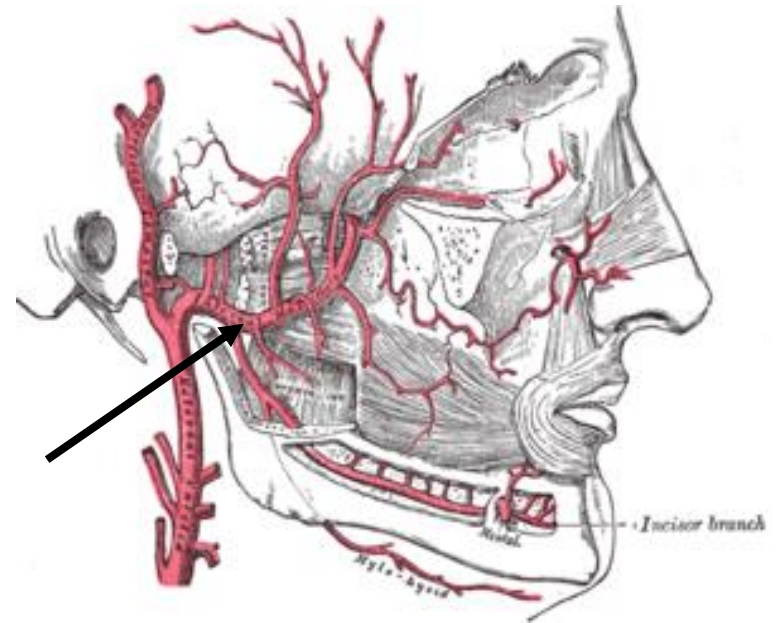


Arteria temporalis superficialis



Arteria maxillaris

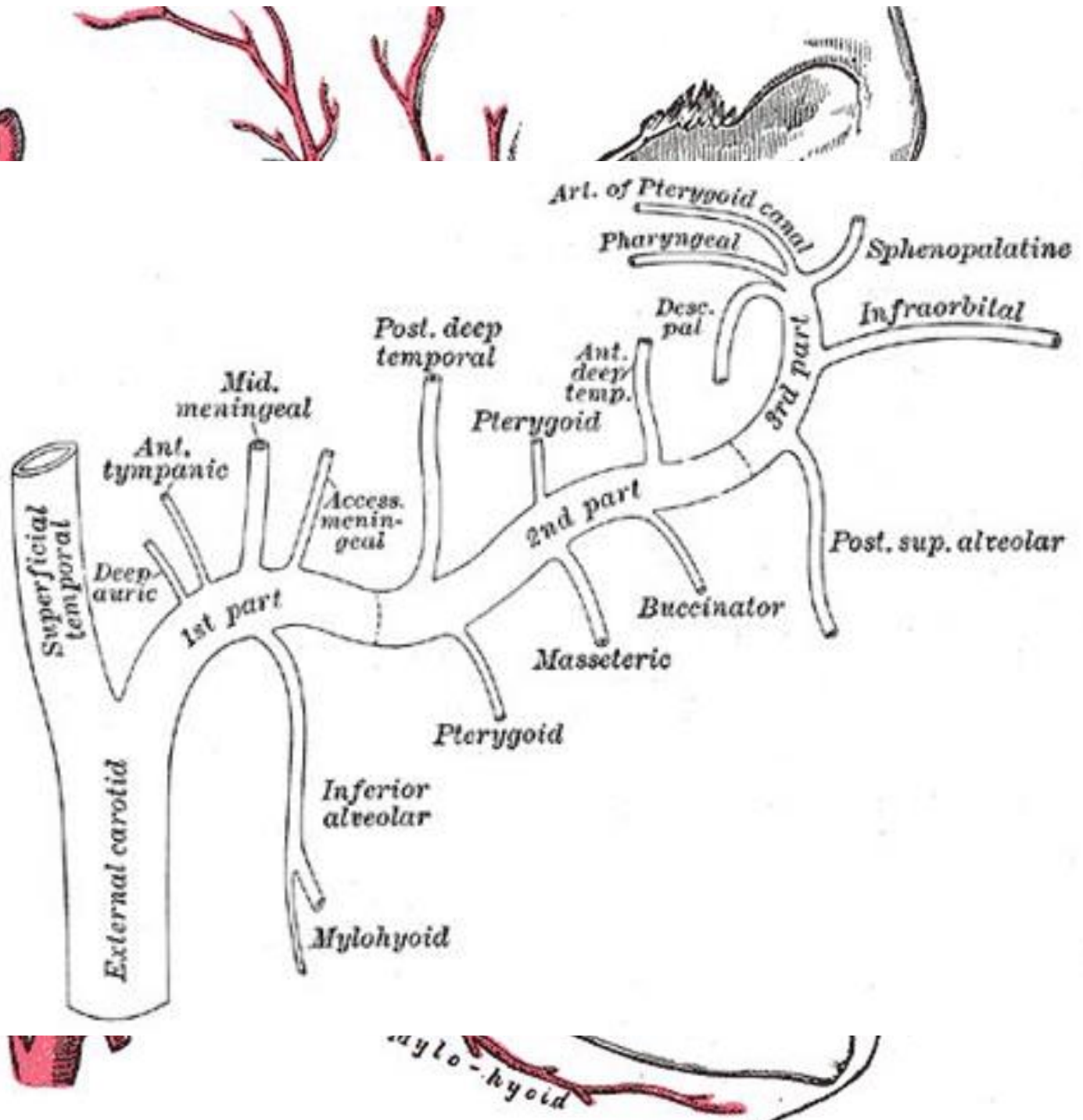
- spatium prestylodeium
 - uvnitř glandula parotidea
- fossa infratemporalis
 - ventrálně/dorzálně od m. pterygoideus lat. (1:1)
- fissura pterygomaxillaris
- fossa pterygopalatina
- 3 části
- 13 větví
- maxilofaciální chirurgie



ARTERIA MAXILLARIS

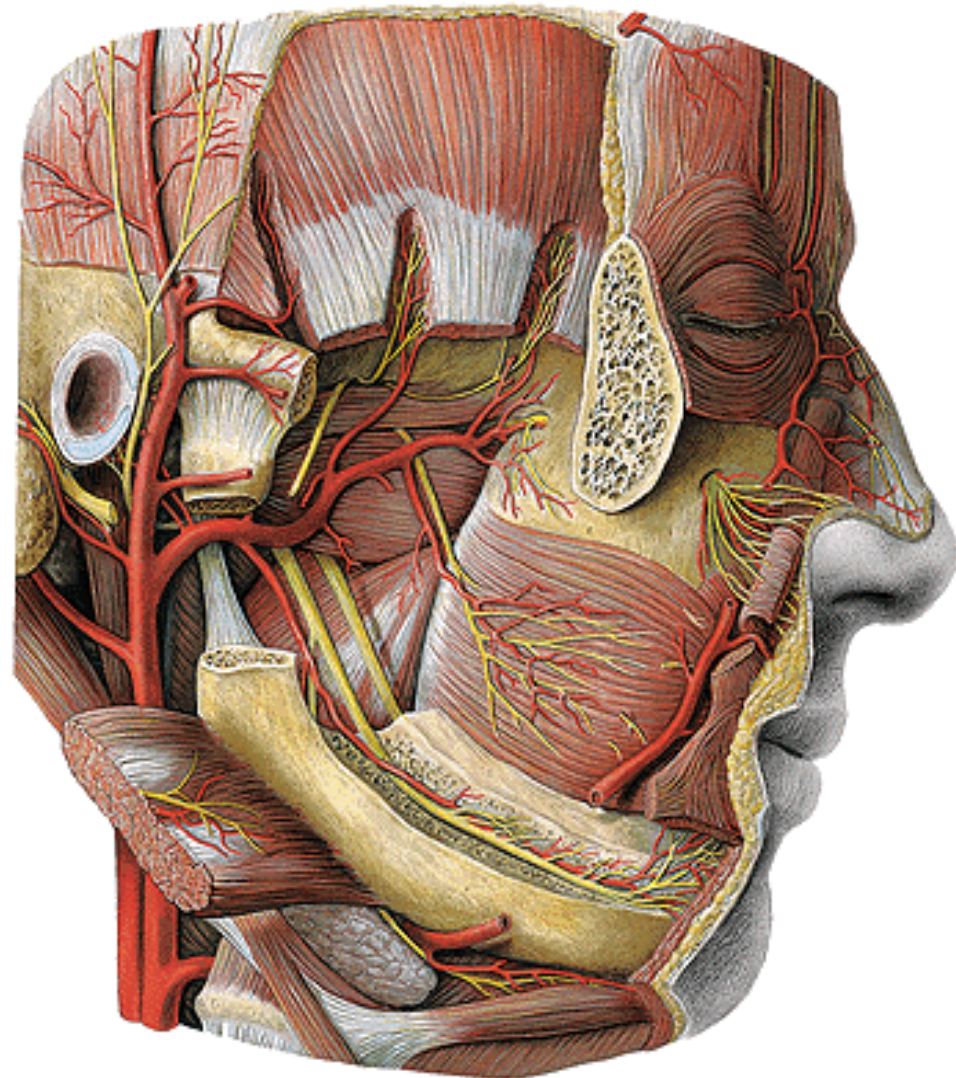


- 1 - pars mandibularis
- 2 - pars pterygoidea
- 3 - pars pterygopalatina



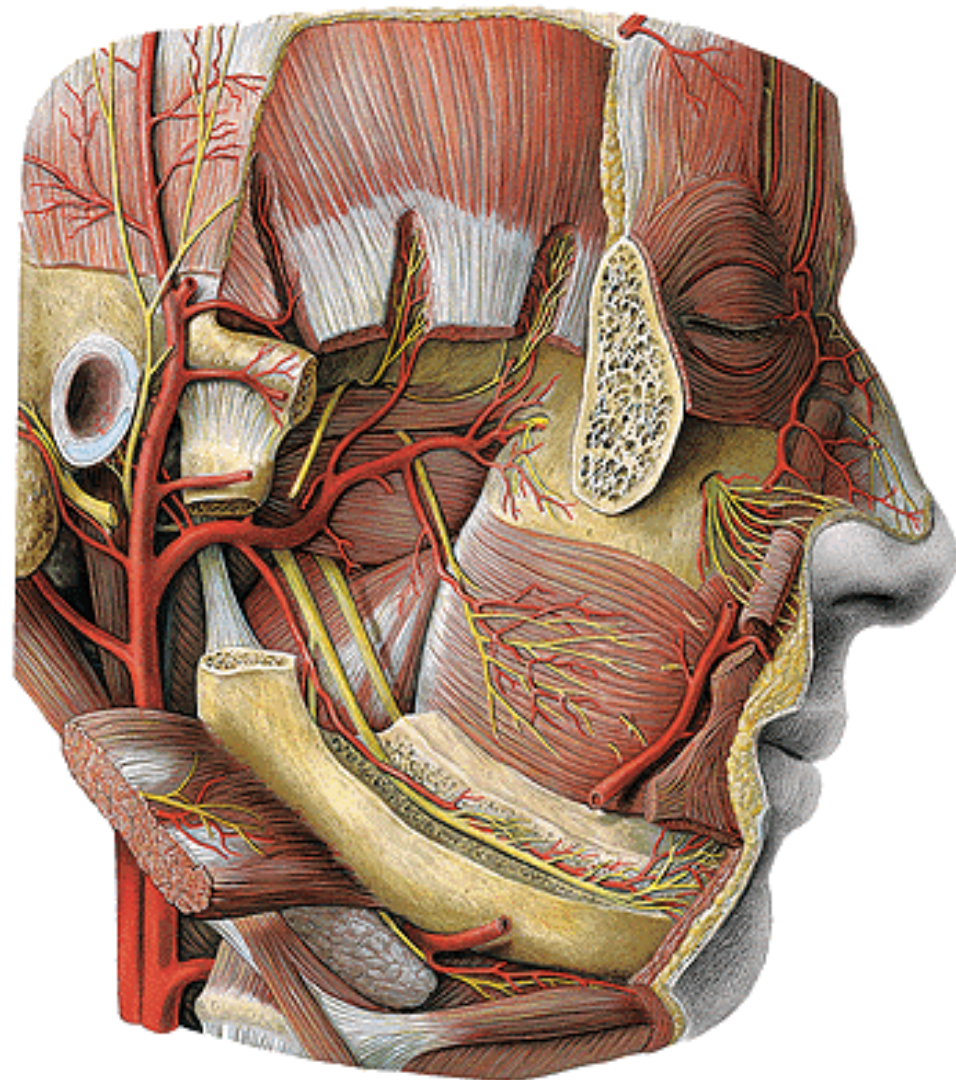
Arteria maxillaris pars mandibularis

- **a. auricularis profunda**
- **a. tympanica anterior**
fissura petrotympanica
- **a. alveolaris inferior**
canalis mandibulae
 - **r. mylohyoideus**
 - **rr. dentales + peridentales**
 - **r. mentalis**
foramen mentale
- **a. meningea media**
foramen spinosum
 - **r. accessorius**
 - **r. frontalis**
 - **r. orbitalis**
 - **r. parietalis**
 - **r. petrosus**
canalis n. petrosi majoris
 - **a. tympanica superior**
canalis n. petrosi minoris



Arteria maxillaris pars pterygoidea

- a. pterygomeningea
 - rr. pterygoidei
- a. masseterica
incisura mandibulae
- a. temporalis profunda
anterior + posterior
 - rr. pterygoidei
- a. buccalis



Arteria maxillaris pars pterygopalatina

- **aa. alveolares sup. post.**

foramina + canales alveolares

- rr. dentales + peridentales

- **a. infraorbitalis**

sulcus + canalis infraorbitalis

- a. alveolaris sup. media
- a. alveolaris sup. ant.

- **a. canalis pterygoidei**

canalis pterygoideus

- r. pharyngeus

canalis palatovaginalis

- **a. palatina descendens**

- a. palatina major

canalis + for. palatinum majus

- aa. palatinae minores

cann. + forr. palatina minora

- **a. sphenopalatina**

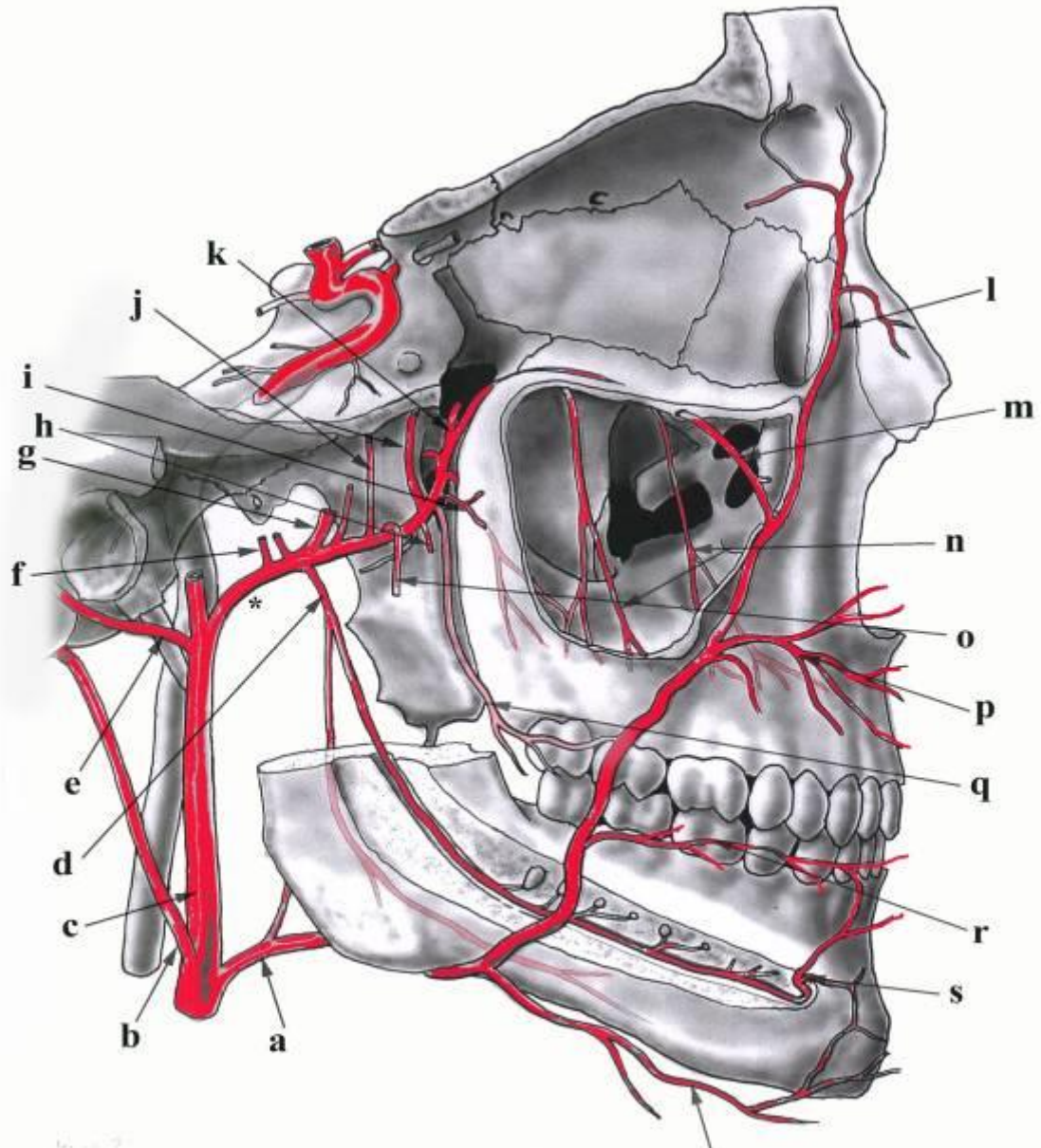
foramen sphenopalatinum

- aa. nasales post. lat.

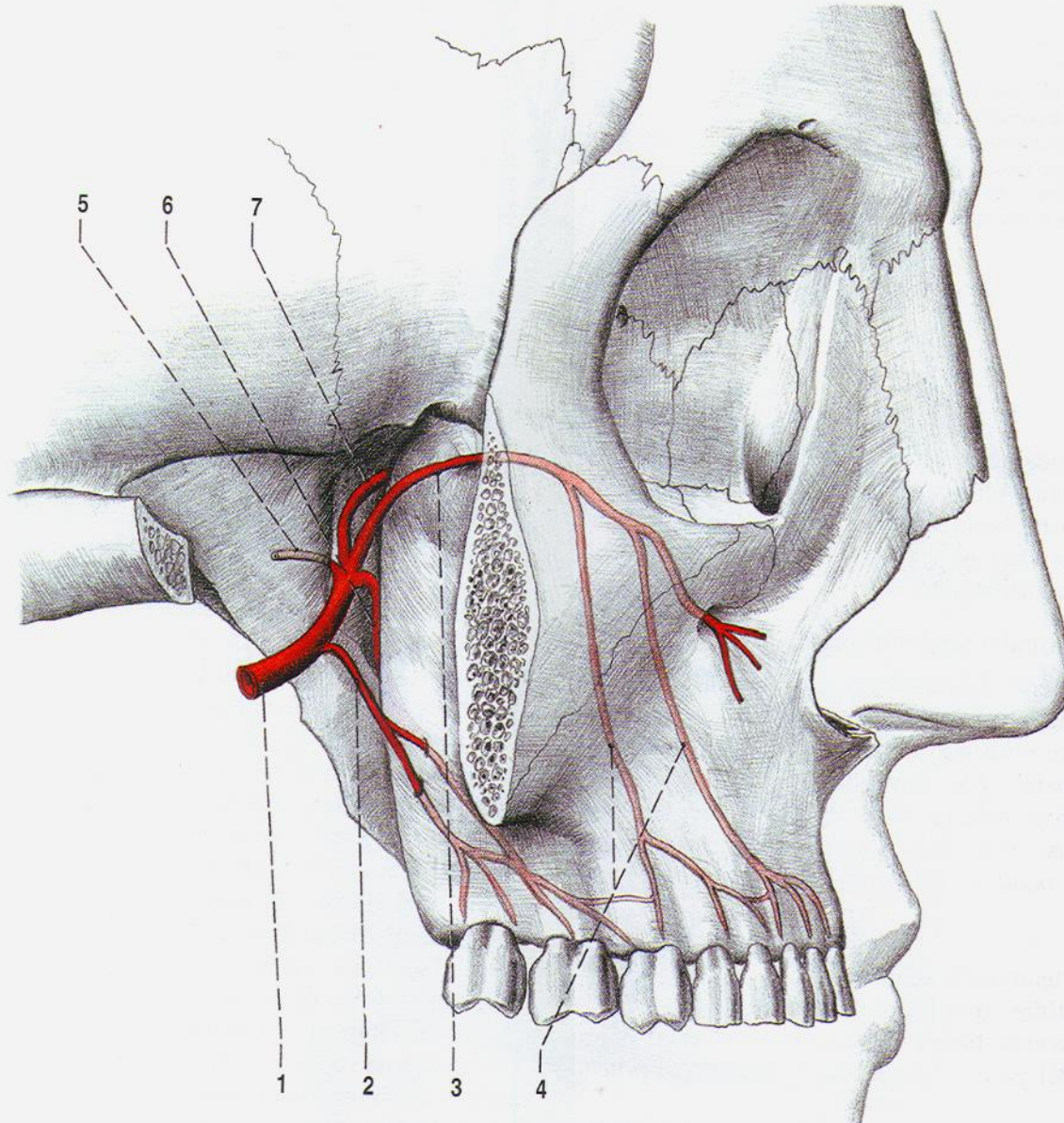
- rr. septales post.

