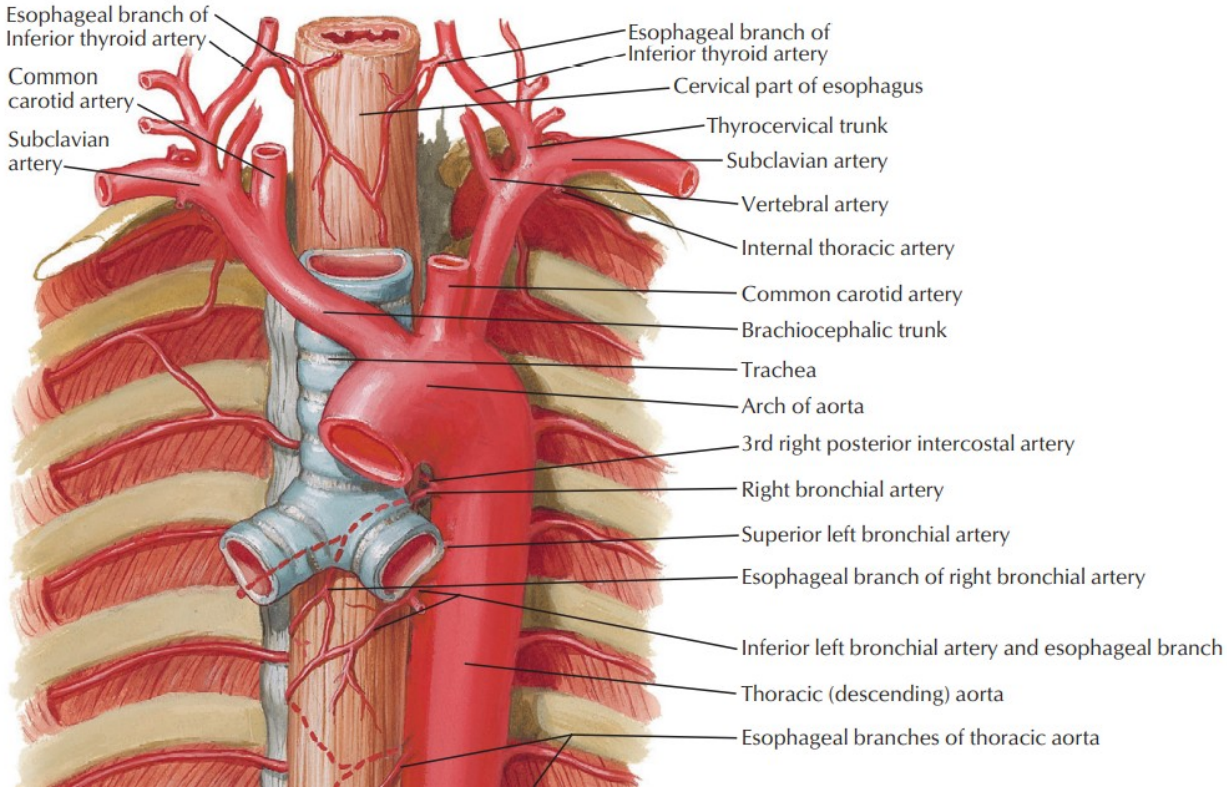
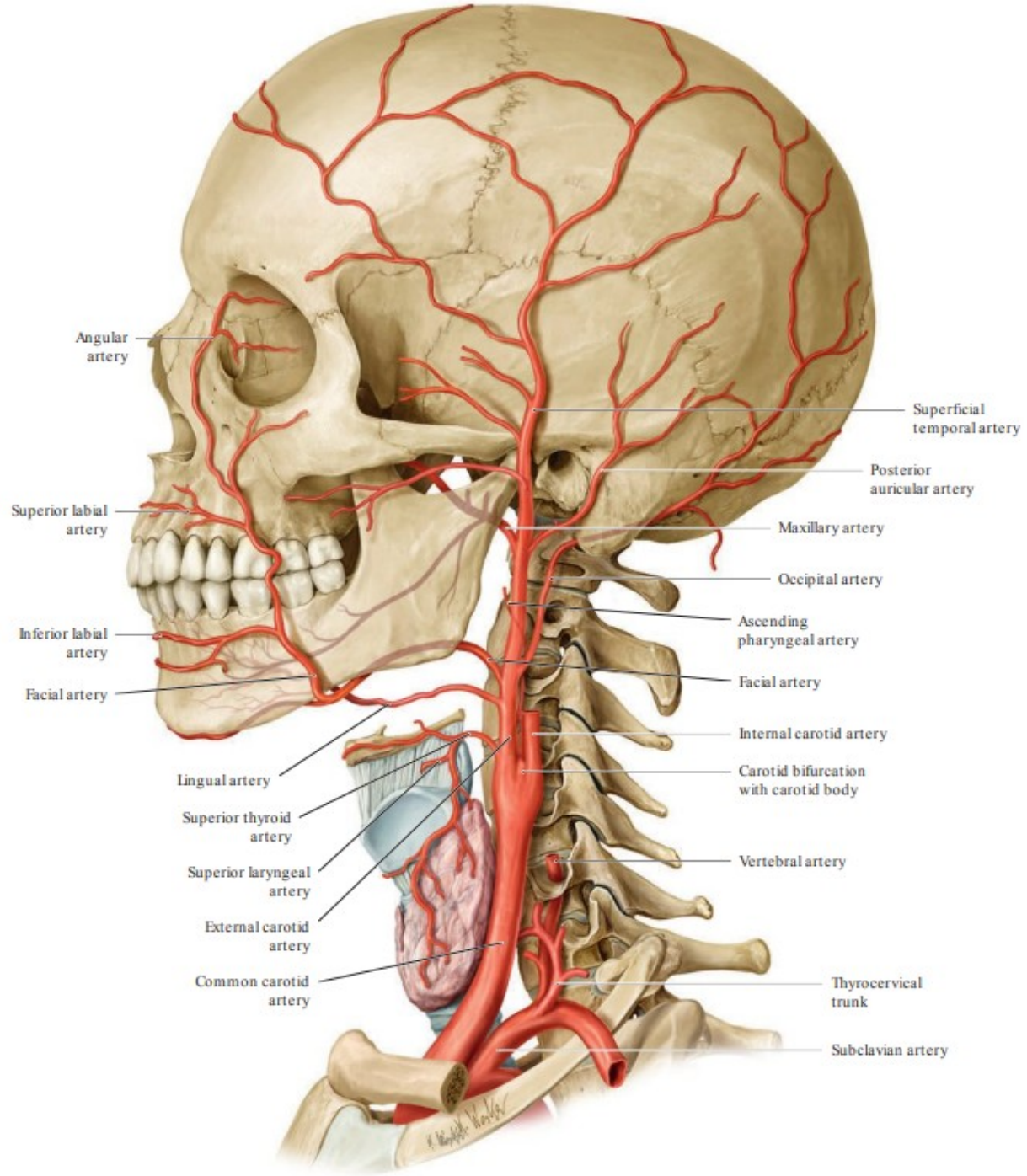
Klinická anatomie cév hlavy a krku. Lymfatická drenáž.