- a. nasopalatina

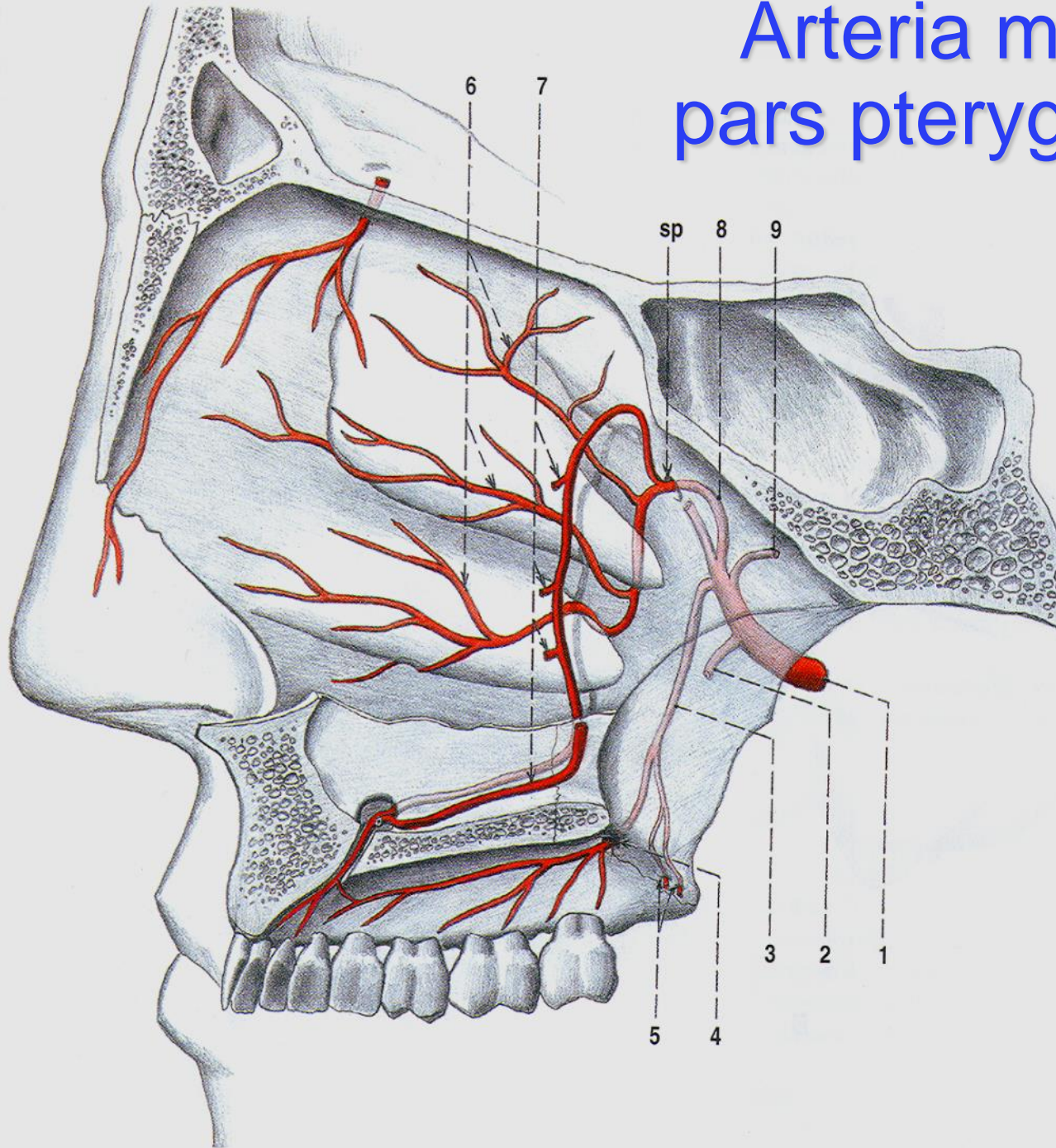
canalis + for. incisivum



Arteria maxillaris pars pterygopalatina



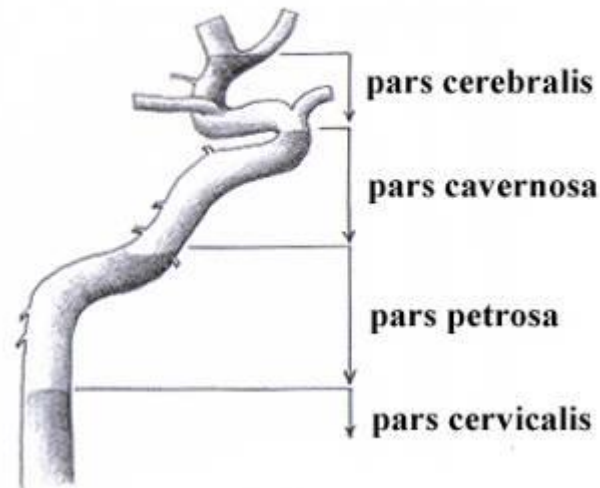
Arteria maxillaris pars pterygopalatina



Arteria carotis interna

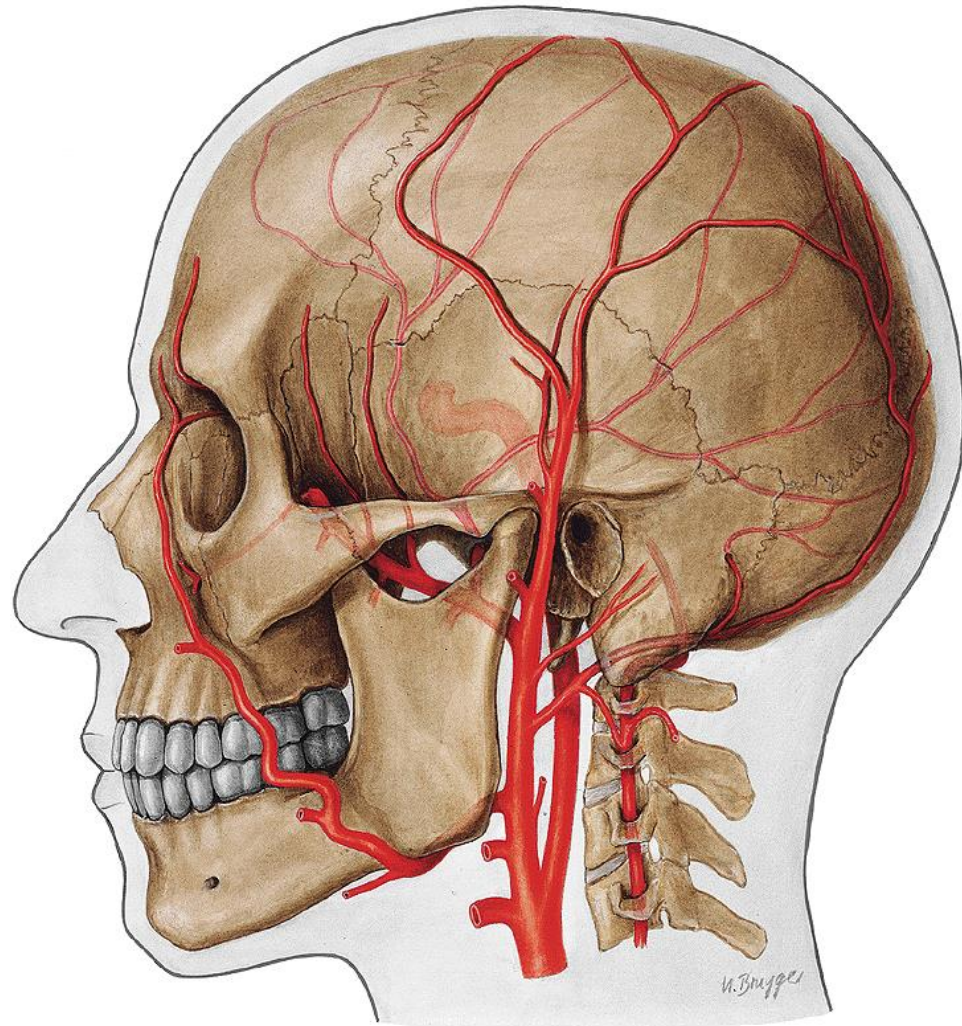
- mozek (80 % krve), oko
- anatomicky 4 části – klinicky 7 částí
- siphon caroticum
- circulus arteriosus cerebri *Willisi*

ČÁSTI VNITŘNÍ KRKAVICE



A. carotis interna – pars cervicalis

- žádné větve na krku
- laterálně → dorzálně → dorzomediálně od ACExt.
- vagina carotica
- trigonum caroticum + spatium parapharyngeum
- spatium retrostyloideum
- *přístup k sonografickému vyšetření*



A. carotis interna – pars petrosa

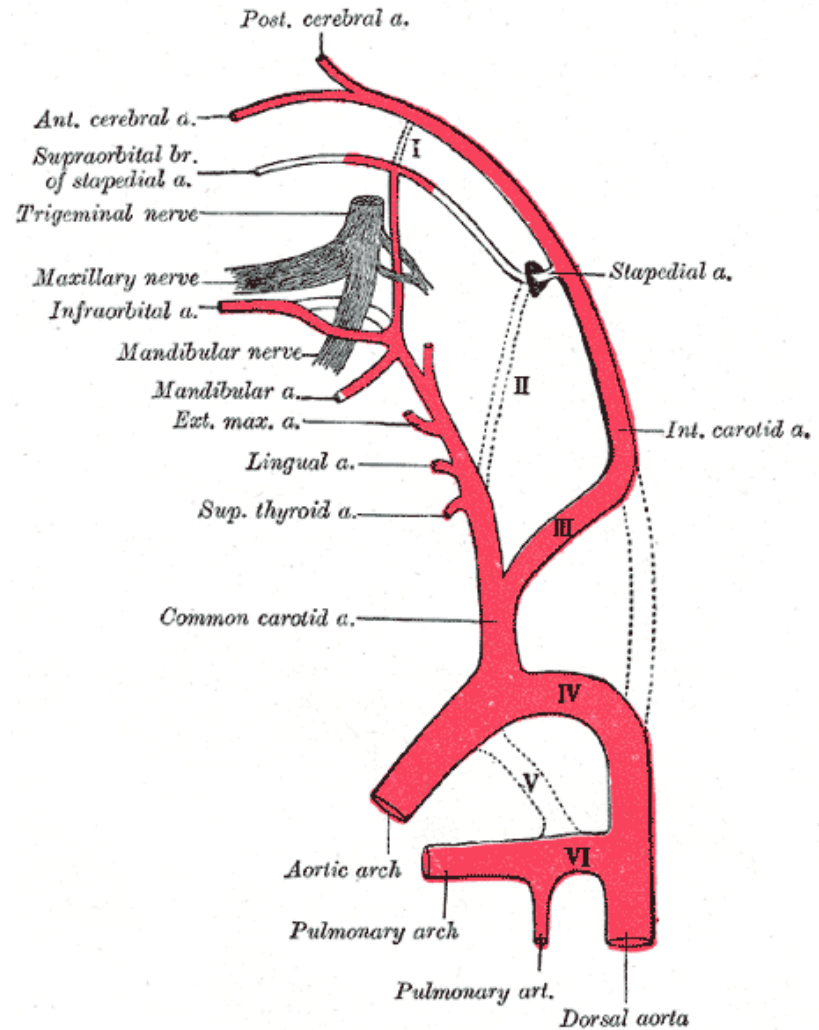
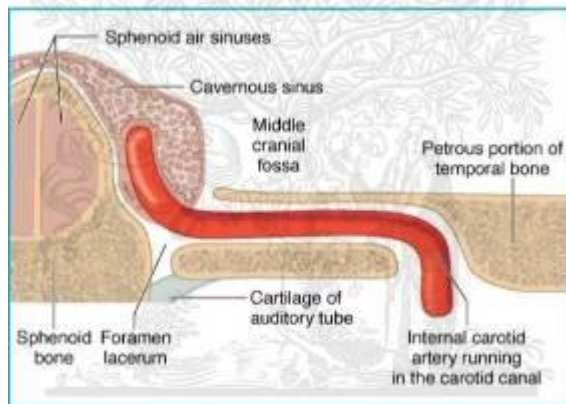
pars petrosa ossis temporalis

canalis caroticus → foramen

lacerum → sulcus caroticus

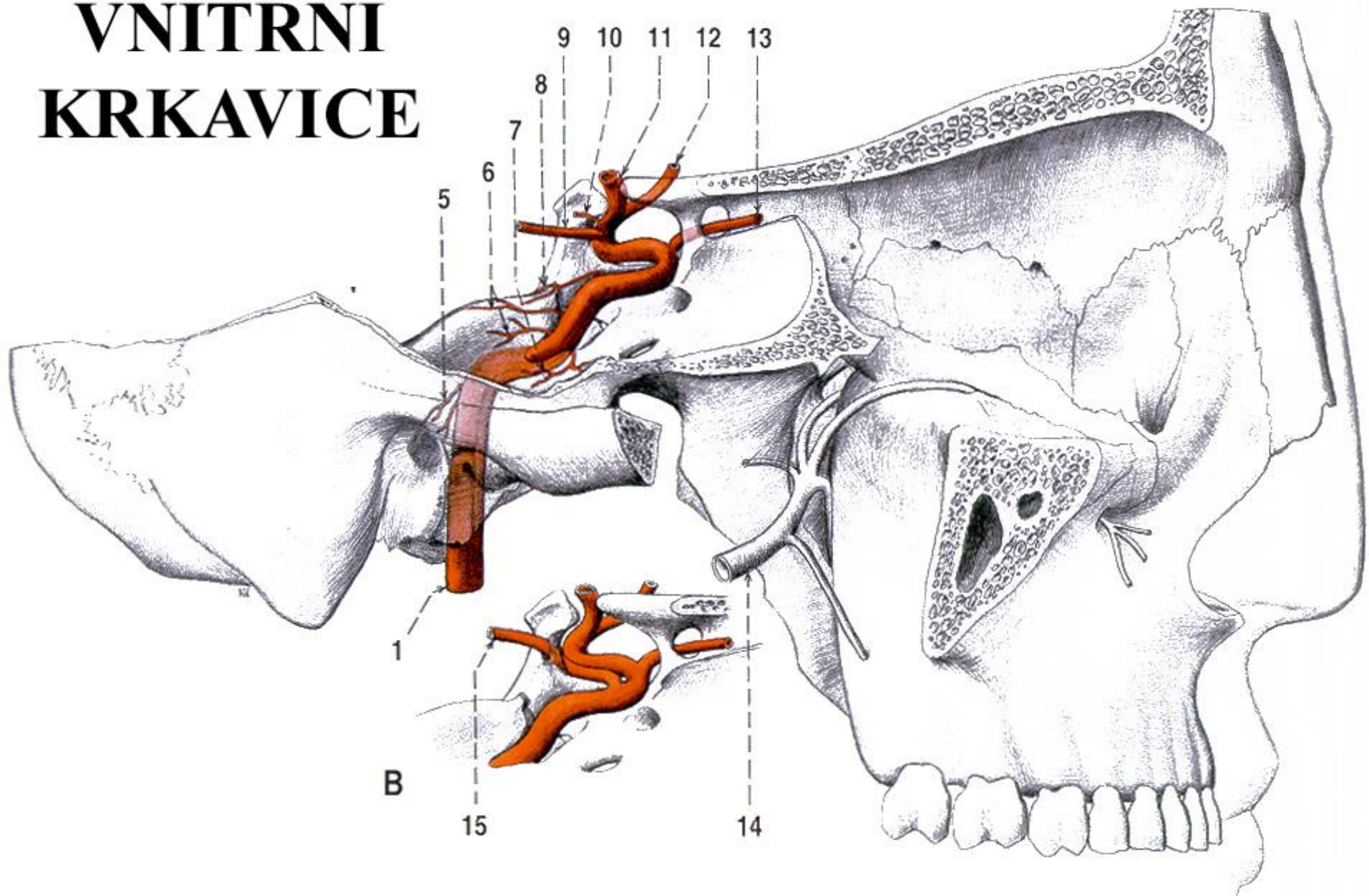
ossis sphenoidalis

- aa. caroticotympanicae



ELSEVIER

VNITŘNÍ KRKAVICE



A. carotis interna pars cavernosa + cerebralis

pars cavernosa – *sulcus caroticus ossis sphenoidalis*

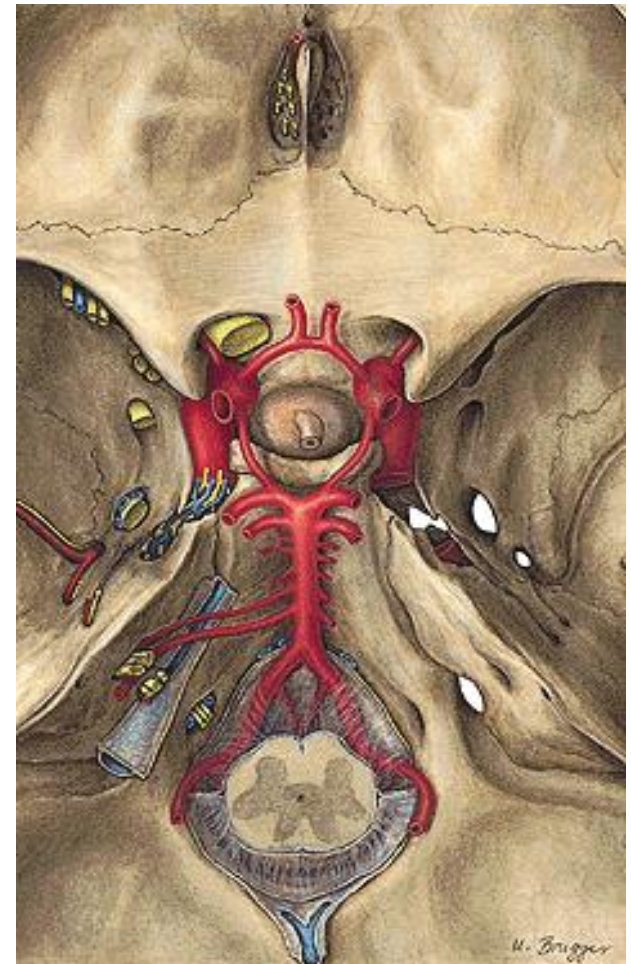
pars cerebralis

- a. ophthalmica

koncové větve:

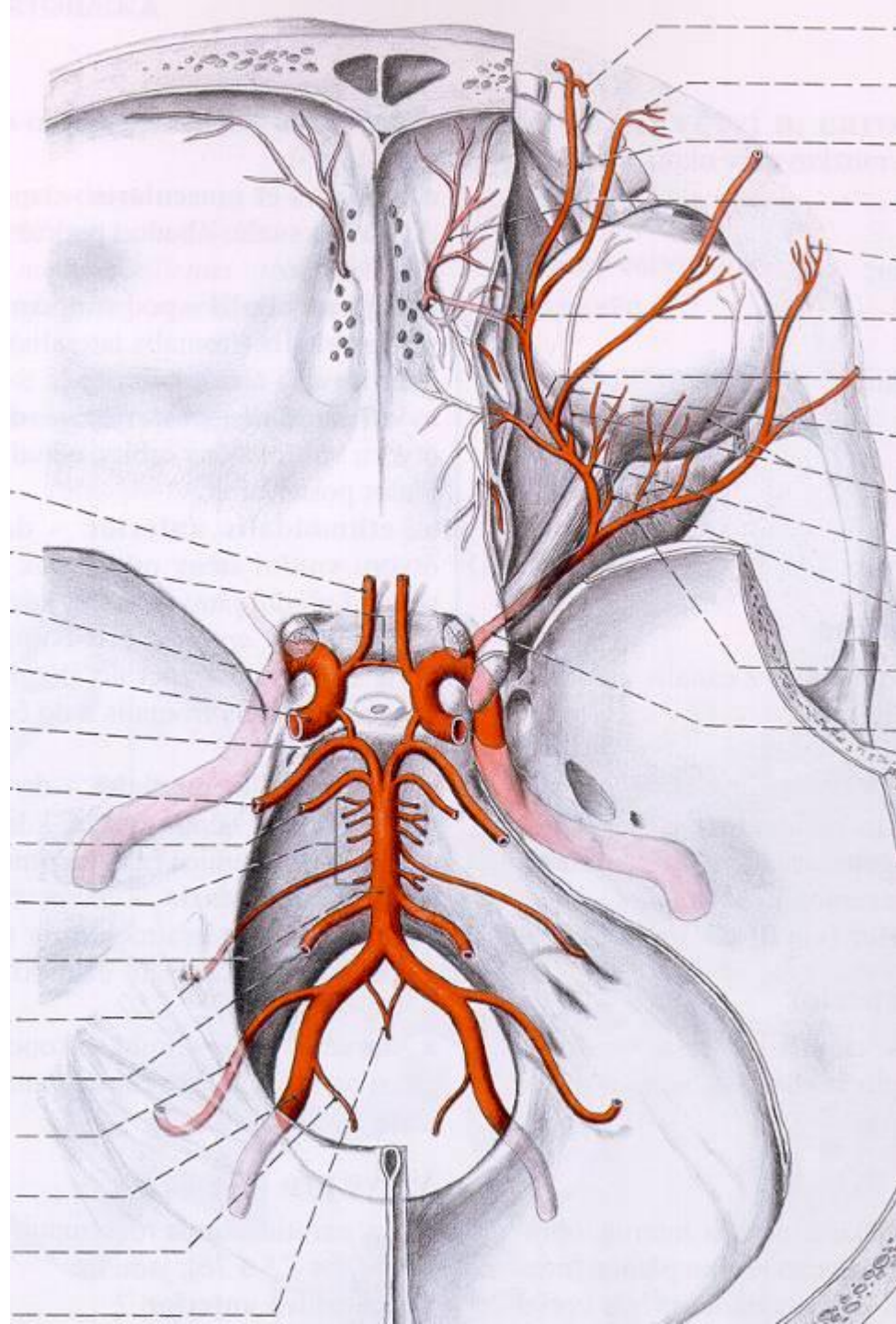
- **a. cerebri anterior**
- **a. cerebri media**

*circulus arteriosus cerebri
Willisi*



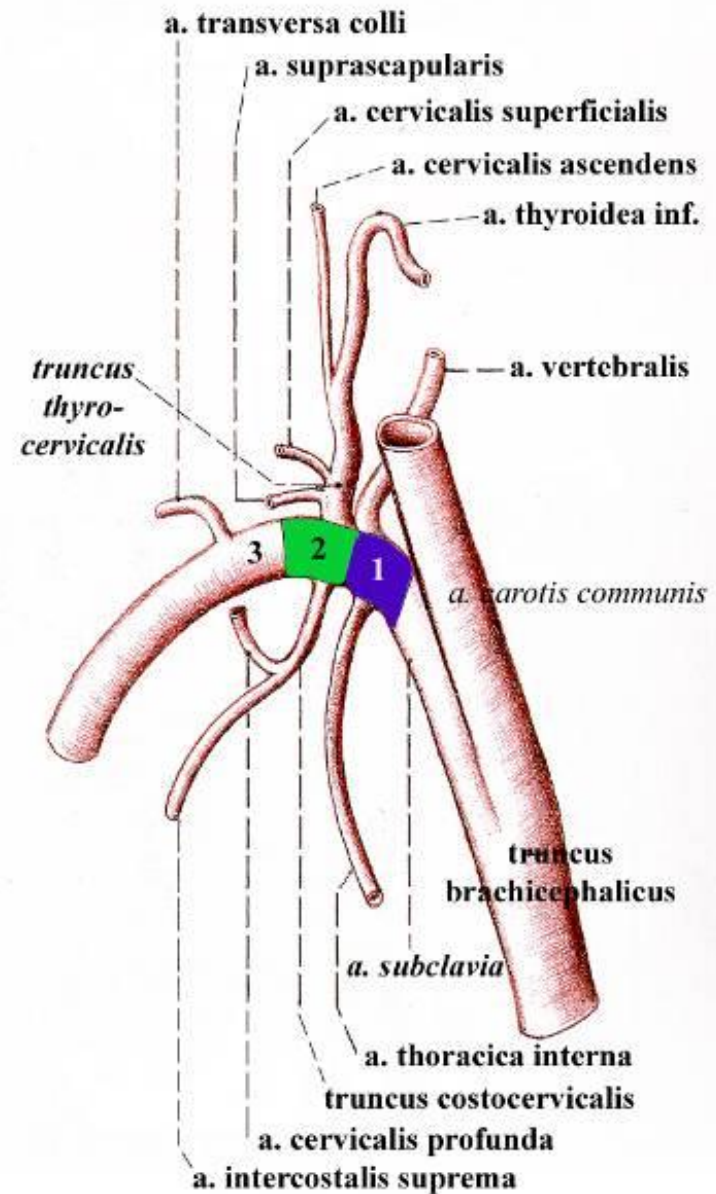
Arteria ophthalmica

- **a. centralis retinae**
 - pars extraocularis + intraocularis
- **a. lacrimalis**
- aa. musculares
- **a. supraorbitalis**
- **a. ethmoidalis anterior**
 - r. meningeus anterior
 - rr. septales anteriores
 - rr. nasales anteriores laterales
- **a. ethmoidalis posterior**
- a. supratrochlearis
- **a. dorsalis nasi**



Arteria subclavia

- apertura thoracis superior
- sulcus arteriae subclaviae costae primae
- fissura scalenorum
- 3 části
 - **pars intrascalenica**
 - a. vertebralis
 - a. thoracica interna
 - truncus thyrocervicalis
 - **pars interscalenica**
 - truncus costocervicalis
 - **pars extrascalenica**
 - (a. transversa coli)

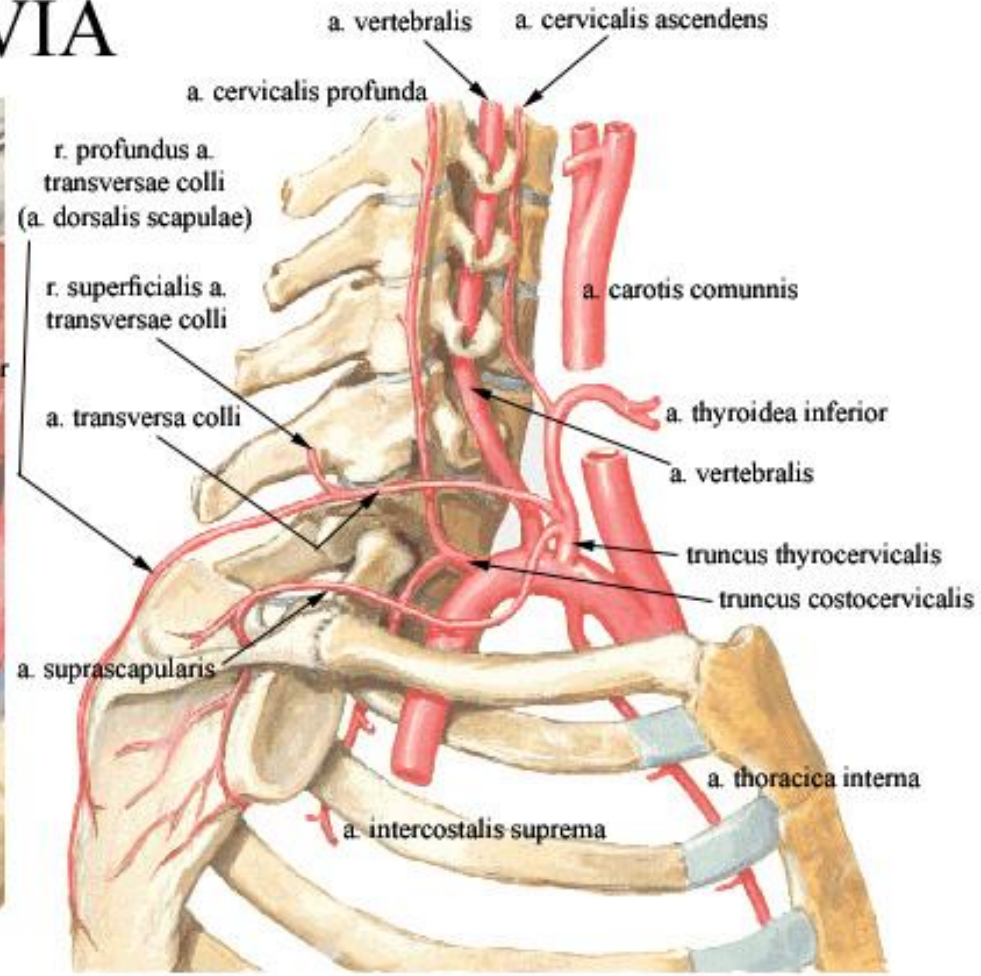
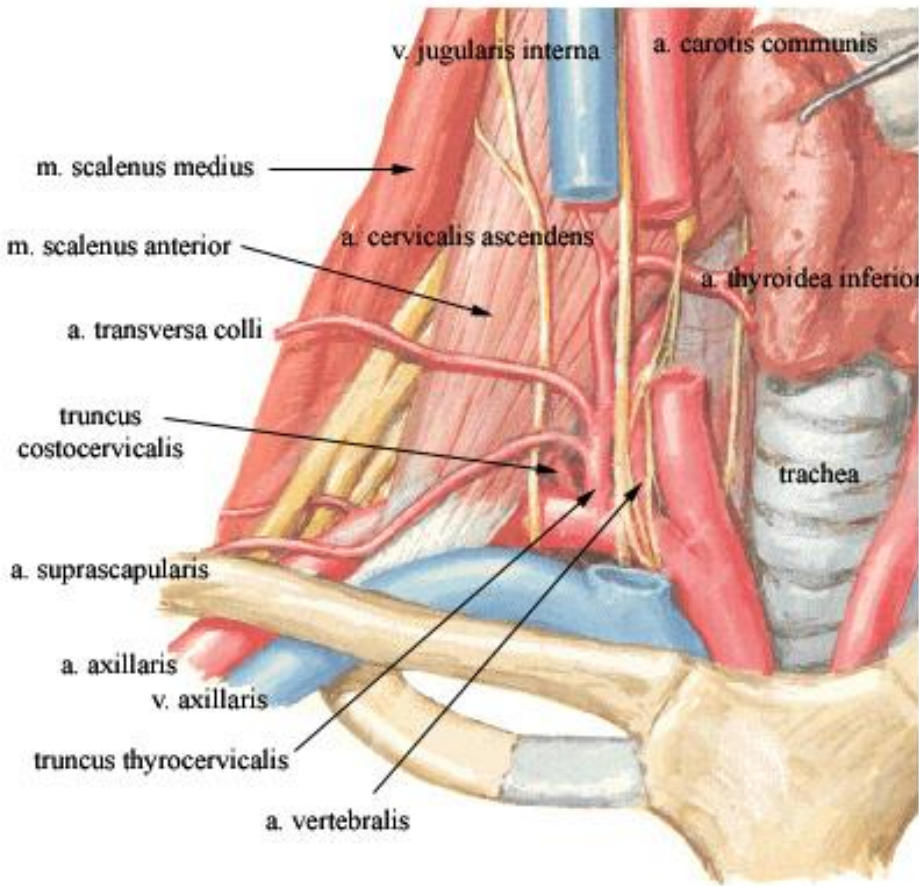


1 - pars INTRAscalenica

2 - pars INTERScalenica

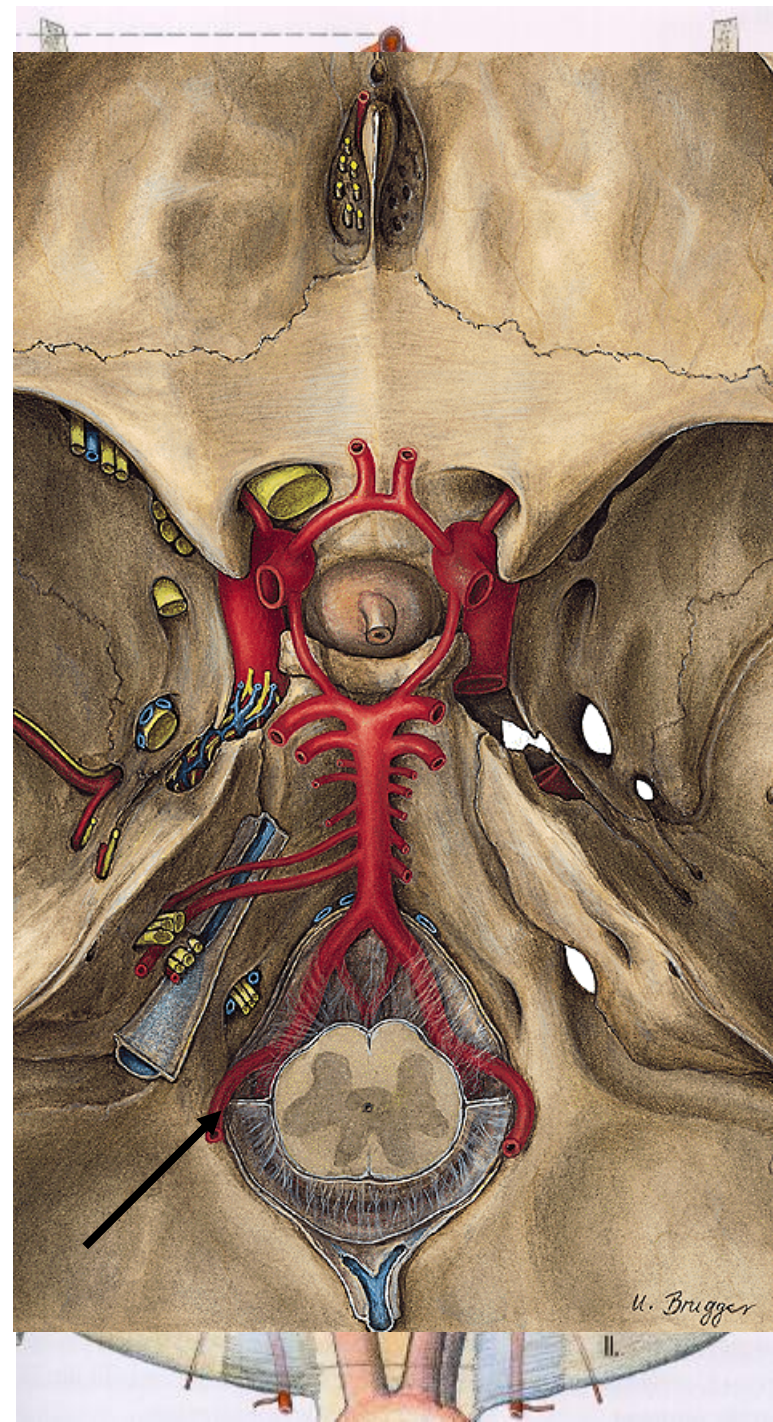
3 - pars EXTRAscalenica

ARTERIA SUBCLAVIA



Arteria vertebralis

- pars prevertebralis
- **pars cervicalis** s. transversaria
 - forr. transversaria C6-C1
 - rr. spinales et musculares
- **pars atlantica**
 - sulcus a.v. (canalis a.v.)
 - membrana atlantooccipitalis post.
 - foramen magnum
- **pars intracranialis**
 - a. inferior posterior cerebelli
 - a. spinalis post.
 - **a. spinalis ant.**
 - nepárová ze párových bezejmenných zdrojnic

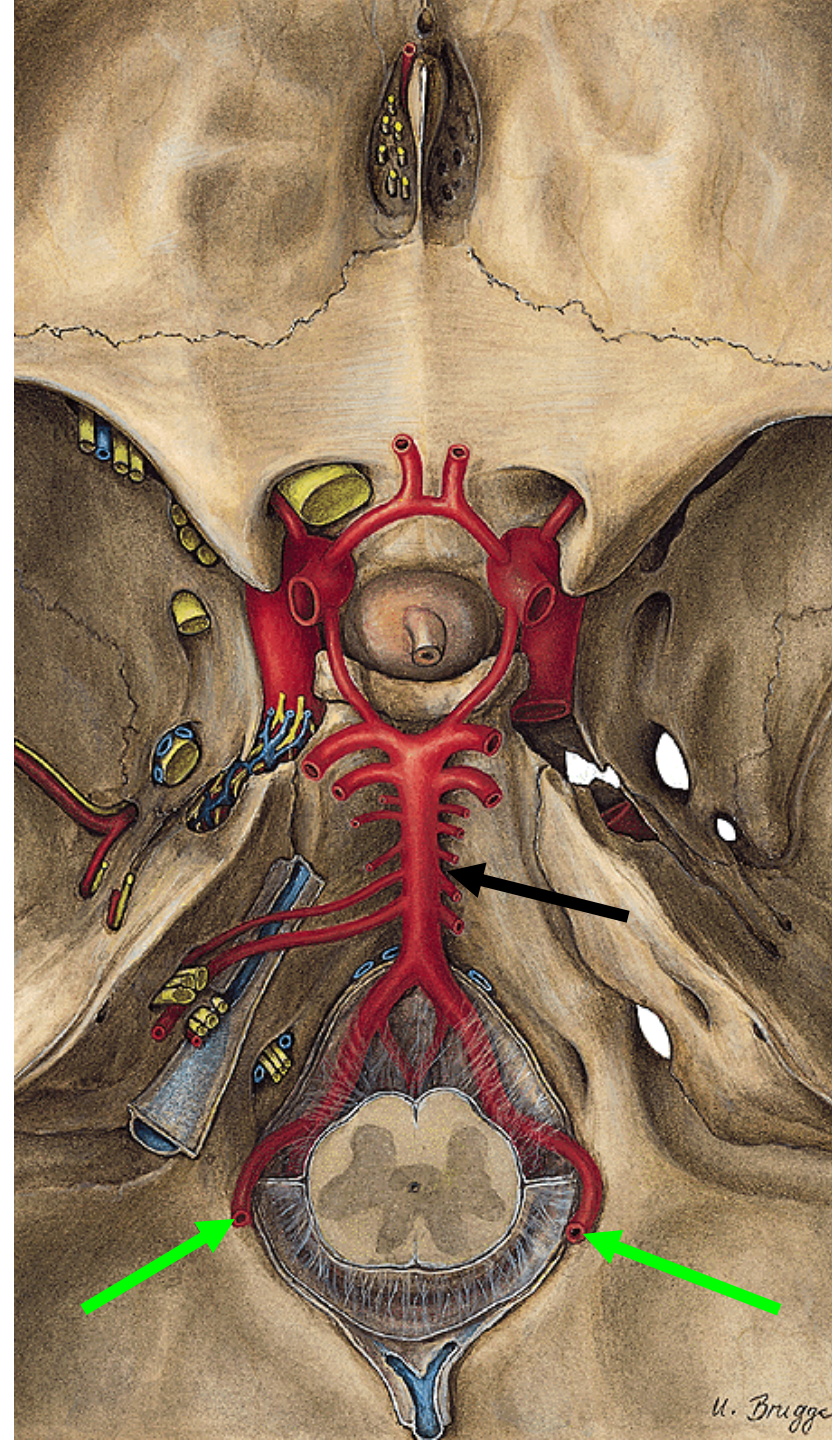


Arteria basilaris

2 aa. vertebrales → **a. basilaris**

- a. inferior anterior cerebelli
 - **a. labyrinthi**
 - a. superior cerebelli
- **aa. cerebri posteriores**

circulus arteriosus cerebri *Willisi*

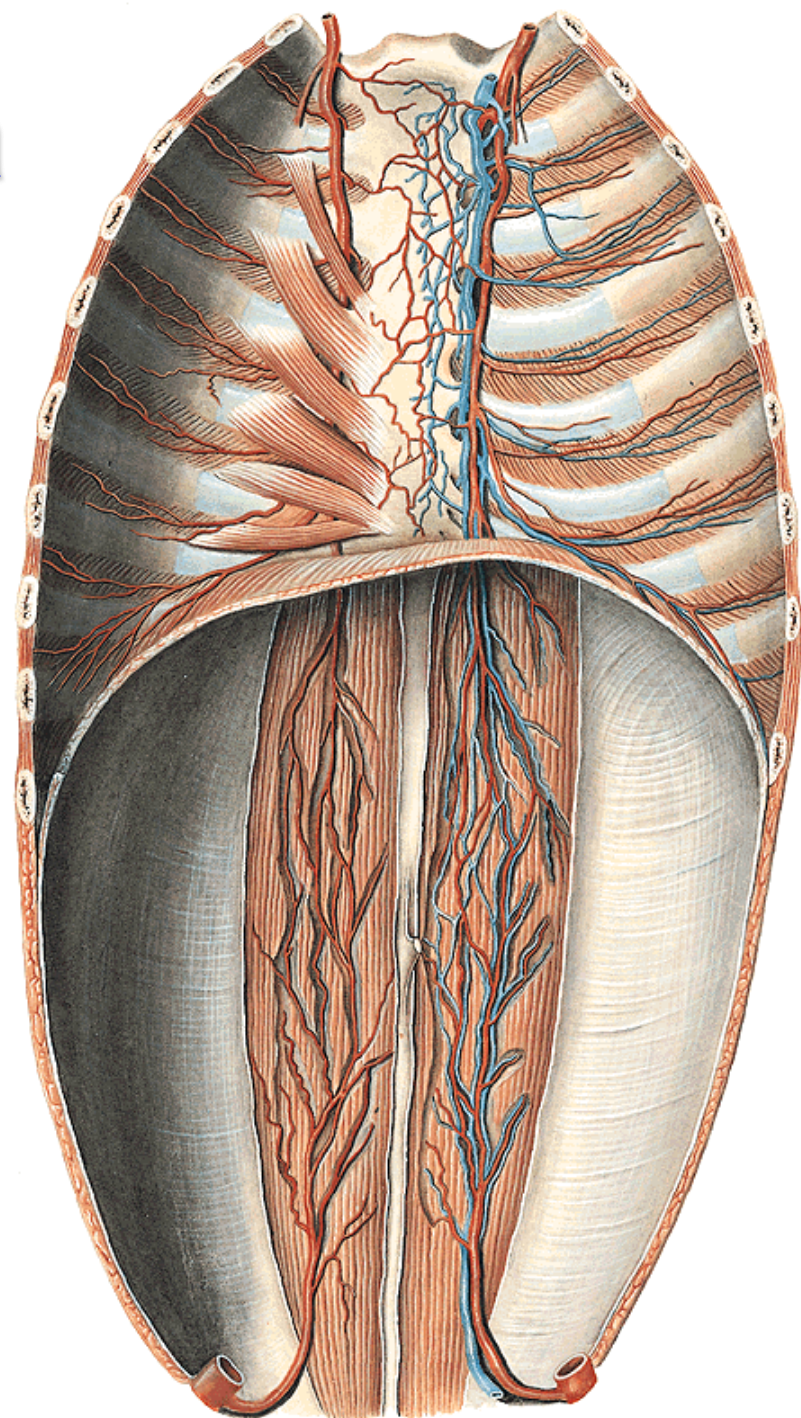


A. thoracica interna

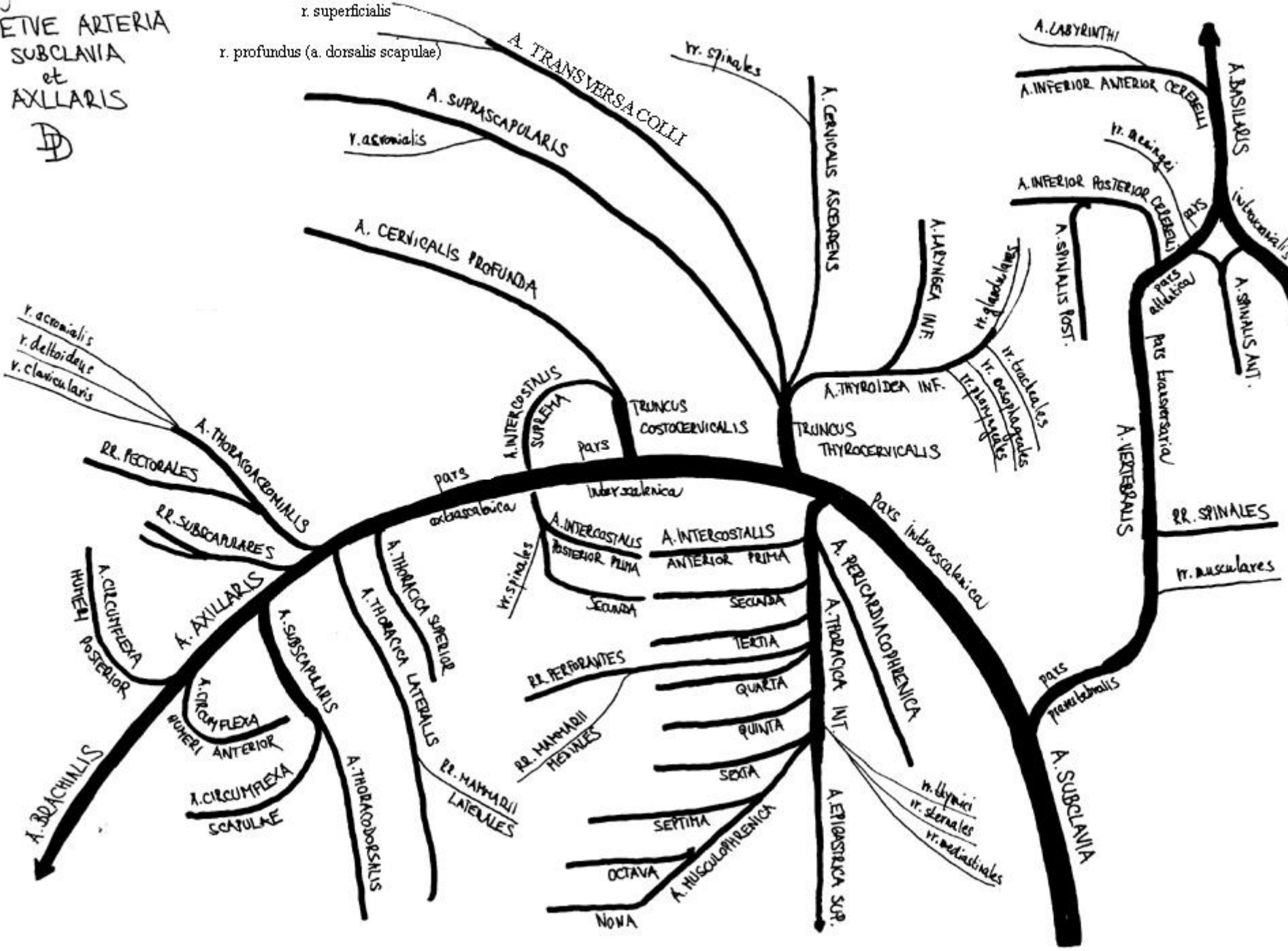
- a. pericardiacophrenica
- **rr. intercostales anteriores**

koncové větve:

- a. musculophrenica
- a. epigastrica superior
před trigonum sternocostale
 - anastomóza s a. epigastrica inferior uvnitř vagina m. recti abdominis

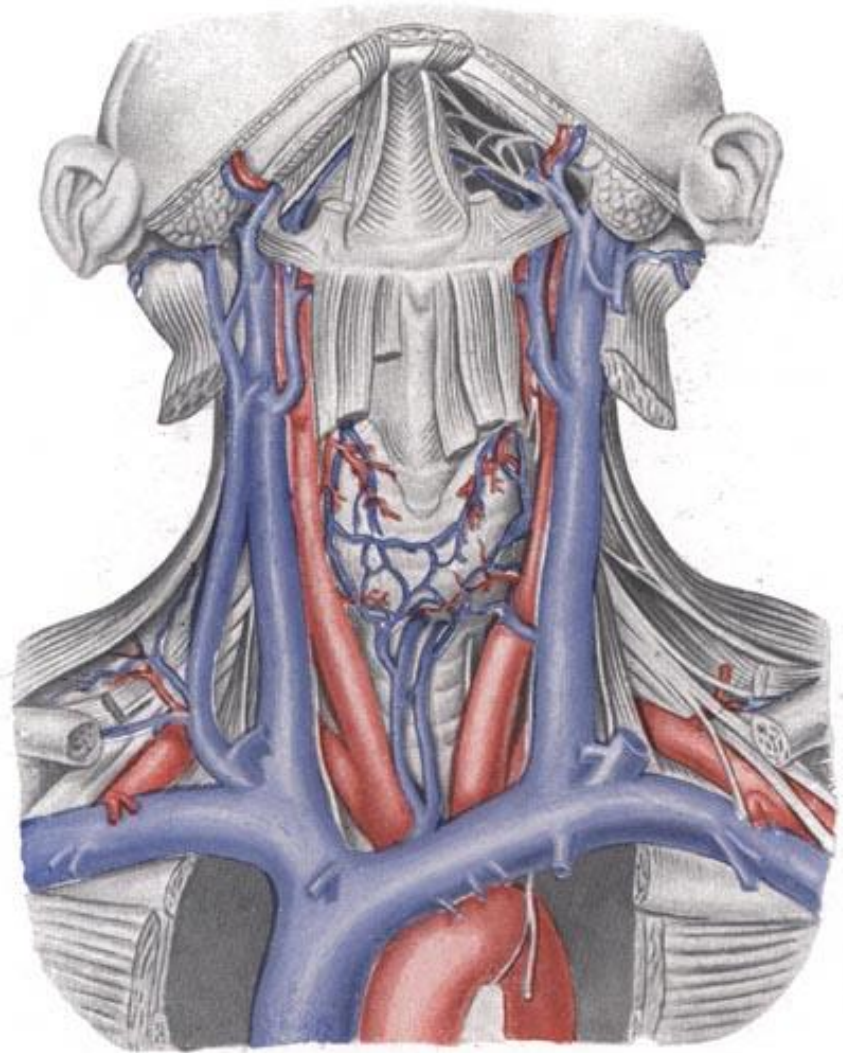


VETIVE ARTERIA
SUBCLAVIA
et
AXILLARIS

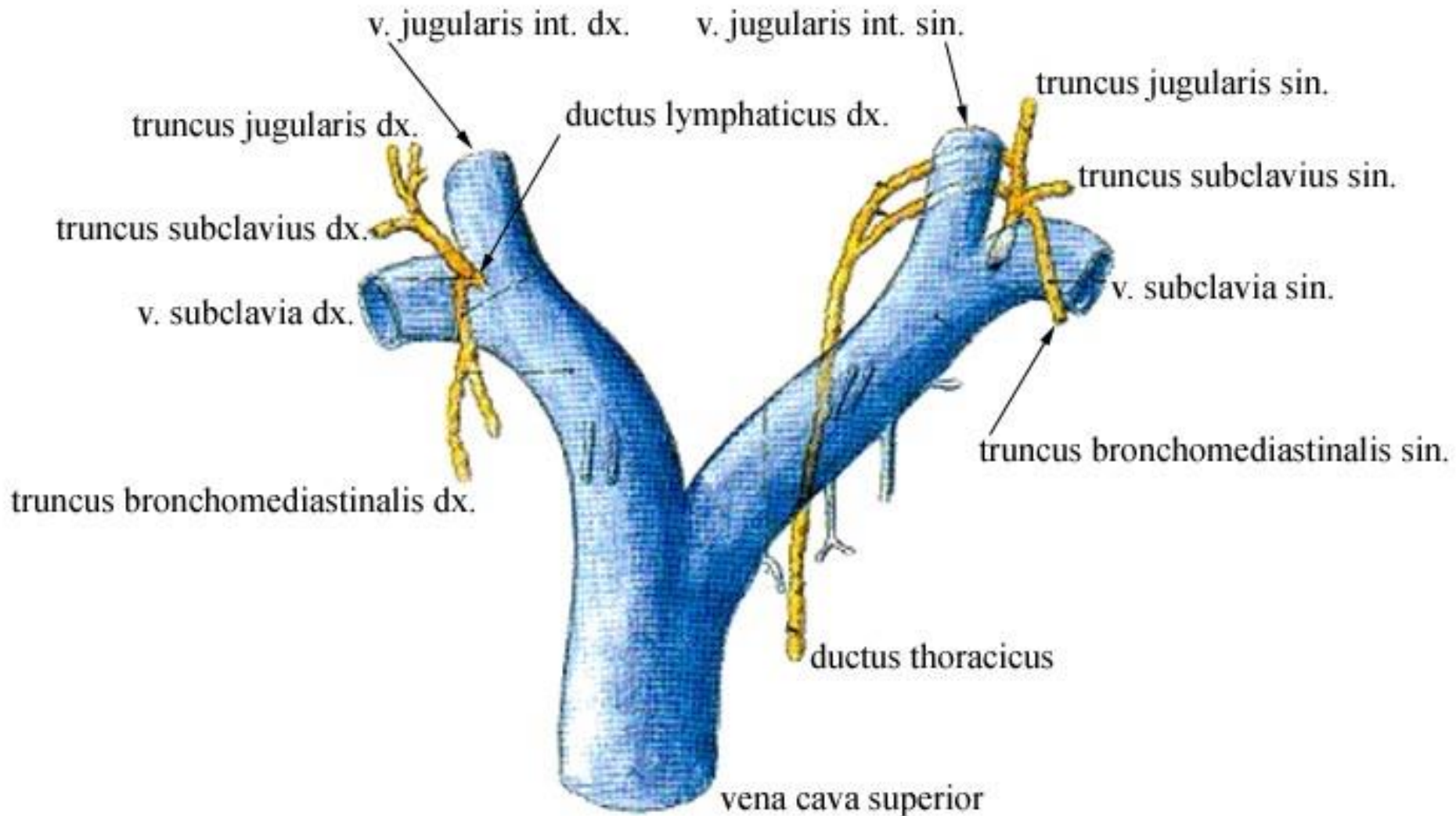


Vena jugularis interna (Vnitřní hrdelnice)

- bulbus superior – začátek
- bulbus inferior – konec
 - do angulus venosus
- vagina carotica
 - součást lamina pretrachealis fasciae cervicalis
- angulus venosus *Pirogovi*
 - *sinister*: ductus thoracicus
 - *dexter*: ductus lymphaticus dexter



ANGULUS VENOSUS PIROGOVI

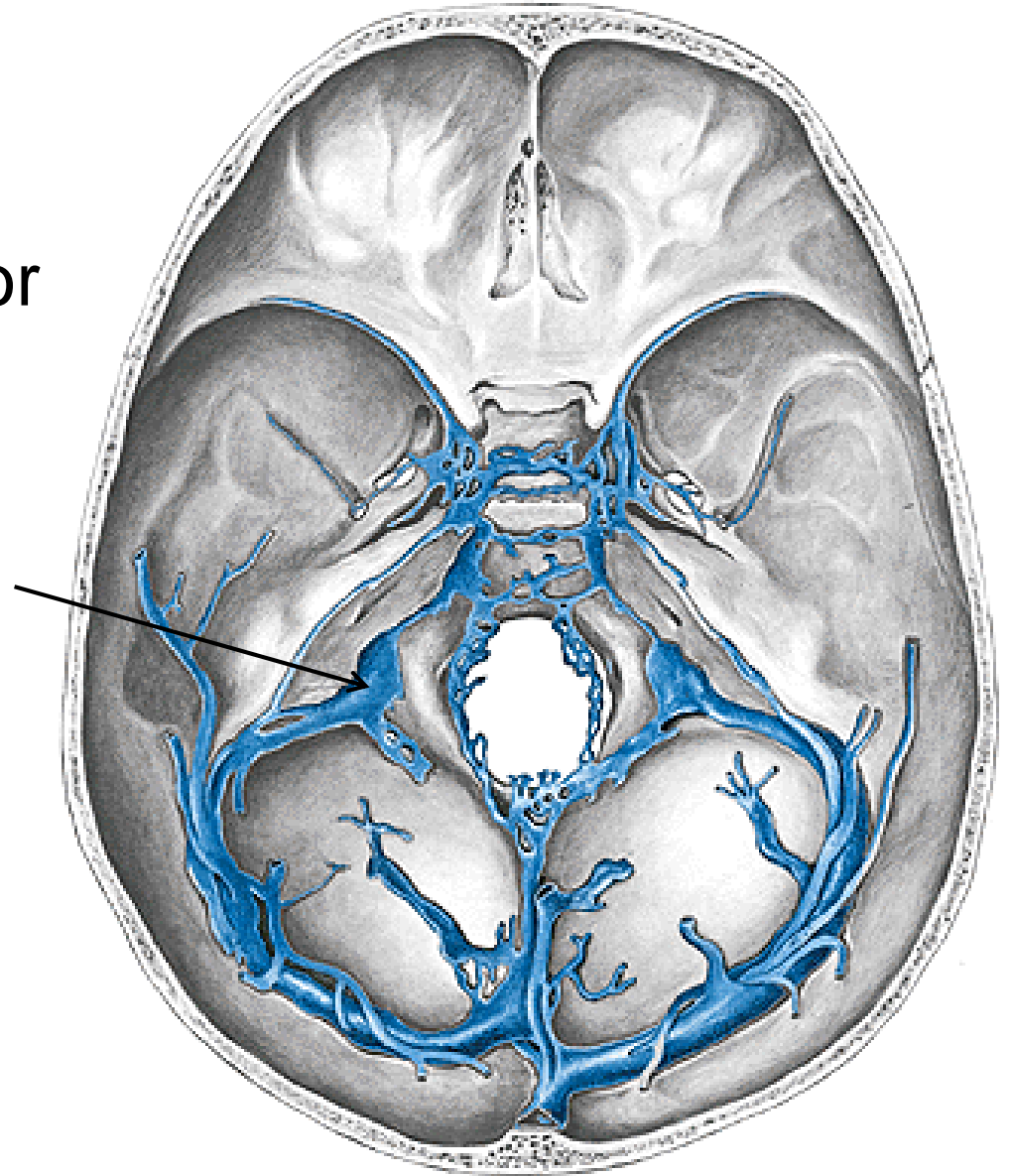


Vena jugularis interna – začátek

- sinus sigmoideus +
- sinus petrosus inferior

→ **bulbus superior
venae jugularis
internae**

*foramen jugulare
dorzolaterální část*



Vena jugularis interna – přehled přítoků

nitrolebeční přítoky

- **splavy** (*sinus durae matris*)
- **mozkové** (*vv. cerebri*)
- **plenové** (*vv. meningeae*)
- **píchatkové** (*vv. diploicae*)
- **bludišťové** (*vv. labyrinthi*)
- **výtokové** (*vv. emissariae*)
- **oční** (*vv. ophthalmicae*)

mimolebeční přítoky

- **obličejové**
 - v. retromandibularis
 - **v. facialis**
 - **v. lingualis**
- **povrchové krční**
 - **v. jugularis ext.**
 - **v. jugularis ant.**
- **hluboké krční**
 - vv. pharyngeae
 - vv. thyroideae

Sinus durae matris

- stěnu tvoří tvrdá plena
- **confluens sinuum**

nepárové:

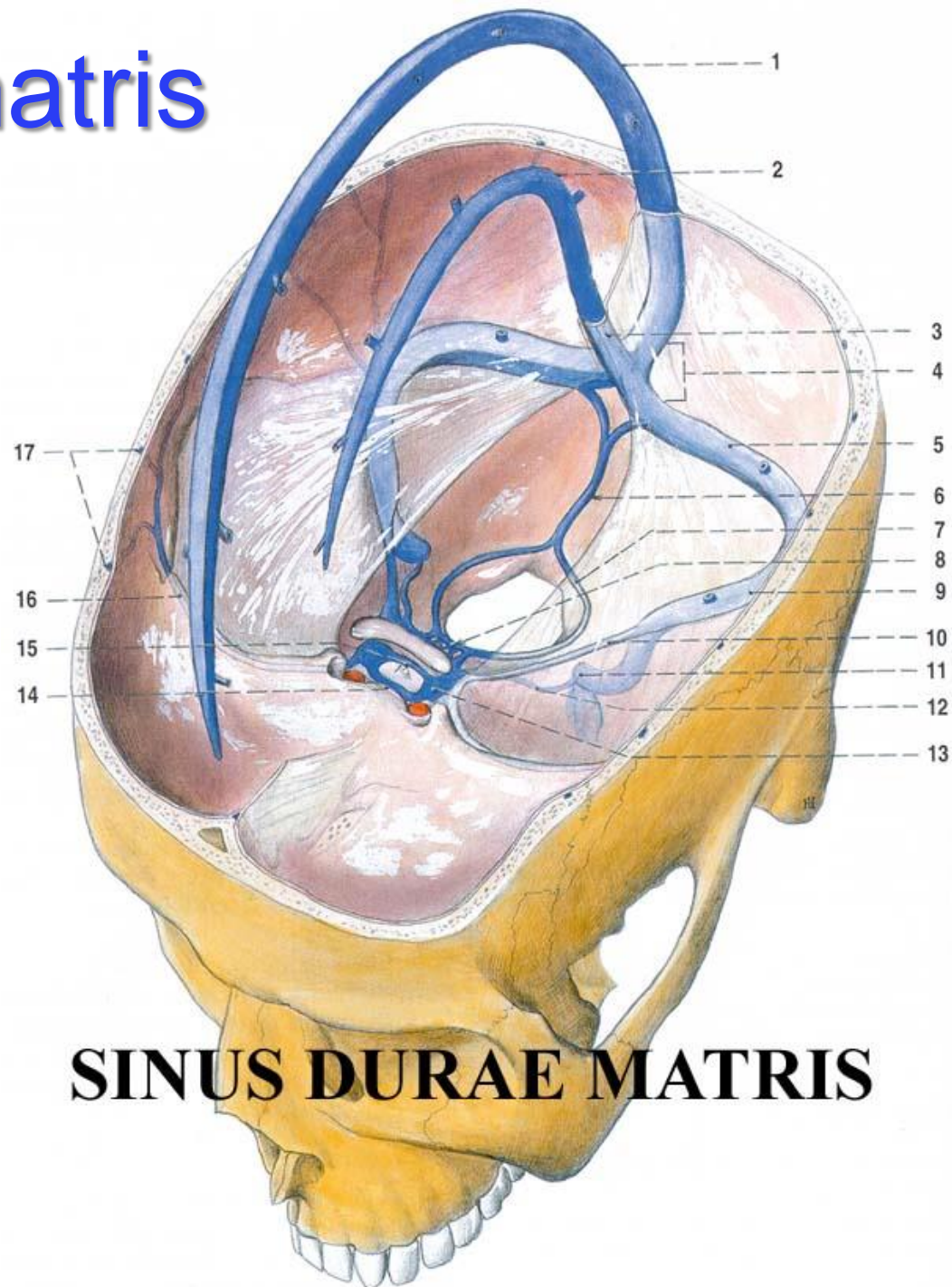
s. sagittalis sup. (1)

s. sagittalis inf. (2)

s. rectus (3)

s. occipitalis (6)

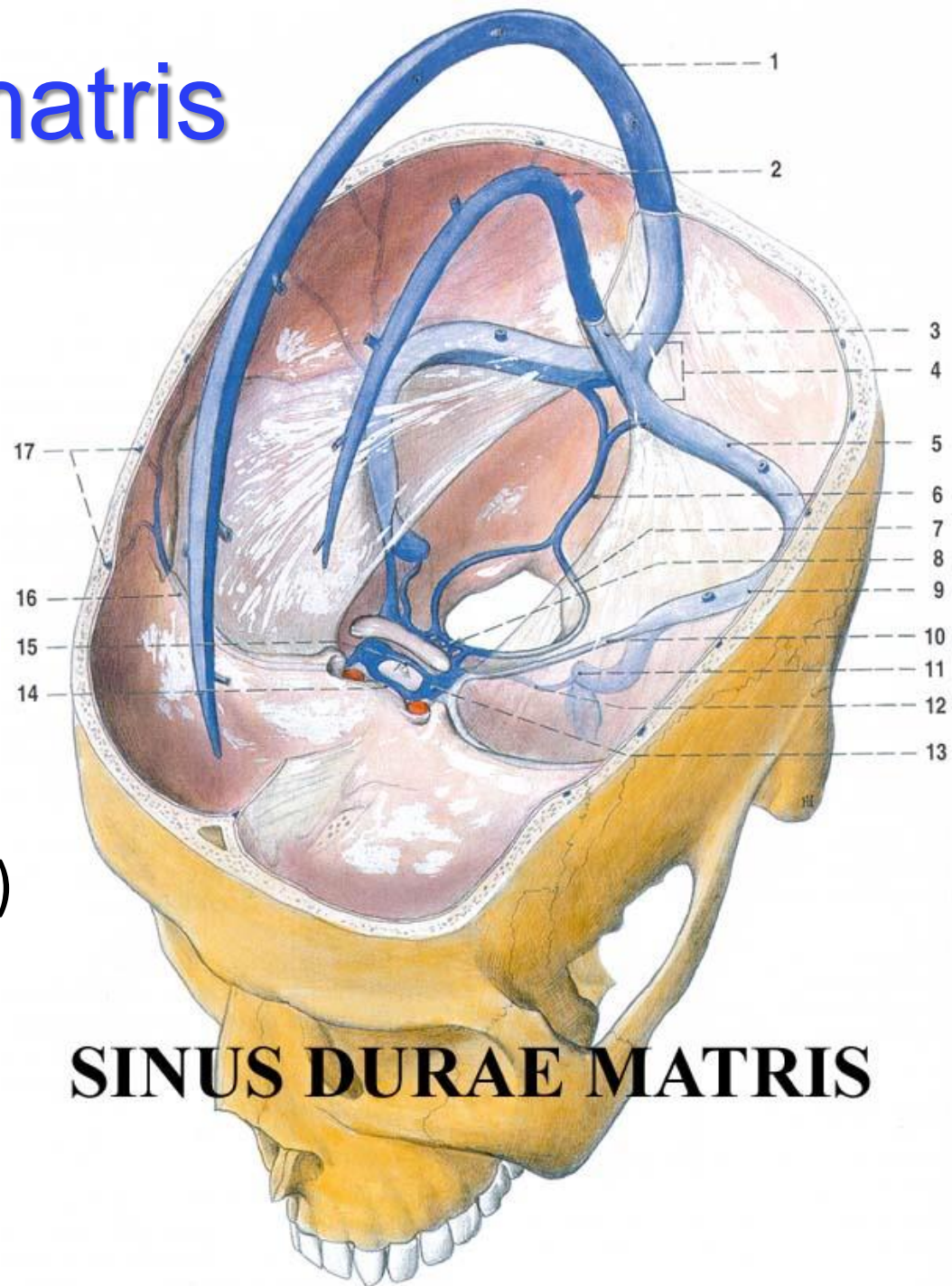
plexus basilaris (8)



Sinus durae matris

párové:

- s. transversus (5)
- s. sigmoideus (11)
- s. petrosus sup.(10)
- s. petrosus inf. (12)
- s. marginalis (7)
- s. cavernosus (13)
- s. intercavernosus ant. (14)
- s. intercavernosus post. (15)
- s. sphenoparietalis (16)
- s. petrosquamosus