MUDr. Erik Kročka

ARTERIA CAROTIS COMMUNIS

- hlavní tepna zásobující hlavu a větší část mozku
- nejčastěji odstupuje vpravo z *truncus brachiocephalicus*, vlevo z *arcus aortae*
- obvykle nevydává žádné větve





Bifurkace karotid → predilekční místo vzniku aterosklerózy

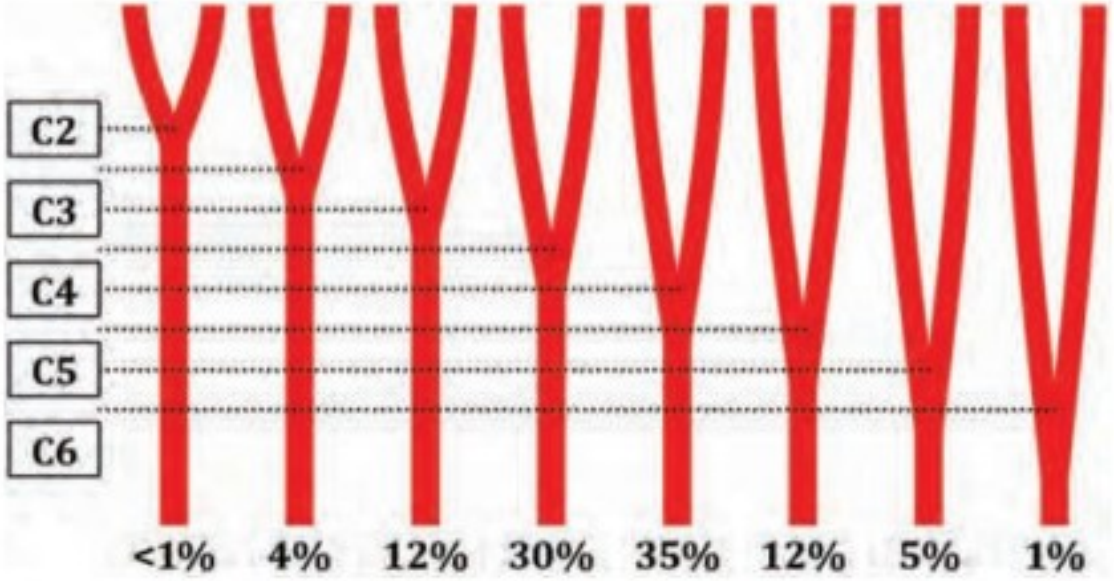


Figure 47.1 Illustration showing the bifurcation of the common carotid artery.

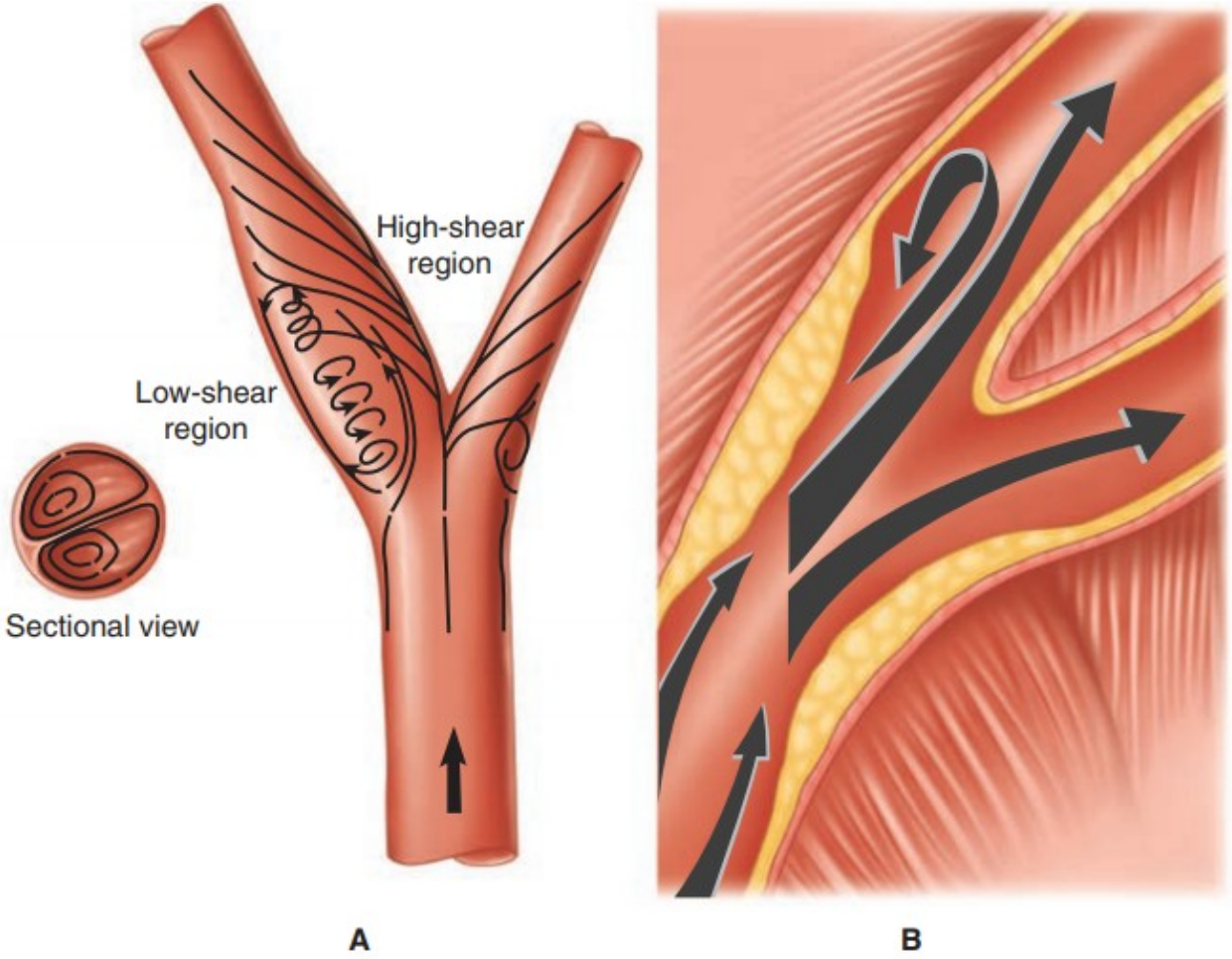
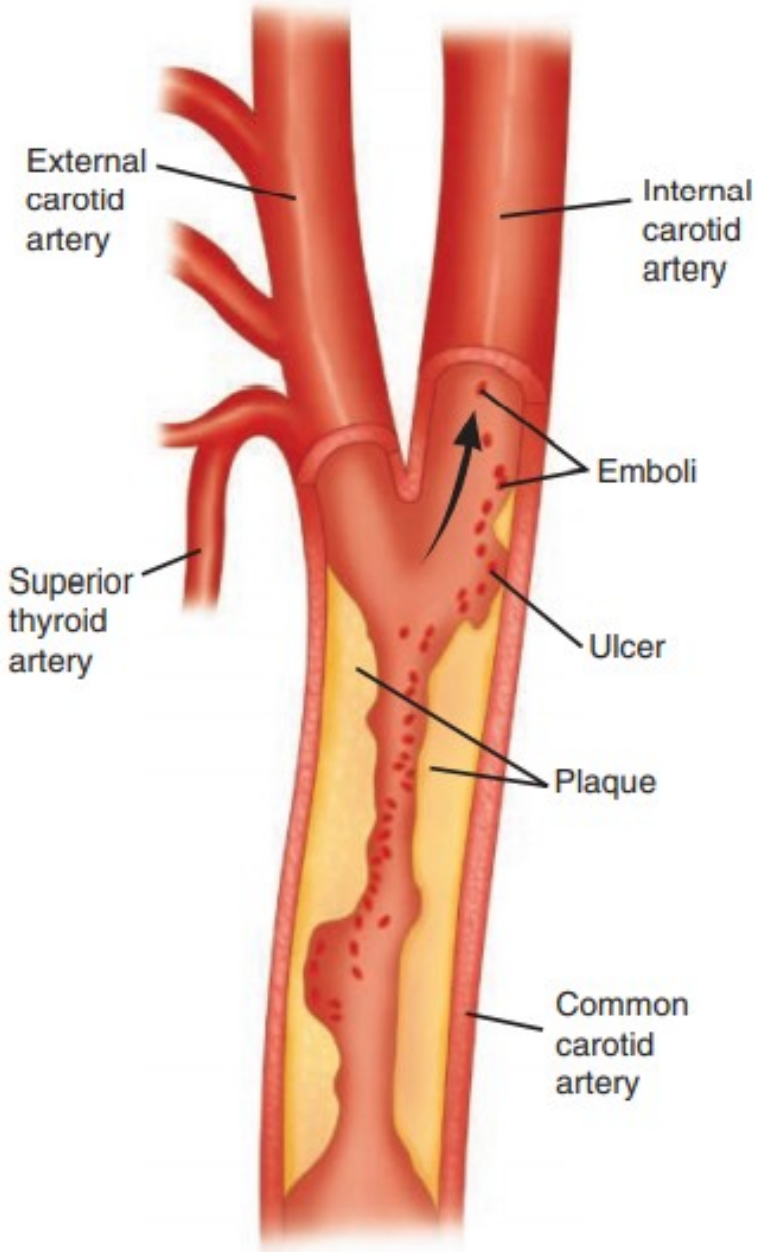