Sinus cavernosus

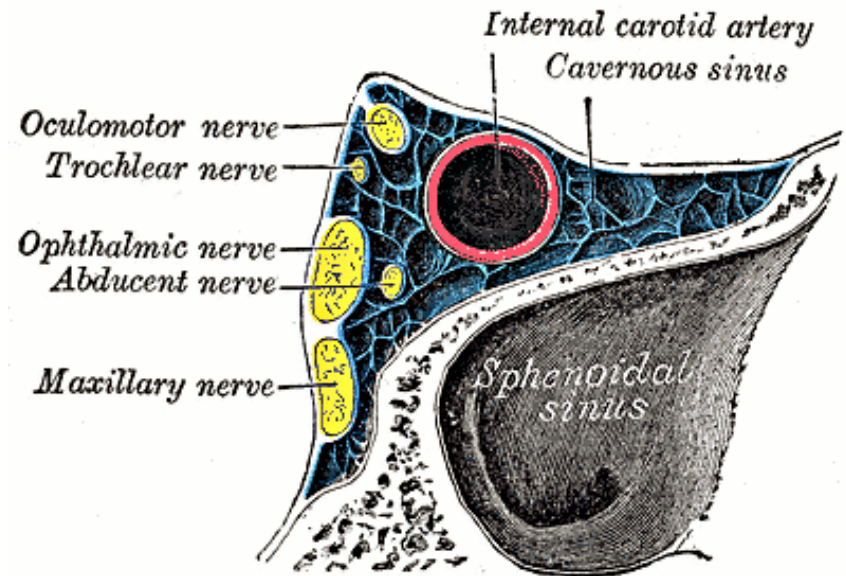
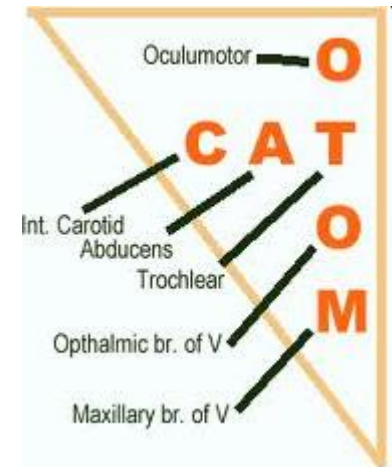
- po stranách tureckého sedla
 - dutinky (mnoho chordae Willisii)
- mediálně:

- a. carotis int.
- n. VI.

laterálně:

- n. III
- n. IV
- n. V1
- n. V2

trombóza, šíření infekce přes očníci



Povrchové žíly krku

povrchové žíly krku

mezi platysmatem a lamina superficialis fasciae cervicalis

- v. jugularis externa

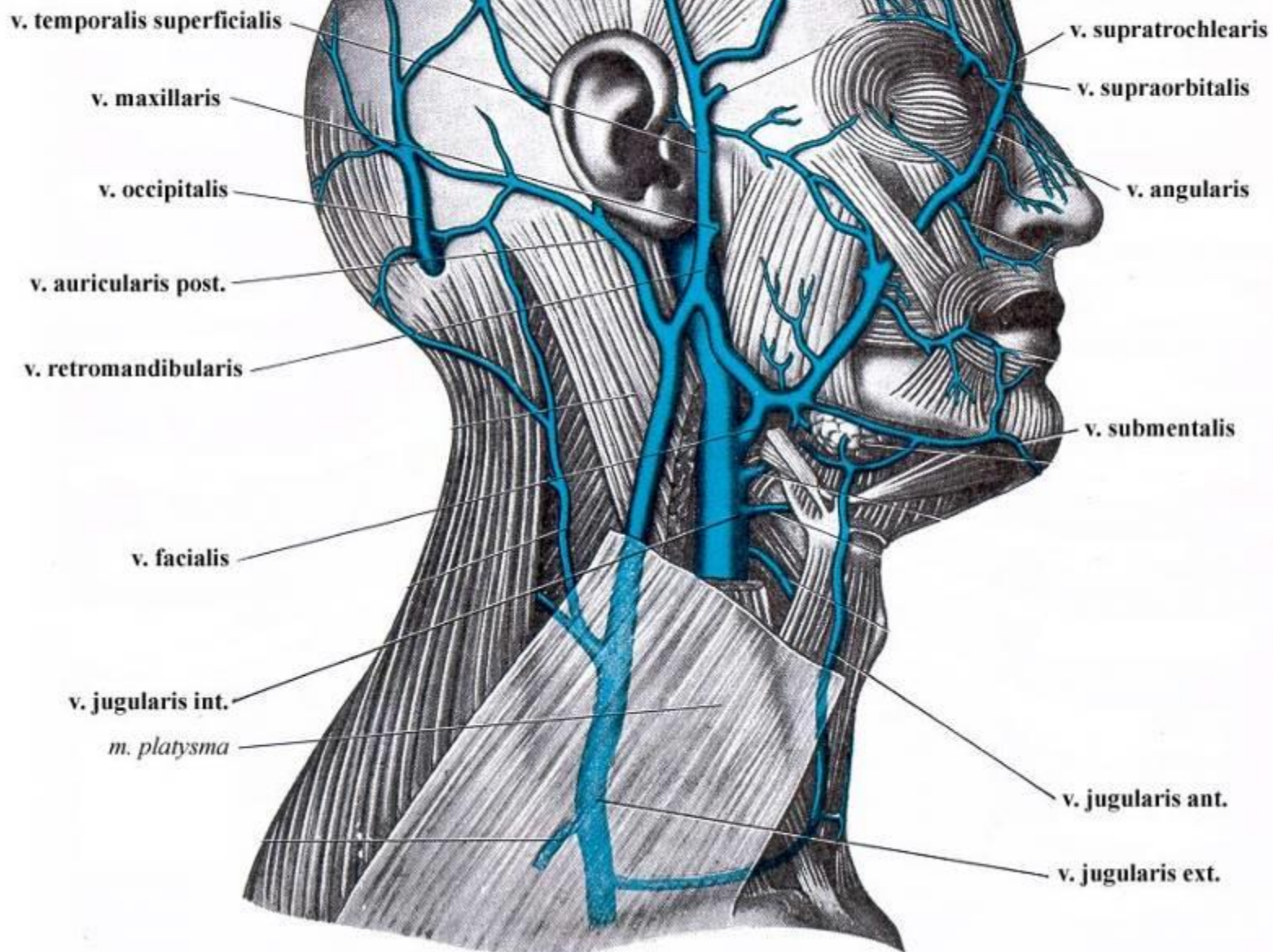
- v. auricularis post.
- zadní větvení v. retromandibularis
- konec: angulus venosus

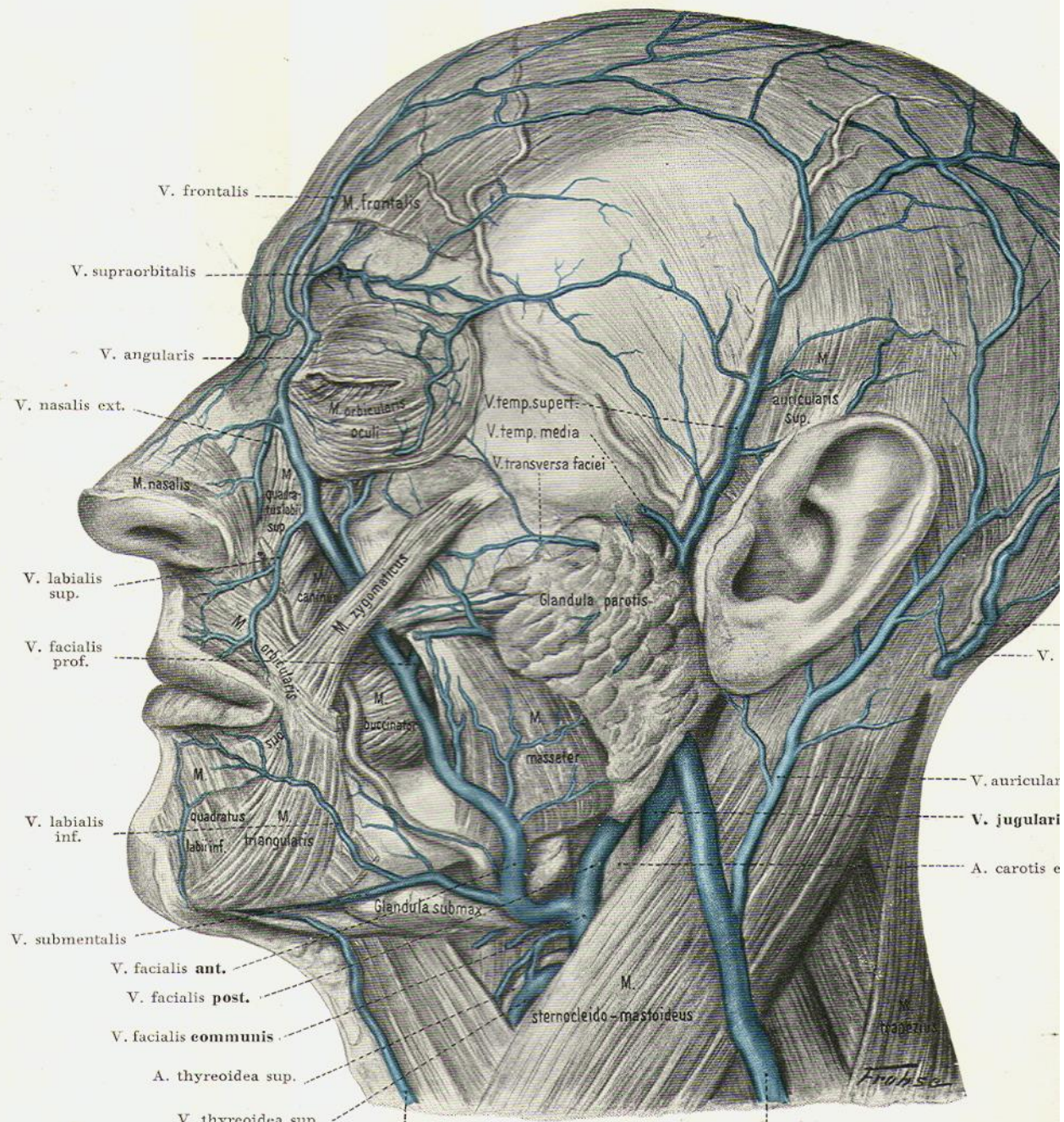
- v. jugularis anterior

- soutok povrchových podčelistních žil
- arcus venosus jugularis (!*tracheotomia inferior!*)
- konec: v. jugularis ext.

měnlivé vyústění do oblasti angulus venosus

ŽÍLY HLAVY





V. frontalis
 V. supraorbitalis
 V. angularis
 V. nasalis ext.
 V. labialis sup.
 V. facialis prof.
 V. labialis inf.
 V. submental
 V. facialis ant.
 V. facialis post.
 V. facialis communis
 A. thyroidea sup.
 V. thyroidea sup.

V. jugularis ant.

V. temp. superf.
 V. temp. media
 V. transversa faciei

V.
 V. auricular
 V. jugulari
 A. carotis e

V. jugularis ext.

Fronse

Hlavové nervy (*Nervi craniales*)

Číslo	Latinský název	Český název
I	N. olfactorius	Čichový nerv
II	N. opticus	Zrakový nerv
III	N. oculomotorius	Okohybný nerv
IV	N. trochlearis	Kladkový nerv
V	N. trigeminus	Trojklaný nerv
V1	N. ophthalmicus	Oční nerv
V2	N. maxillaris	Čelistní nerv
V3	N. mandibularis	Sáňový nerv
VI	N. abducens	Odtahovací nerv
VII	N. facialis	Lícní nerv
VIII	N. vestibulocochlearis	Sluchorovnovážný nerv
IX	N. glossopharyngeus	Jazykohltanový nerv
X	N. vagus	Bloudivý nerv
XI	N. accessorius	Přídatný nerv
XII	N. hypoglossus	Podjazykový nerv

— sensory fibres
— motor fibres

Optic (II)
sensory: eye



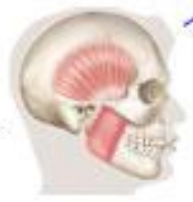
Trochlear (IV)
motor: superior oblique muscle

Abducent (VI)
motor: external rectus muscle



Trigeminal (V)
sensory: face, sinuses, teeth, etc.
motor: muscles of mastication

Oculomotor (III)
motor: all eye muscles except those supplied by IV and VI



Olfactory (I)
sensory: nose



Intermediate motor: submaxillary and sublingual gland
sensory: anterior part of tongue and soft palate



Glossopharyngeal (IX)
motor: pharyngeal musculature
sensory: posterior part of tongue, tonsil, pharynx



Vestibulocochlear (VIII)
sensory: inner ear



Vagus (X)
motor: heart, lungs, bronchi, gastrointestinal tract
sensory: heart, lungs, bronchi, trachea, larynx, pharynx, gastrointestinal tract, external ear



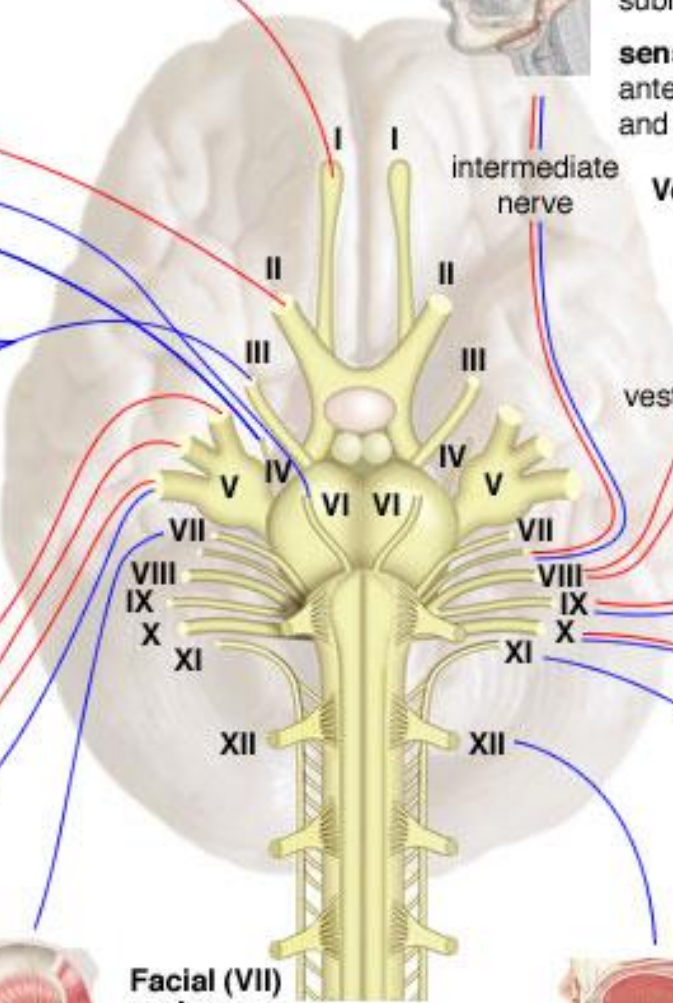
Facial (VII)
motor: muscles of the face



Hypoglossal (XII)
motor: muscles of the tongue



Accessory (XI)
motor: sternocleidomastoid and trapezius muscles



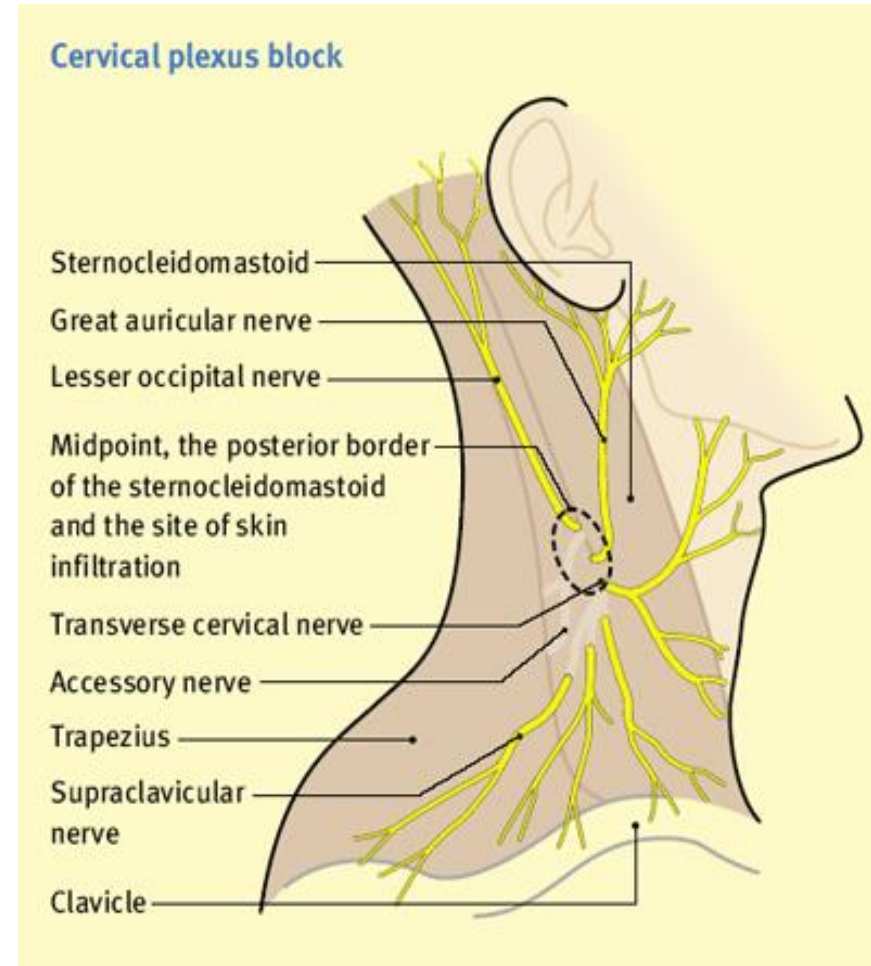
Plexus cervicalis (C1–C4)

senzitivní větve

- punctum nervosum *Jonáši*
- n. occipitalis minor
- n. auricularis magnus
- n. transversus colli
- nn. supraclaviculares
 - mediales, intermedii, laterales

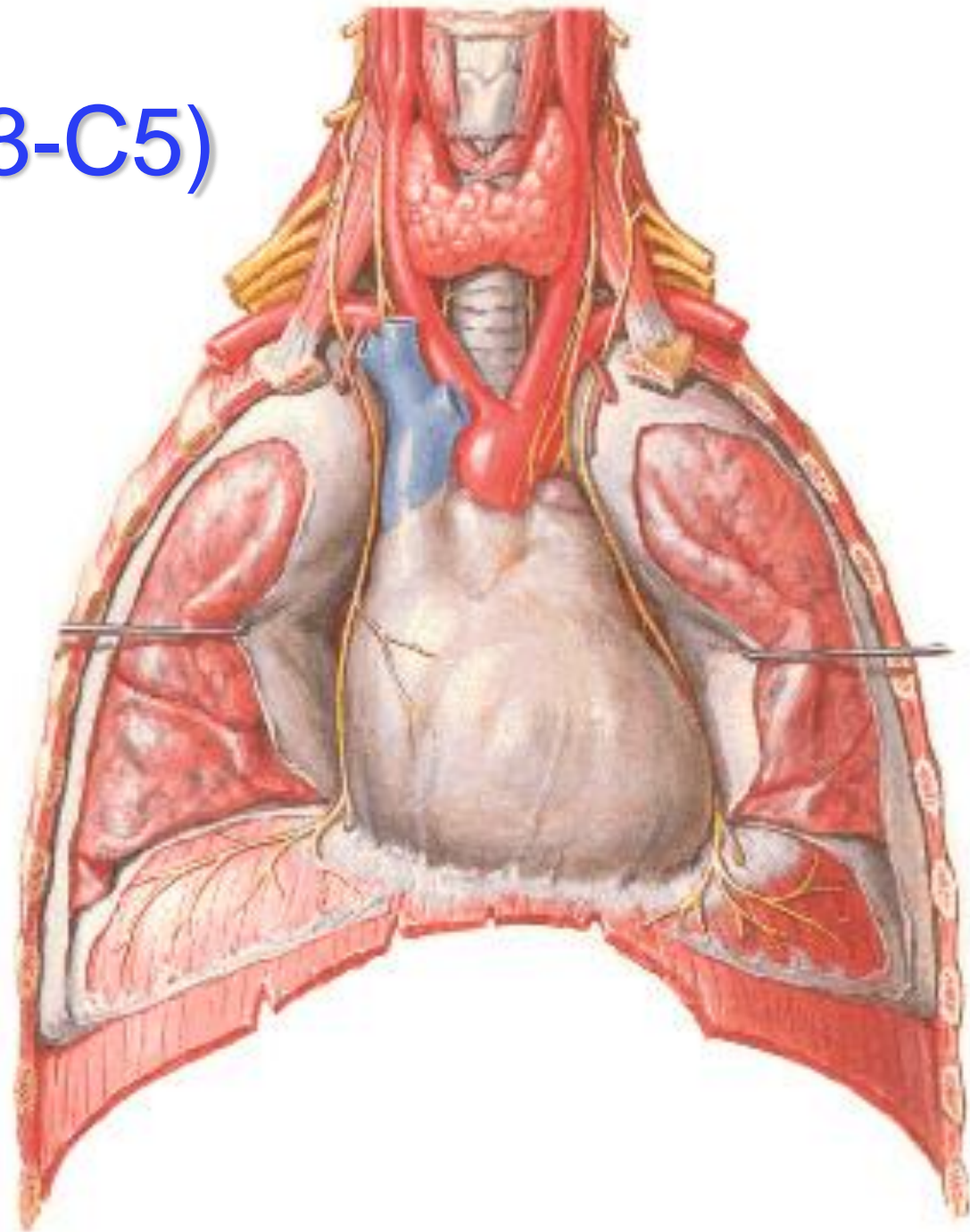
motorické větve

- pro svaly krku
- n. phrenicus



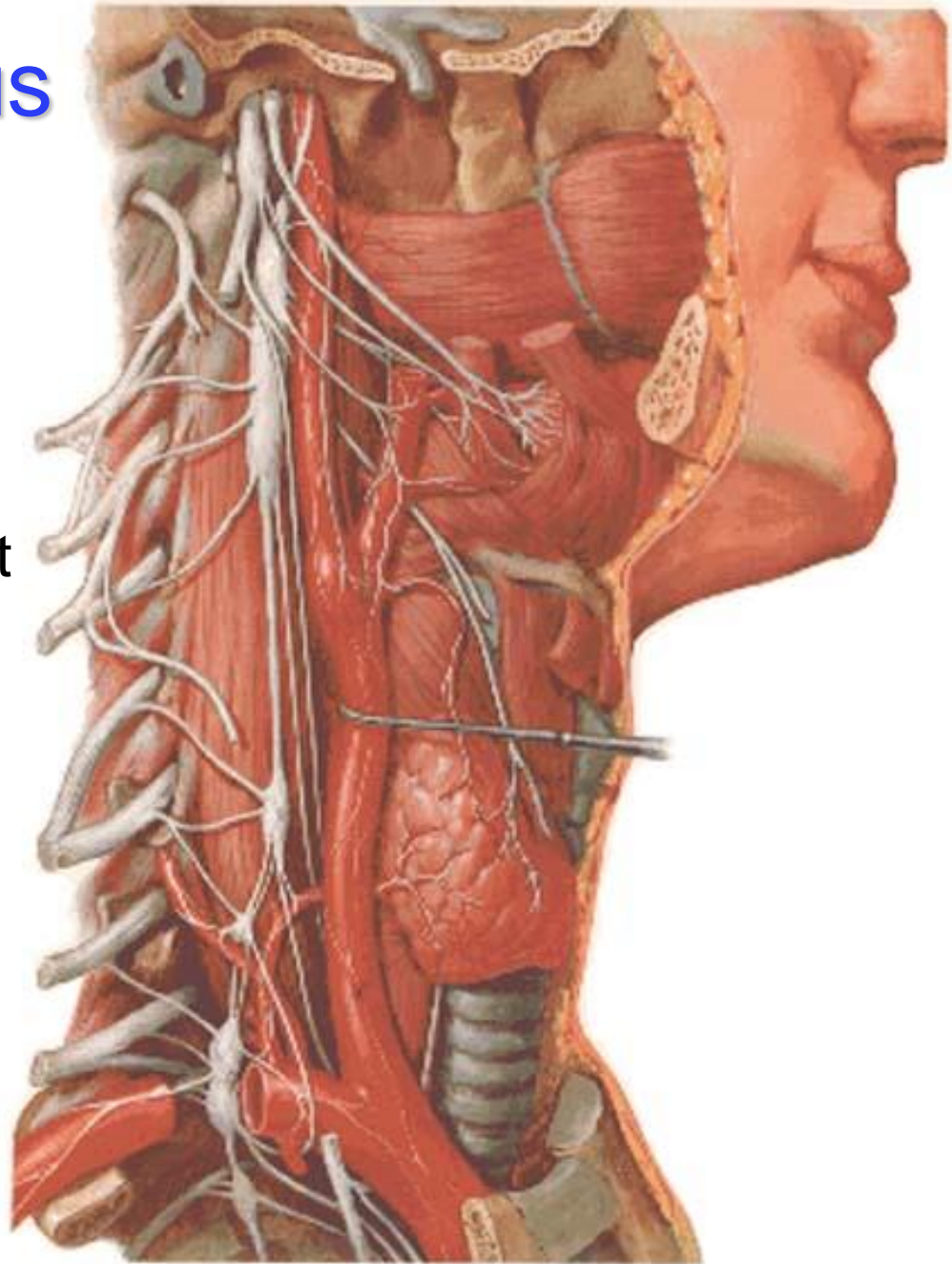
N. phrenicus (C3-C5)