Figure 23-14. **A.** The carotid bifurcation is an area of low flow velocity and low shear stress. As the blood circulates through the carotid bifurcation, there is separation of flow into the low-resistance internal carotid artery and the high-resistance external carotid artery. **B.** The carotid atherosclerotic plaque typically forms in the outer wall opposite to the flow divider due in part to the effect of the low shear stress region, which also creates a transient reversal of flow during the cardiac cycle.



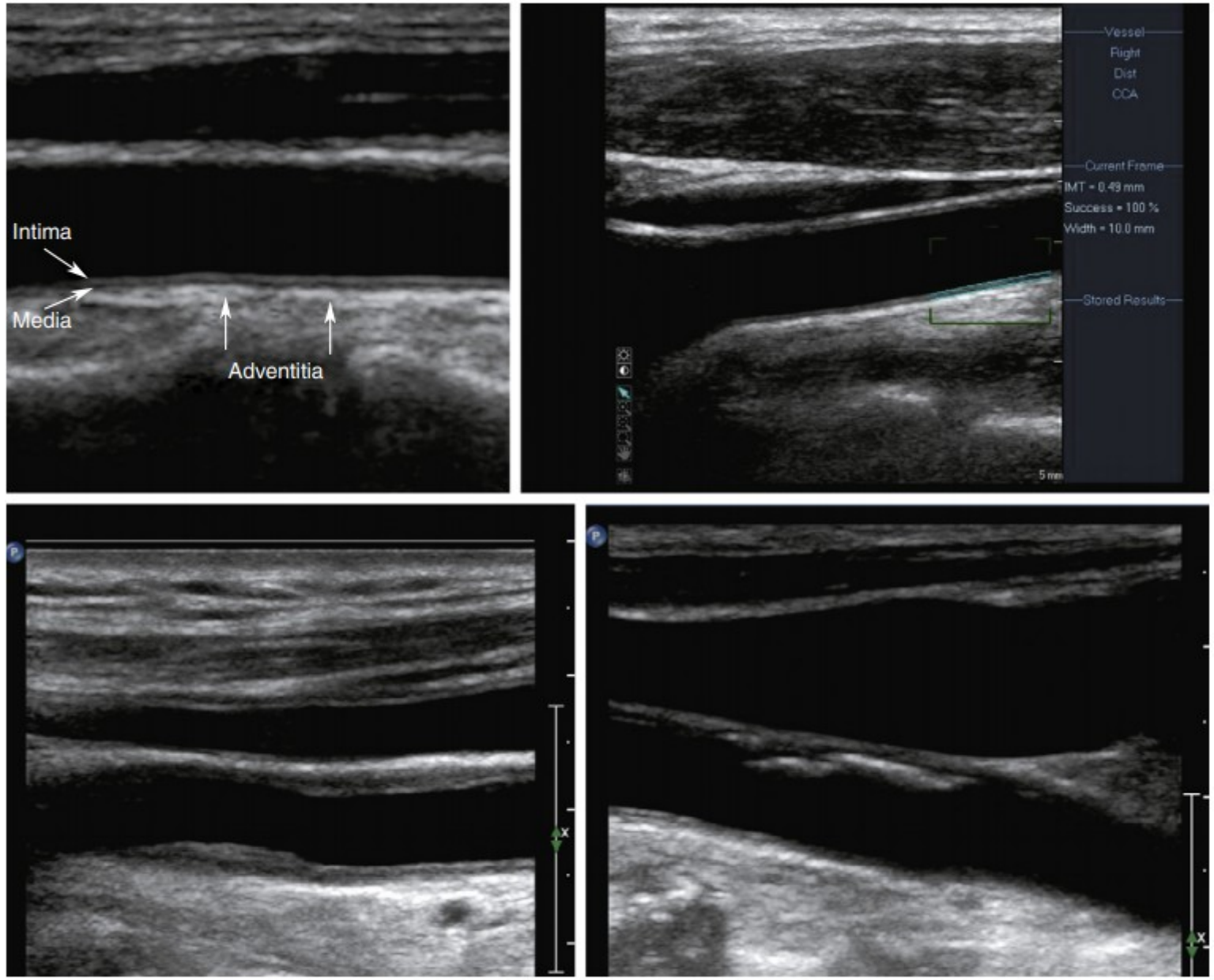


FIGURE 5-2 Normal intima-media thickness (IMT) appearance *(top left)*, IMT measurement example *(top right)*, fatty streak *(bottom left)*, and a homogenous hyperechoic nonstenosing plaque *(bottom right)*.

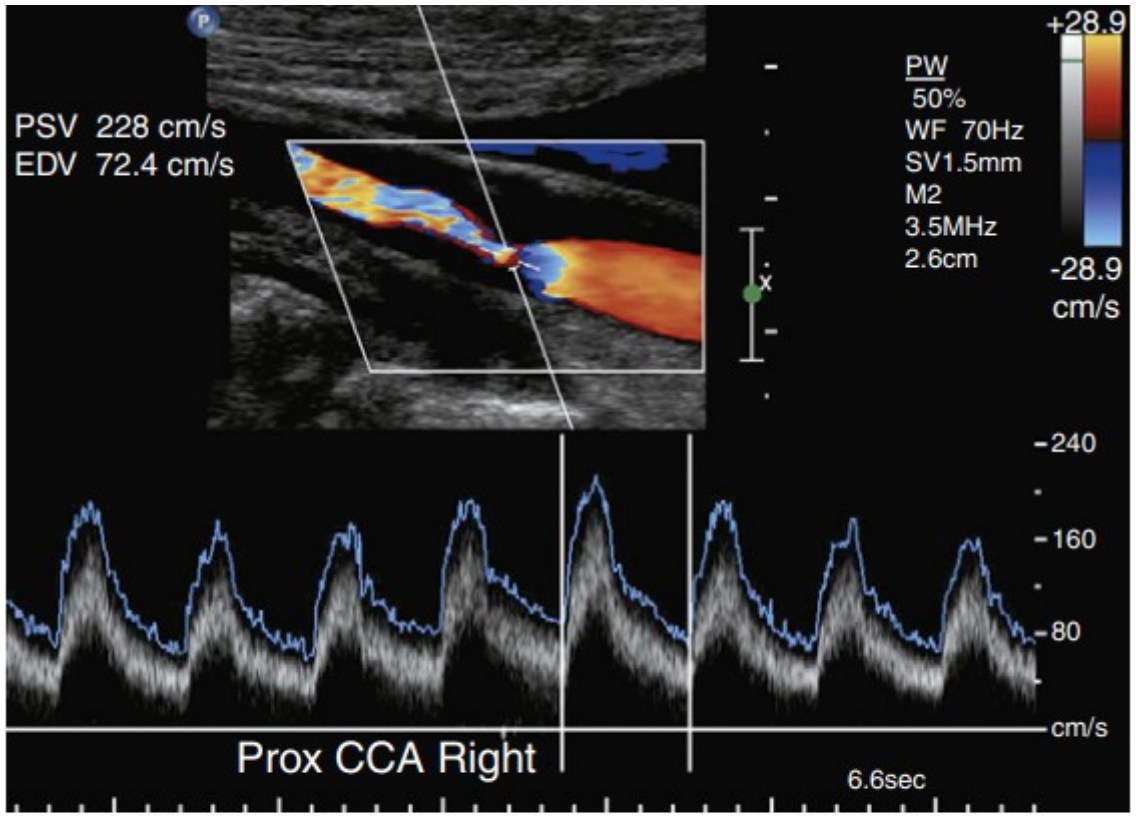


FIGURE 5-6 Hypoechoic (echolucent) plaque causing a significant internal carotid artery stenosis. Note the Doppler velocity tracing with a narrow spectral window, indicating that the sample site is at the point of maximal narrowing.