- smíšený nerv
- hlavní kořen C4 (přídatný C3 a C5)
- motoricky: **bránice**
- senzitivně:
 - pleura mediastinalis + diaphragmatica
 - pericardium parietale
 - peritoneum parietale (v rozsahu bránice, jater a žlučníku)



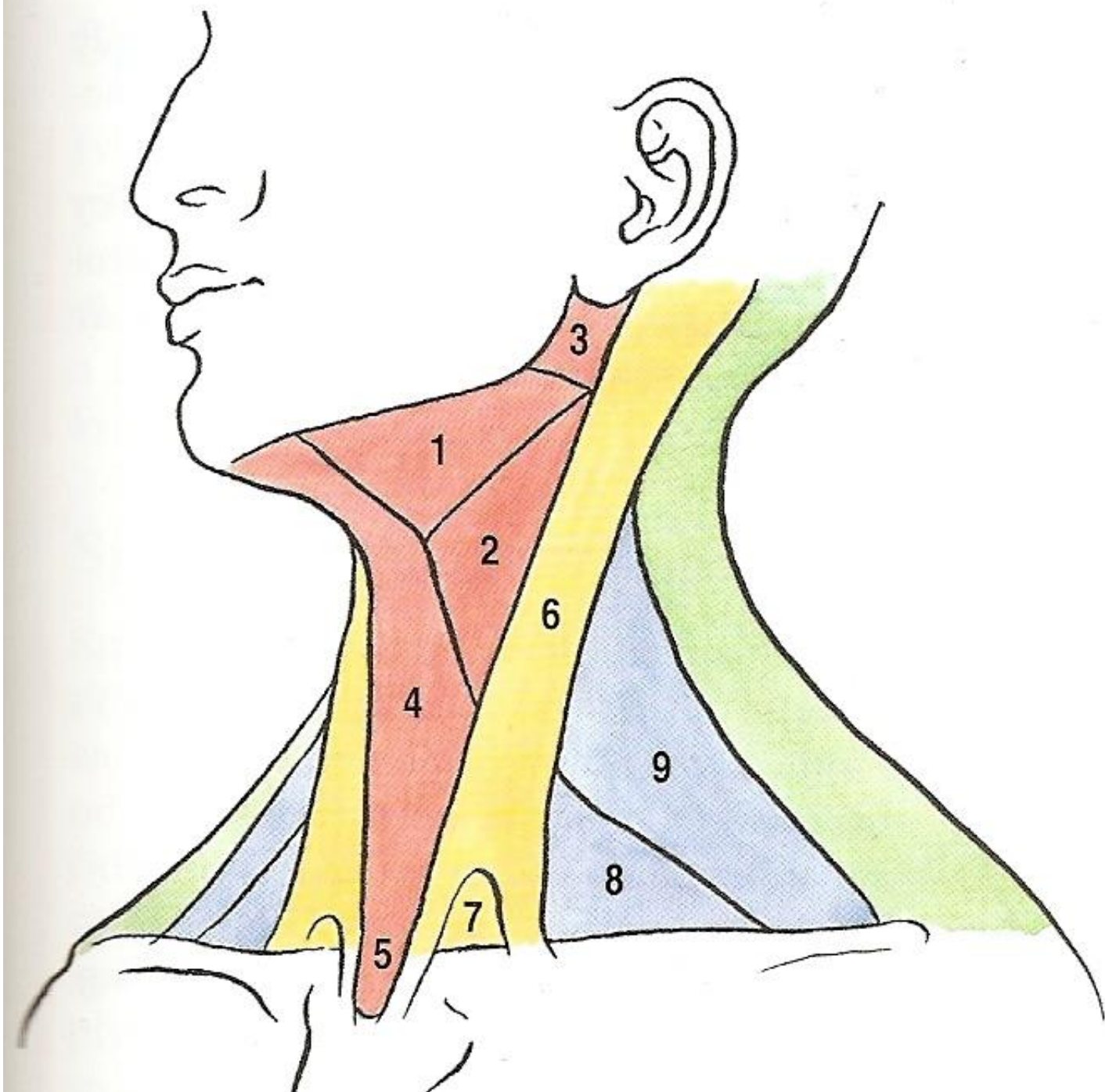
Truncus sympathicus

- sympatický systém ANS
- 21-25 ganglia trunci sympathici
- před obratli po stranách jejich těl ve fascii
- spatium parapharyngeum et paraviscerale
- **ganglion cervicale superius**
 - plexus caroticus internus
 - nn. caroticotympanici
 - n. petrosus profundus
 - plexus caroticus externus
- ganglion cervicale medium
- **ganglion stellatum = cervicothoracicum**
 - plexus subclavius

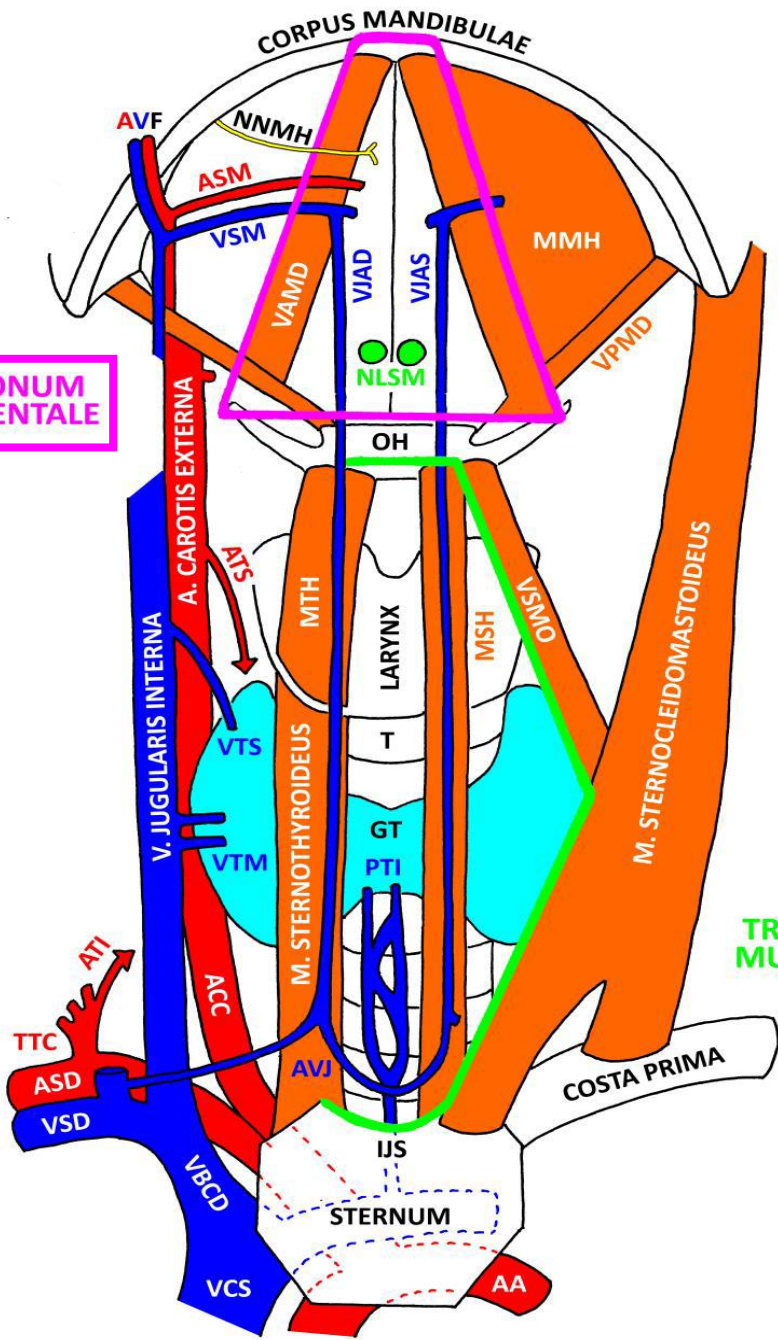


Trojúhelníky na krku

- regio colli anterior
 - trigonum submandibulare
 - trigonum submentale
 - trigonum caroticum (*Malgaignei*)
 - trigonum omotracheale = musculare
- regio colli lateralis
 - trigonum omoclaviculare
 - trigonum omotrapezium
 - fossa supraclavicularis minor
 - fissura scalenorum
 - trigonum scalenovertebrale



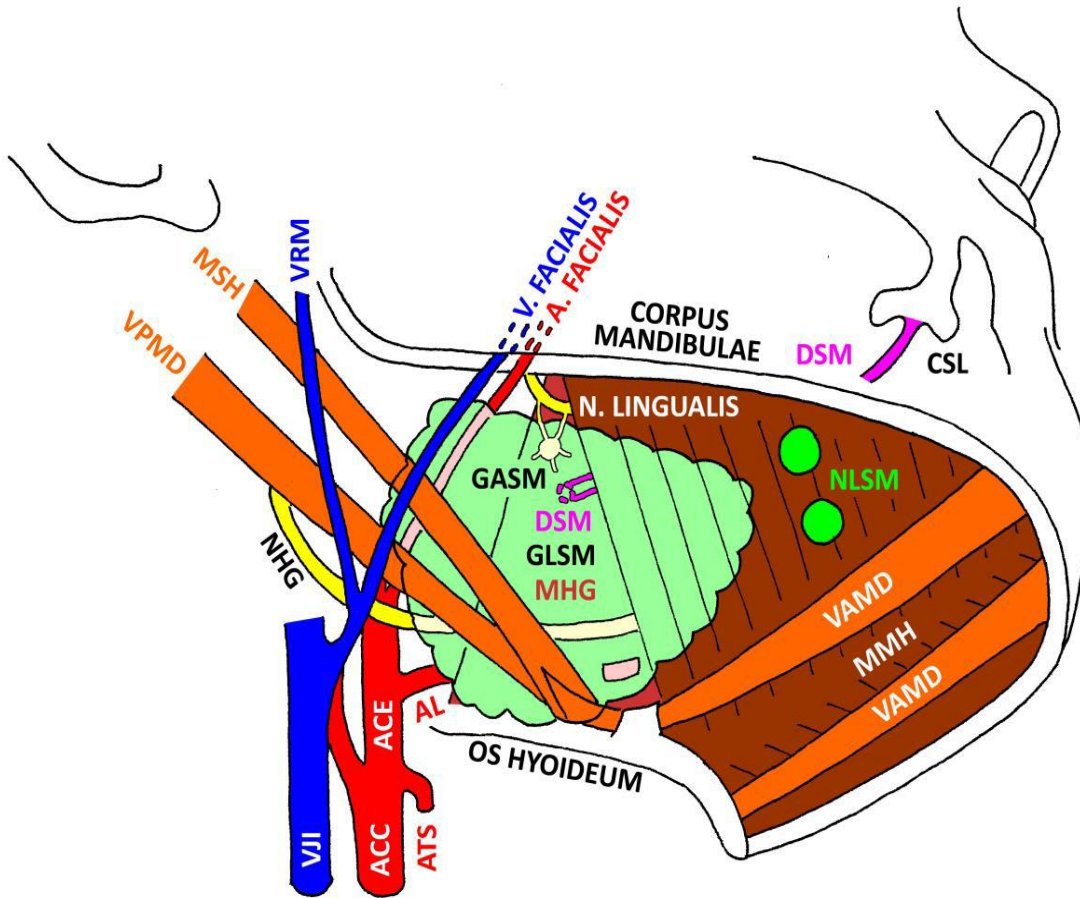
TRIGONUM
SUBMENTALE



TRIGONUM
MUSCULARE

- AVF - A. ET V. FACIALIS
- NNMH - NN. MYLOHYOIDEI
- ASM - A. SUBMENTALIS
- VSM - V. SUBMENTALIS
- VAMD - VENTER ANT. M. DIGASTRICI
- VIAD - V. JUGULARIS ANT. DX.
- VIAS - V. JUGULARIS ANT. SIN.
- NLSM - N. L. SUBMENTALES
- MMH - M. MYLOHYOIDEUS
- VPMD - VENTER POST. M. DIGASTRICI
- OH - OS HYOIDEUM
- ATS - A. THYROIDEA SUP.
- MTH - M. THYROHYOIDEUS
- MSH - M. STERNOHYOIDEUS
- VSMO - VENTER SUP. M. OMOHYOIDEI
- T - TRACHEA
- VTS - V. THYROIDEA SUP.
- VTM - V. THYROIDEA MEDIA
- GT - GLANDULA THYROIDEA
- PTI - PLEXUS THYROIDEUS IMPAR
- ACC - A. CAROTIS COMMUNIS
- AVJ - ARCUS VENOSUS JUGULI
- IJS - INCISURA JUGULARIS STERNI
- ATI - A. THYROIDEA INF.
- TTC - TRUNCUS THYROCERVICALIS
- ASD - A. SUBCLAVIA DX.
- VSD - V. SUBCLAVIA DX.
- VBCD - V. BRACHIOCEPHALICA DX.
- VCS - V. CAVA SUP.
- AA - ARCUS AORTAE

Trigonum submandibulare



- VRM - V. RETROMANDIBULARIS
- MSH - M. STYLOHYOIDEUS
- VPMD - VENTER POST. M. DIGASTRICI
- NHG - N. HYOGLOSSUS
- GASM - GANGLION SUBMANDIBULARE
- DSM - DUCTUS SUBMANDIBULARIS
- GLSM - GLANDULA SUBMANDIBULARIS
- MHG - M. HYOGLOSSUS
- AL - A. LIGUALIS
- ACE - A. CAROTIS EXTERNA
- VJI - V. JUGULARIS INTERNA
- ACC - A. CAROTIS COMMUNIS
- ATS - A. THYROIDEA SUP.
- CSL - CARUNCULA SUBLINGUALIS
- NLSM - N. L. SUBMANDIBULARES
- VAMD - VENTER ANT. M. DIGASTRICI
- MMH - M. MYLOHYOIDEUS

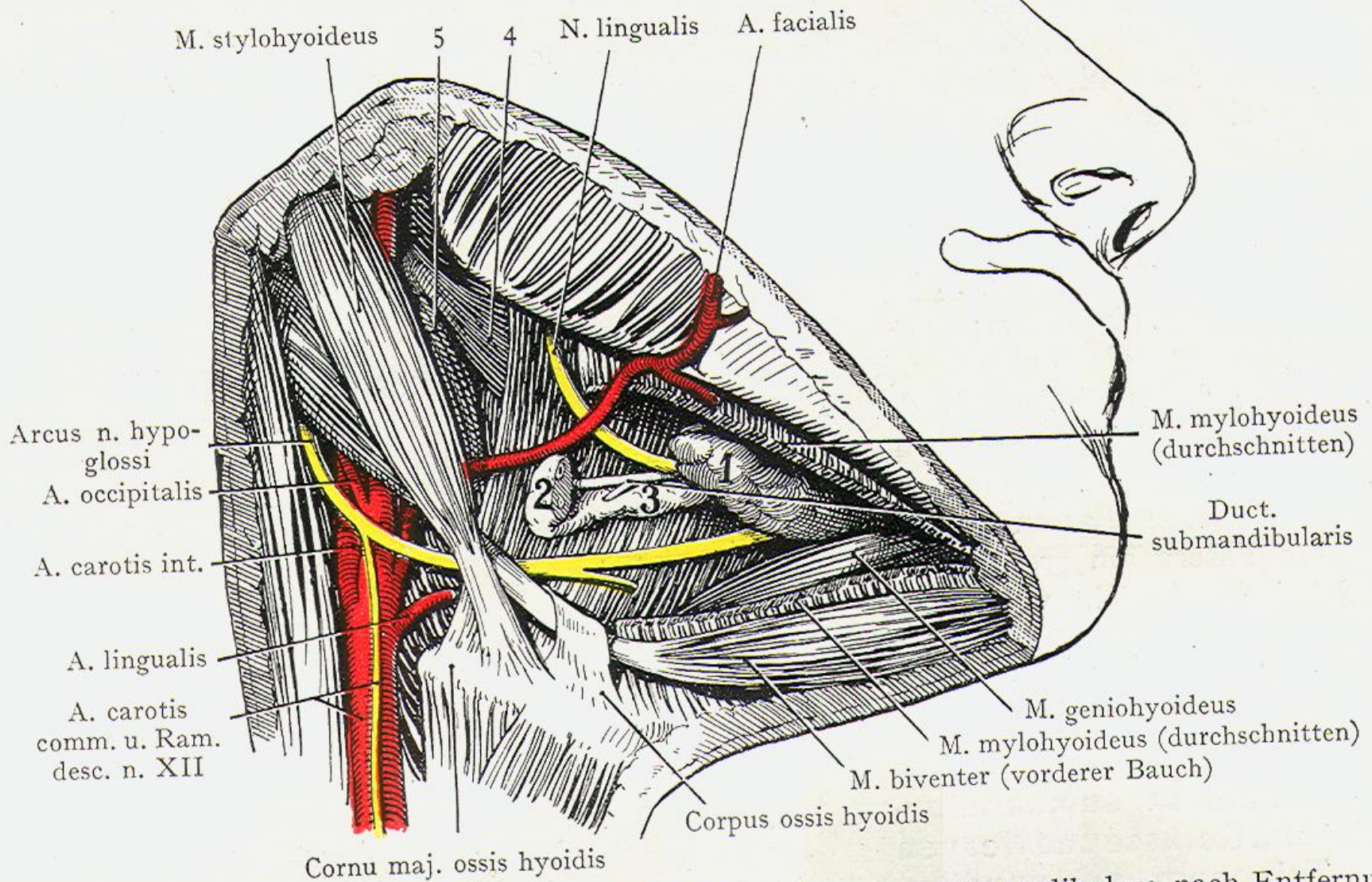
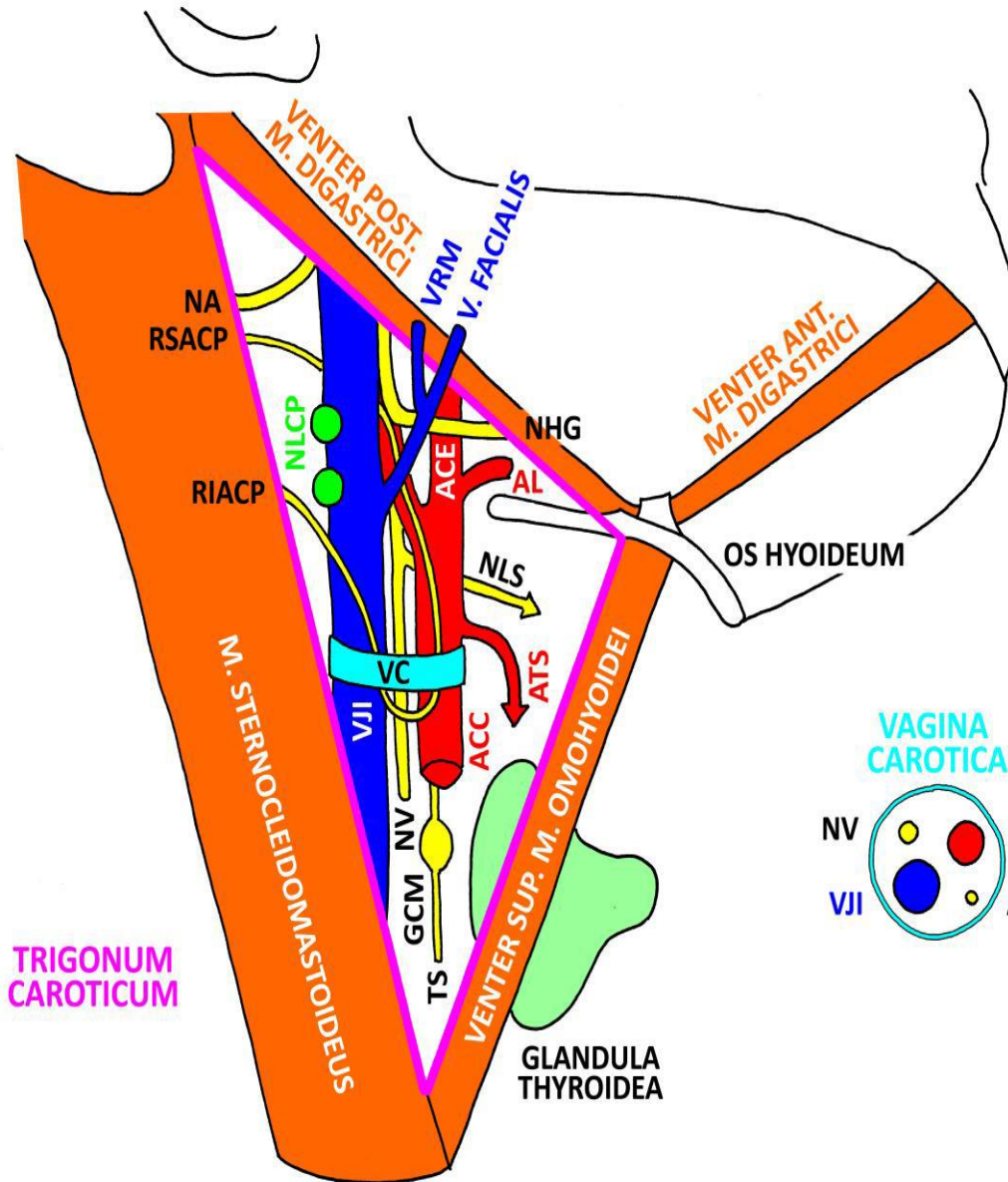


Abb. 159. Gland. sublingualis und tiefe Gebilde des Trigonum submandibulare nach Entfernung des M. mylohyoideus.

1 Gland. sublingualis. 2 Gland. submandibularis, am hinteren Rande des M. mylohyoideus umbiegend. 3 Verbindung zwischen der Gland. submandibularis und sublingualis. 4 M. styloglossus. 5 M. stylopharyngicus.

Trigonum caroticum



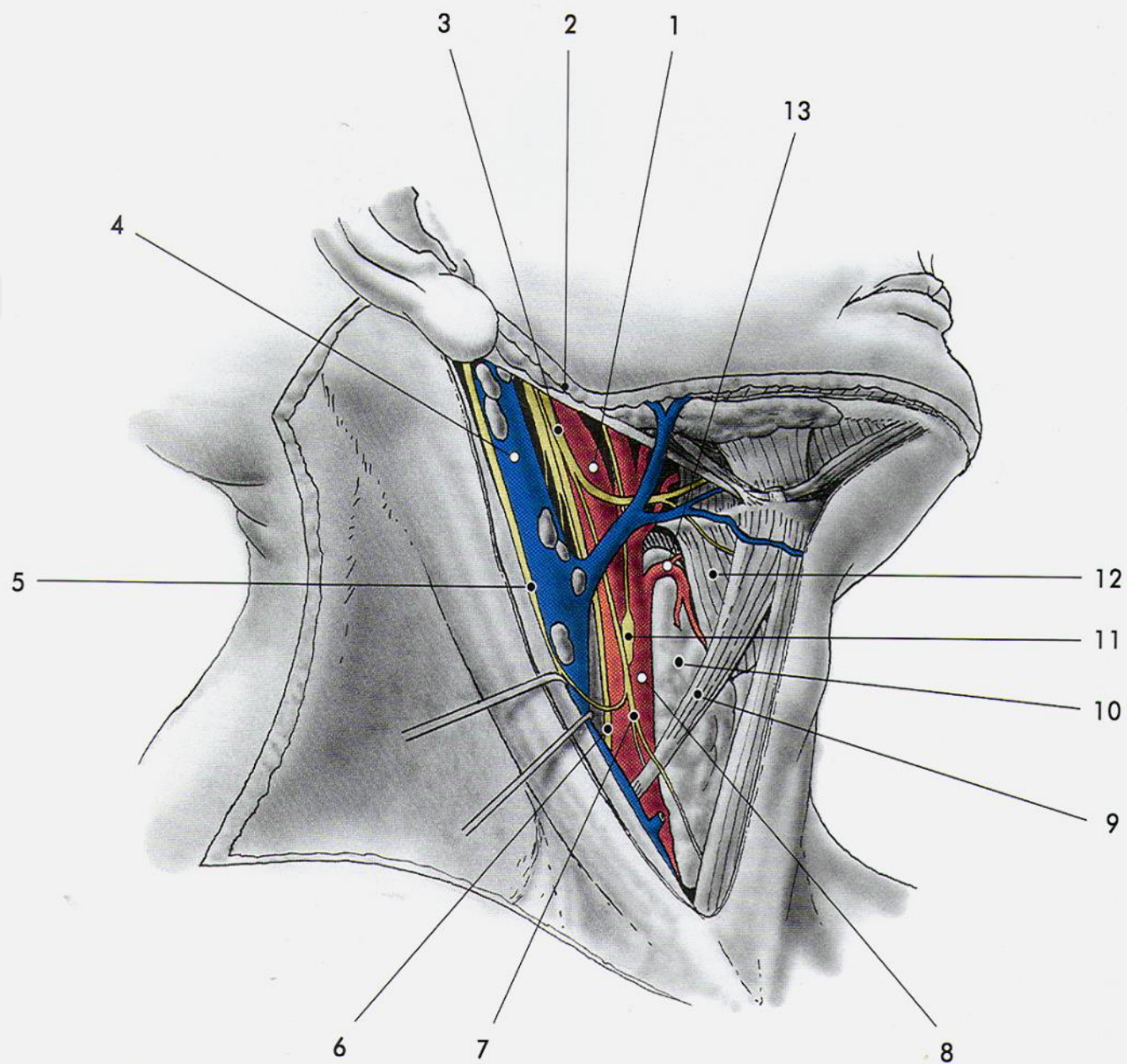
- NA - N. ACCESSORIUS
- RSACP - RADIX SUP. ANSAE CERVICALIS PROFUNDAE
- RIACP - RADIX INF. ANSAE CERVICALIS PROFUNDAE
- NLCP - N. L. CERVICALES PROFUNDI
- VRM - V. RETROMANDIBULARIS
- ACE - A. CAROTIS EXTERNA
- NHG - N. HYPOGLOSSUS
- AL - A. LINGUALIS
- NLS - N. LARYNGEUS SUP.
- VC - VAGINA CAROTICA
- VJI - V. JUGULARIS INTERNA
- ACC - A. CAROTIS COMMUNIS
- ATS - A. THYROIDEA SUP.
- NV - N. VAGUS
- GCM - GANGLION CERVICALE MEDIUM
- TS - TRUNCUS SYMPATHICUS
- ACP - ANSA CERVICALIS PROFUNDA

VAGINA CAROTICA

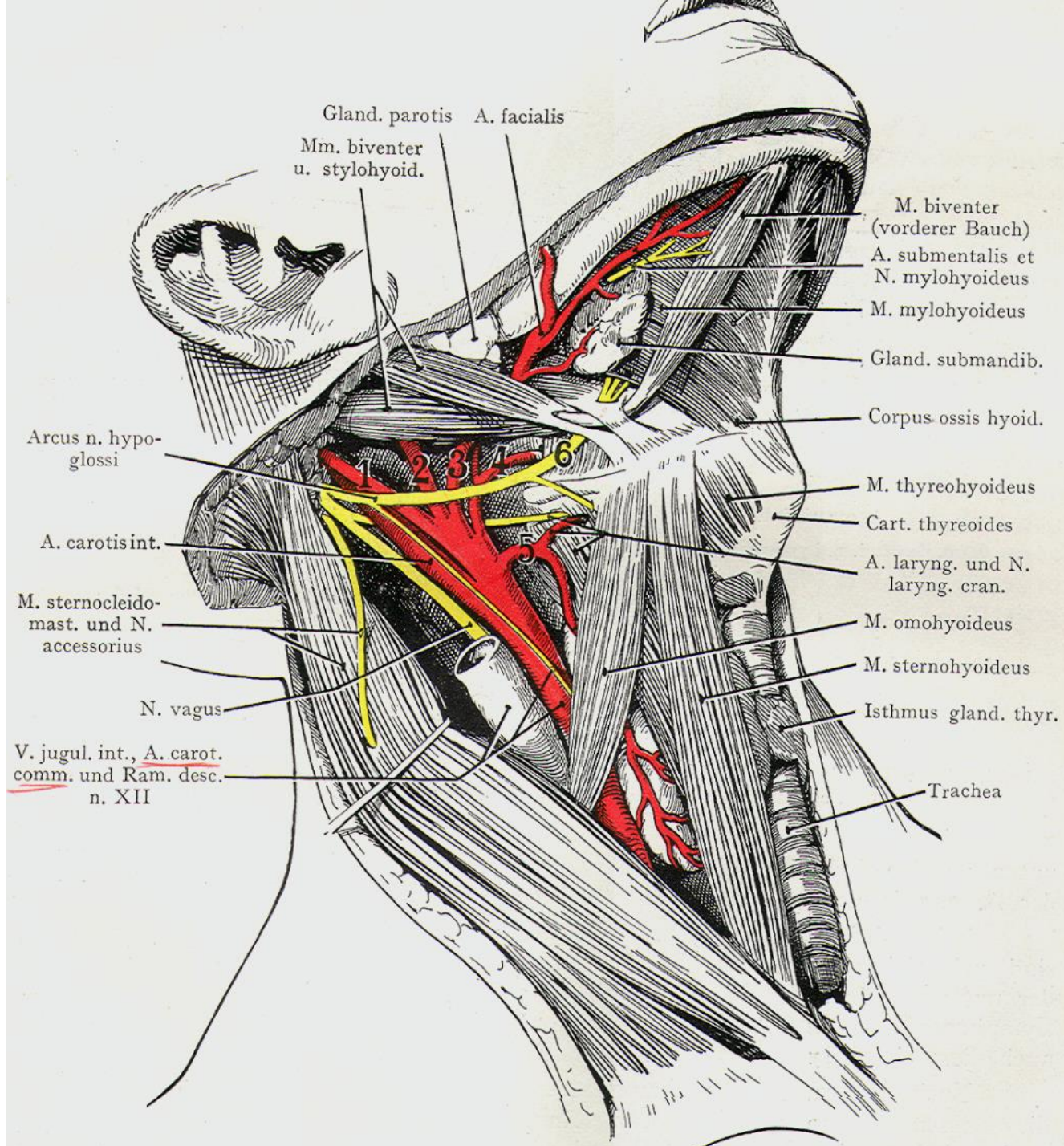


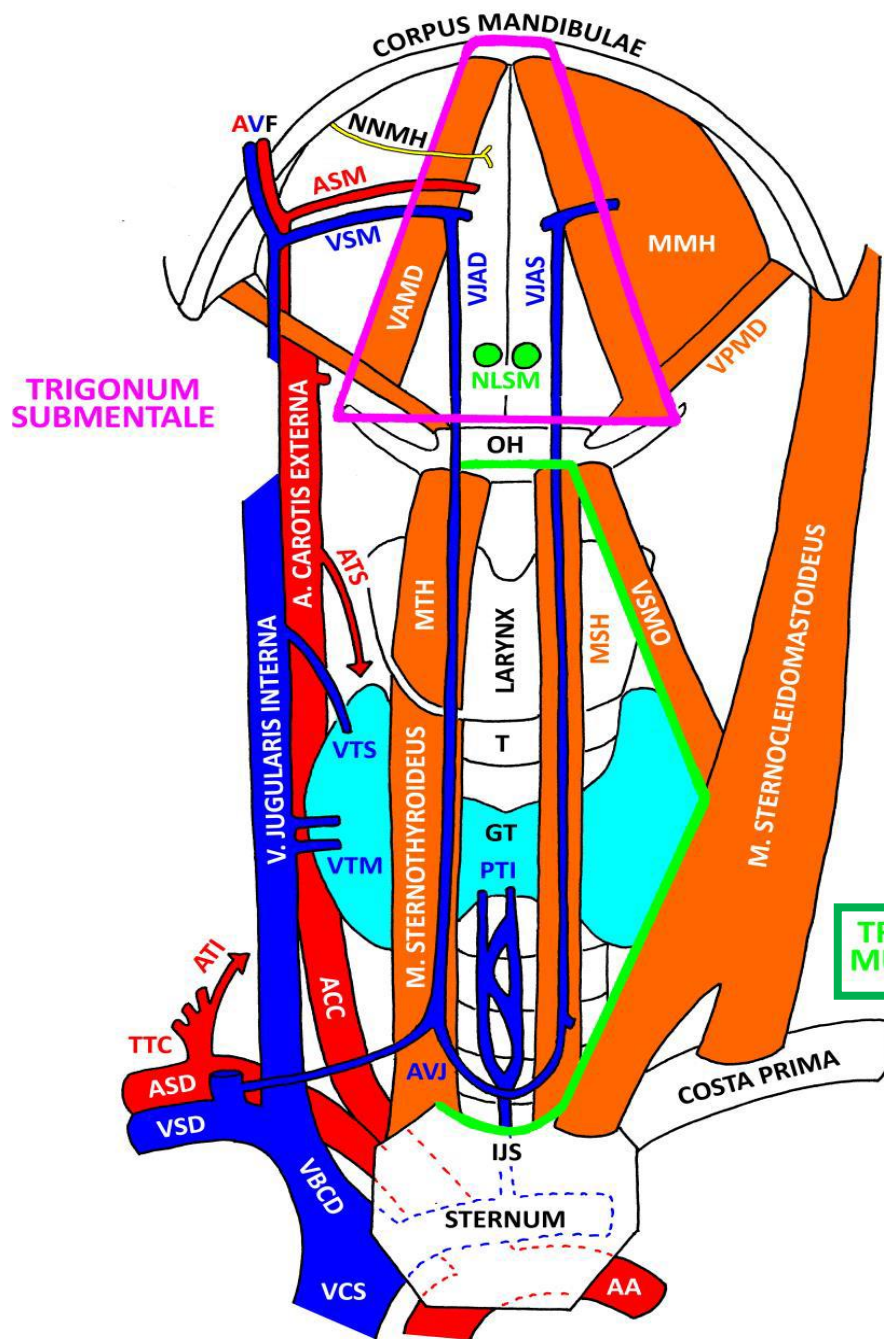
TRIGONUM CAROTICUM

Trigonum caroticum



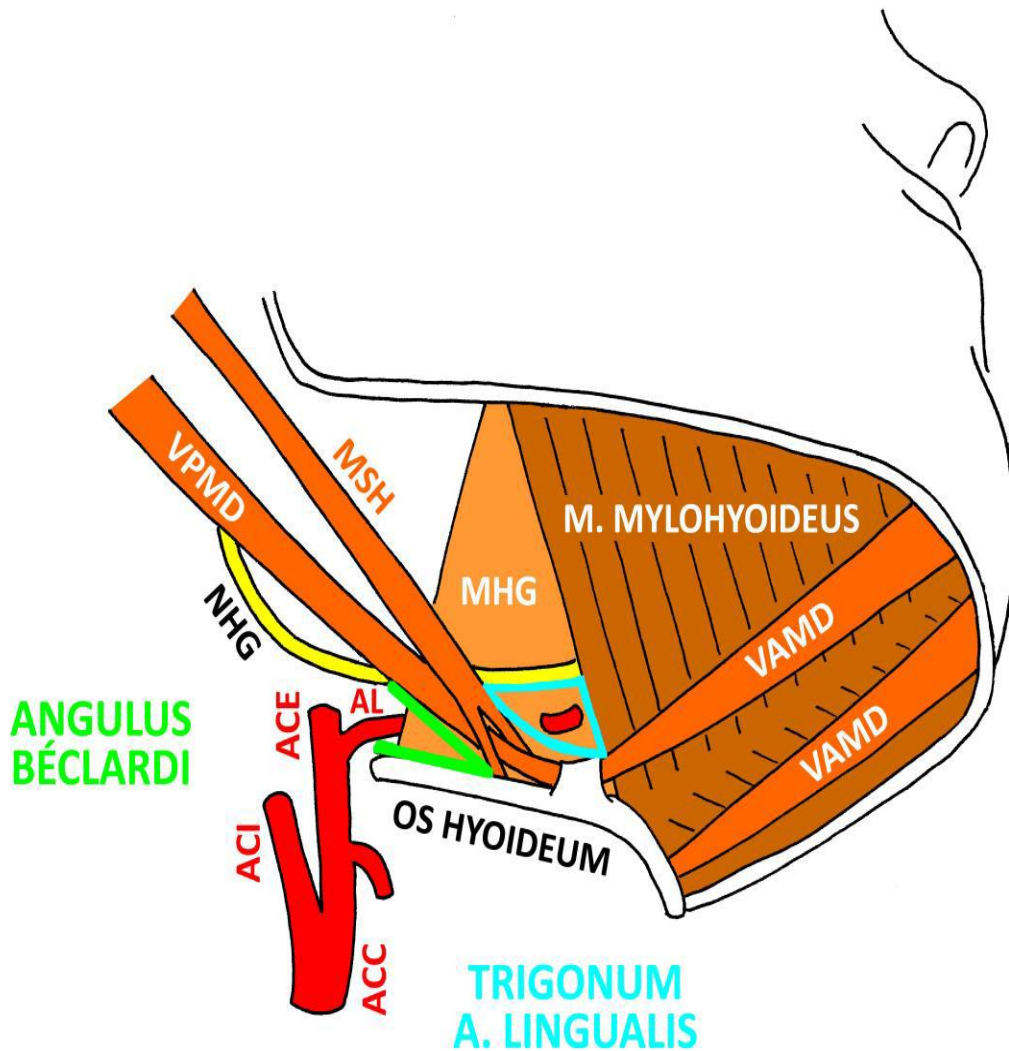
Obr. 14.6. Trigonum caroticum. 1 – a. carotis interna, 2 – venter posterior m. digastrici, 3 – n. hypoglossus, 4 – v. jugularis interna, 5 – radix inferior ansae cervicalis, 6 – n. vagus, 7 – radix superior ansae cervicalis, 8 – a. carotis externa, 9 – m. omohyoideus, 10 – glandula thyroidea, 11 – glomus caroticum, 12 – m. thyrohyoideus, 13 – a. thyroidea superior





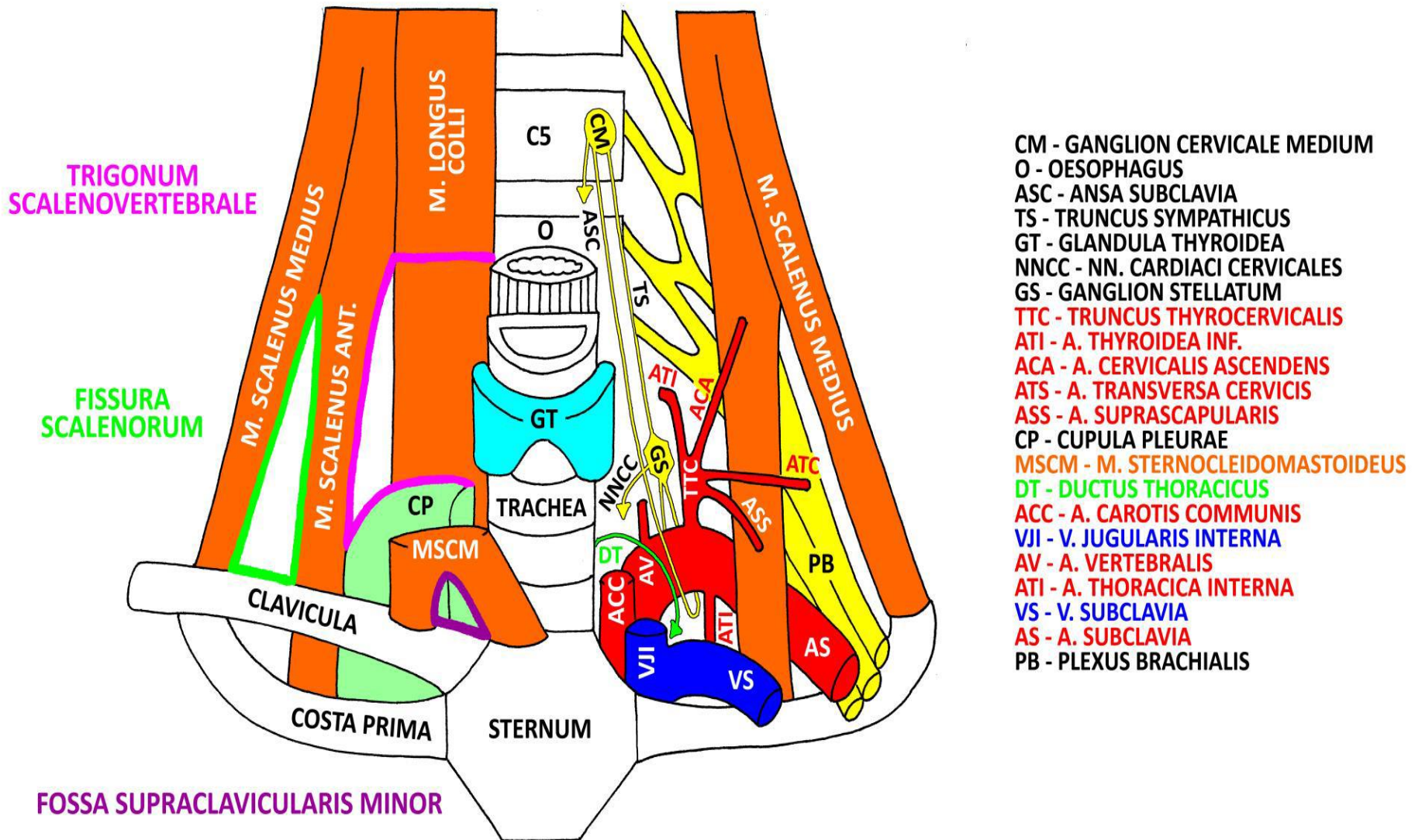
- AVF - A. ET V. FACIALIS
- NNMH - NN. MYLOHYOIDEI
- ASM - A. SUBMENTALIS
- VSM - V. SUBMENTALIS
- VAMD - VENTER ANT. M. DIGASTRICI
- VJAD - V. JUGULARIS ANT. DX.
- VJAS - V. JUGULARIS ANT. SIN.
- NLSM - N. L. SUBMENTALES
- MMH - M. MYLOHYOIDEUS
- VPMD - VENTER POST. M. DIGASTRICI
- OH - OS HYOIDEUM
- ATS - A. THYROIDEA SUP.
- MTH - M. THYROHYOIDEUS
- MSH - M. STERNOHYOIDEUS
- VSMO - VENTER SUP. M. OMOHYOIDEI
- T - TRACHEA
- VTS - V. THYROIDEA SUP.
- VTM - V. THYROIDEA MEDIA
- GT - GLANDULA THYROIDEA
- PTI - PLEXUS THYROIDEUS IMPAR
- ACC - A. CAROTIS COMMUNIS
- AVJ - ARCUS VENOSUS JUGULI
- IJS - INCISURA JUGULARIS STERNI
- ATI - A. THYROIDEA INF.
- TTC - TRUNCUS THYROCERVICALIS
- ASD - A. SUBCLAVIA DX.
- VSD - V. SUBCLAVIA DX.
- VBCD - V. BRACHIOCEPHALICA DX.
- VCS - V. CAVA SUP.
- AA - ARCUS AORTAE

Trigonum a. lingualis (Pirigovi)

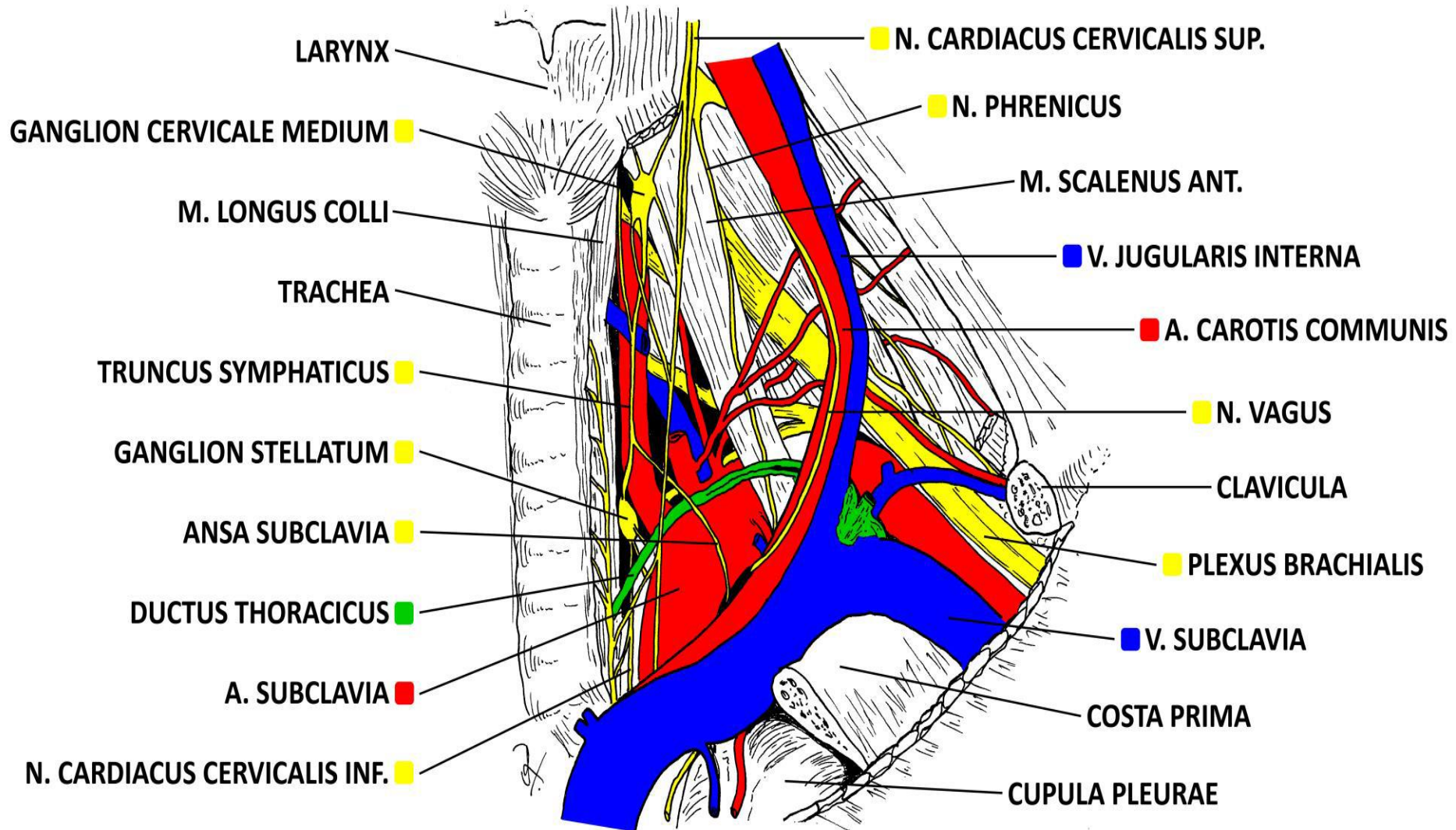


VPMD - VENTER POST. M. DIGASTRICI
NHG - N. HYPOGLOSSUS
MSH - M. STYLOHYOIDEUS
MHG - M. HYOGLOSSUS
ACE - A. CAROTIS EXTERNA
AL - A. LINGUALIS
ACI - A. CAROTIS INTERNA
ACC - A. CAROTIS COMMUNIS
VAMD - VENTER ANT. M. DIGASTRICI

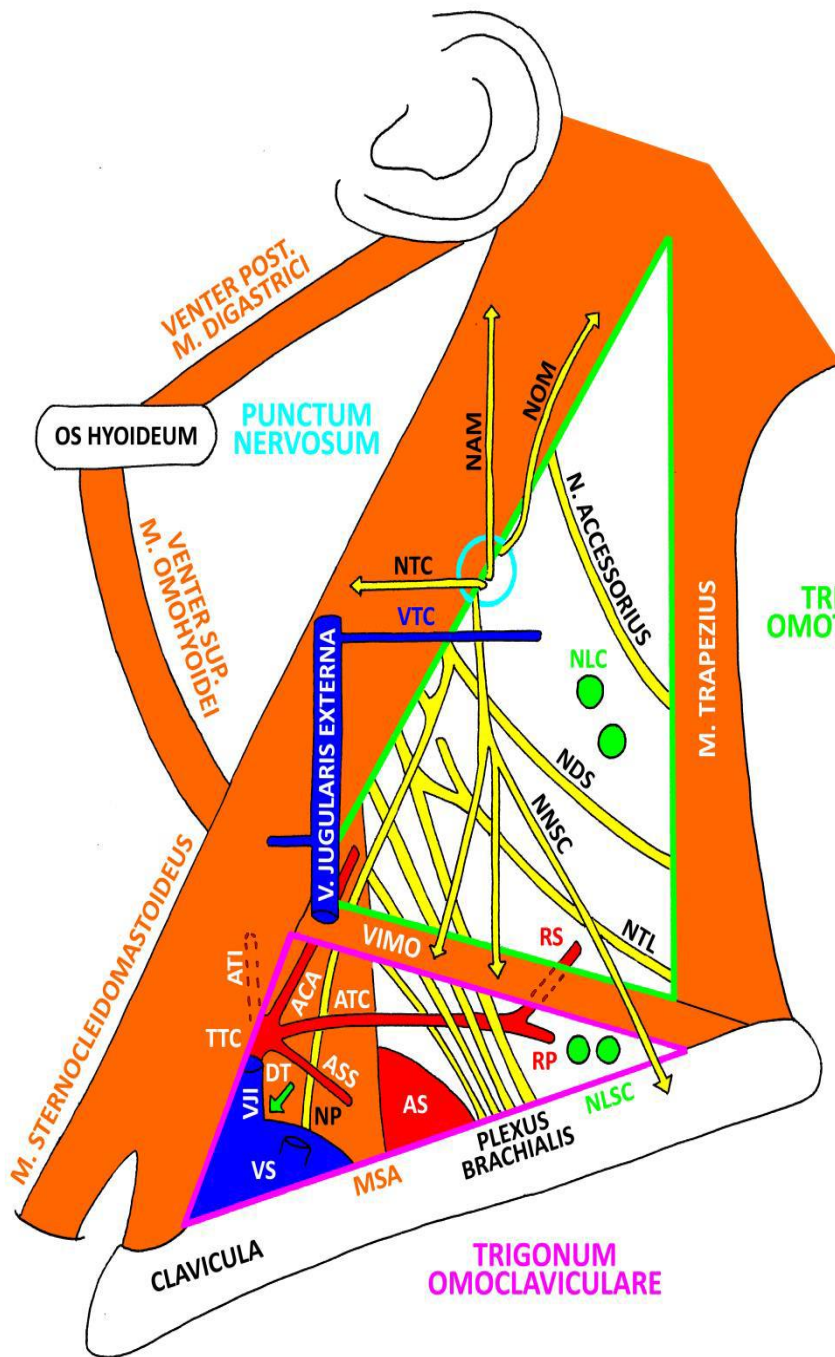
Další útvary v dolní části krku



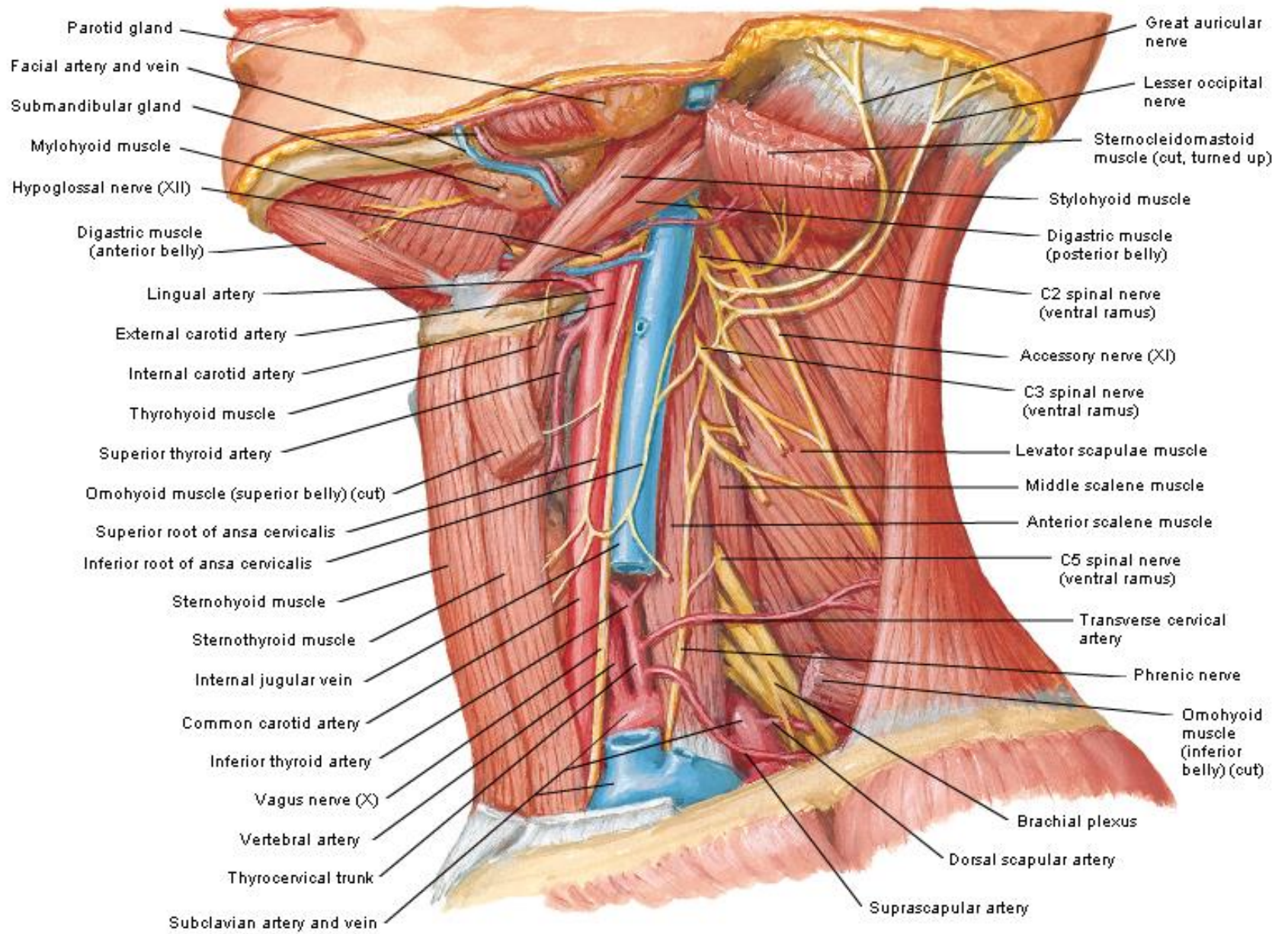
Trigonum scalenovertebrale



Regio cervicalis lateralis



- NOM - N. OCCIPITALIS MINOR
- NAM - N. AURICULARIS MAGNUS
- NTC - N. TRANSVERSUS CERVICIS
- VTC - V. TRANSVERSA CERVICIS
- NLC - N. L. CERVICALES
- NDS - N. DORSALIS SCAPULAE
- NNSC - NN. SUPRACLAVICULARES
- NTL - N. THORACICUS LONGUS
- VIMO - VENTER INF. M. OMOHYOIDEI
- RS - R. SUPERFICIALIS (A. TRANSVERSAE CERVICIS)
- TTC - TRUNCUS THYROCERVICALIS
- ATI - A. THYROIDEA INF.
- ACA - A. CERVICALIS ASCENDENS
- ATC - A. TRANSVERSA CERVICIS
- RP - R. PROFUNDUS (A. TRANSVERSAE CERVICIS)
- ASS - A. SUPRASCAPULARIS
- VJI - V. JUGULARIS INTERNA
- DT - DUCTUS THORACICUS
- VS - V. SUBCLAVIA
- NP - N. PHRENICUS
- AS - A. SUBCLAVIA
- MSA - M. SCALENUS ANT.
- NLSC - N. L. SUPRACLAVICULARES



Prostory na krku

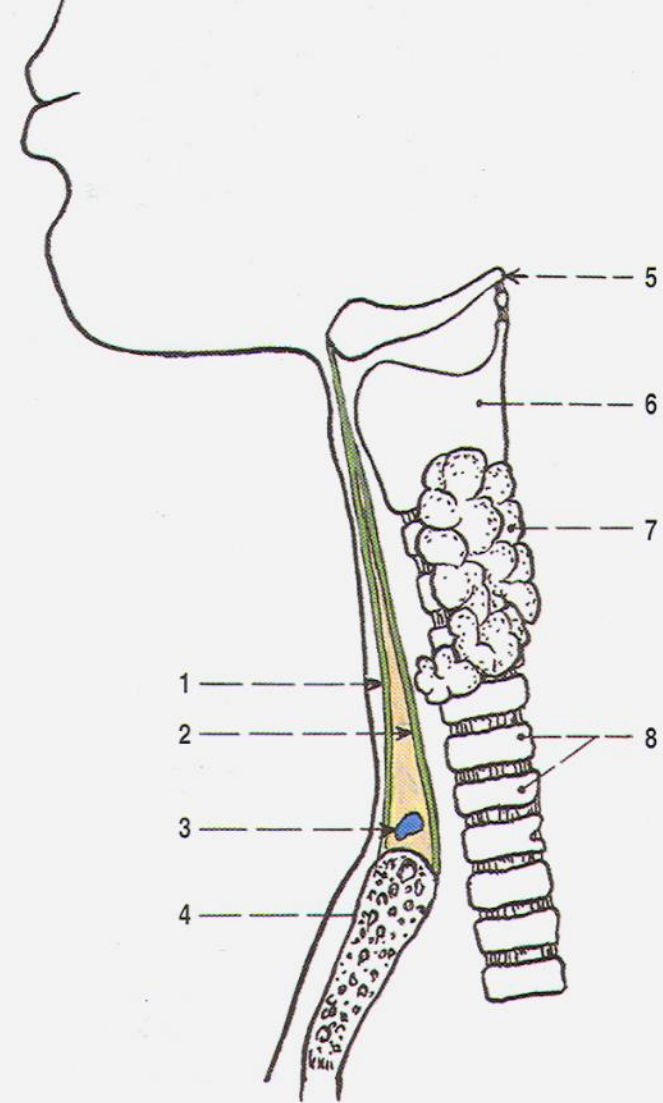
- spatium previscerale
- spatium paraviscerale
- spacium retroviscerale

navazuje na ně:

- kraniálně: spatium parapharyngeum
spatium retropharyngeum
- kaudálně: spatium suprasternale
mediastinum superius

Spatium suprasternale

- ventrálně: lamina superficialis fasciae cervicalis
- dorzálně: lamina superficialis fasciae cervicalis
- kraniálně: jazyk
- kaudálně: anubrium sterni (incisura jugularis)
- obsah: arcus venosus jugularis



Obr. 383. SPATIUM SUPRATERNALE, schematicky znázorněné na sagitálním řezu

- 1 lamina superficialis fasciae cervicalis
- 2 lamina pretrachealis fasciae cervicalis
- 3 arcus venosus juguli
- 4 manubrium sterni
- 5 jazyk
- 6 štítná chrupavka hrtanu
- 7 štítná žláza
- 8 chrupavčité prstence trachey

Prostory na krku

sagitální řez

pharynx

fascia
buccopharyngea

retrofaryngeální
prostor

fascia alaris

lamina prevertebralis
fasciae cervicalis

trachea

oesophagus

mandibula

musculus geniohyoideus

fascia muscoli geniohyoidei

lamina superficialis fasciae
cervicalis

fascia muscoli infrahyoidei

lamina pretrachealis fasciae cervicalis

glandula thyroidea

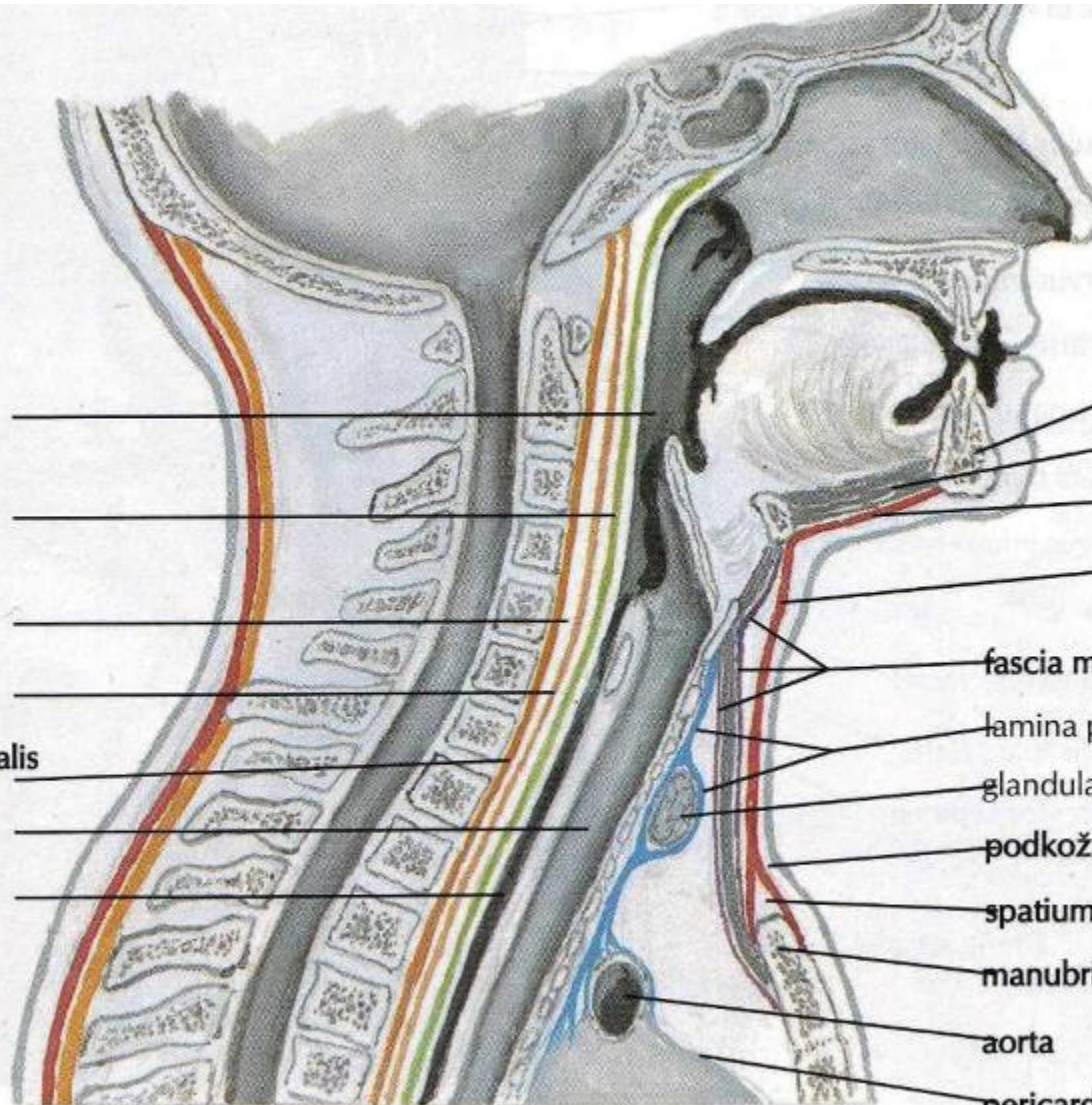
podkožní vazivo

spatium suprasternale

manubrium sterni

aorta

pericardium



Septum styloideum („Riolanova kytice“)

svalová přepážka obalená fasciemi

dělí kraniální část spatium parapharyngeum na spatium pre- + retrostyloideum

končí přibližně v čáře mezi processus styloideus a cornu majus ossis hyoidei

- m. stylopharyngeus
- m. styloglossus
- m. stylohyoideus + lig. stylohyoideum
- venter posterior m. digastrici
- m. sternocleidomastoideus

SEPTUM STYLOIDEUM