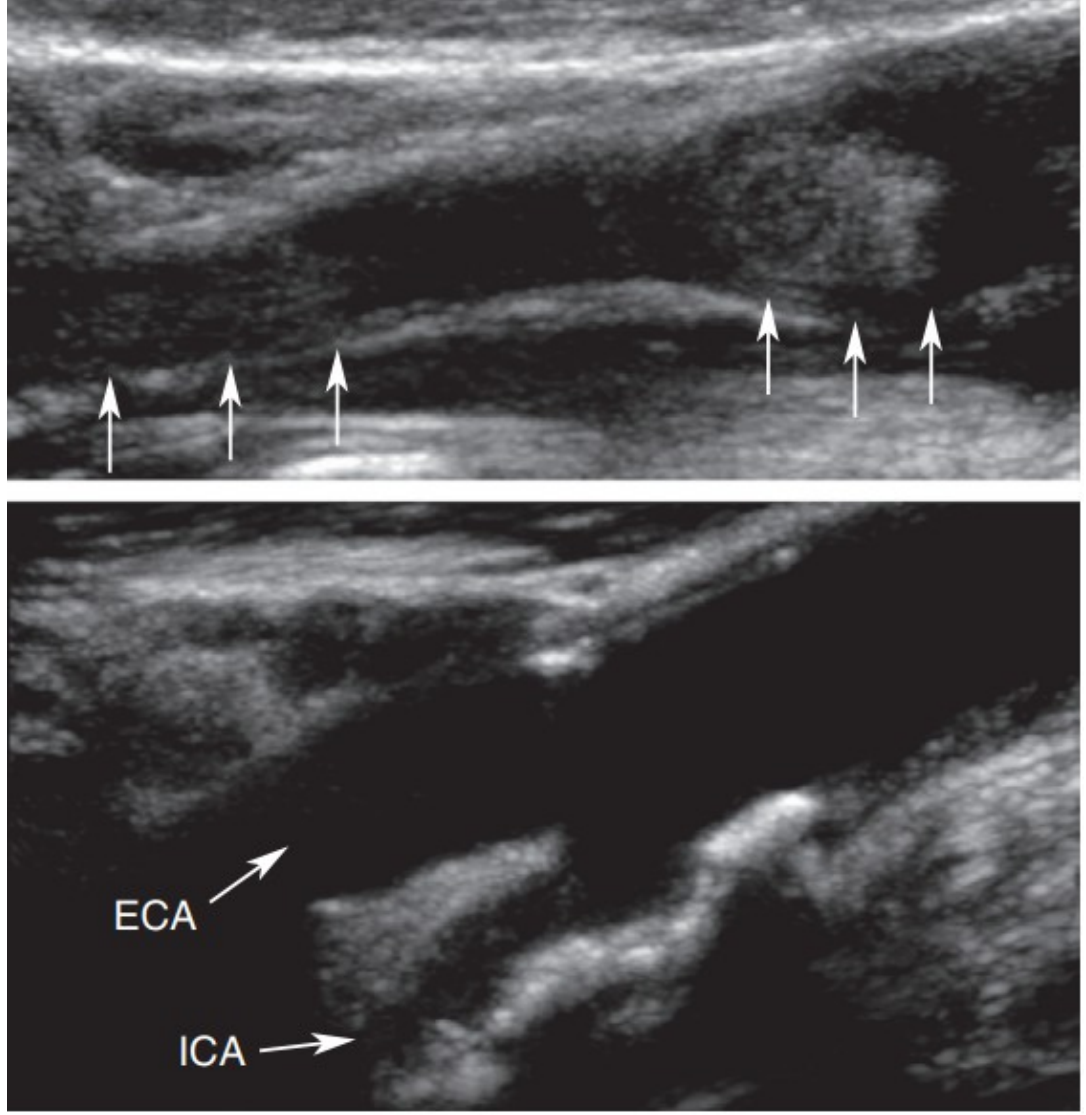


FIGURE 5-8 Acute *(top)* thromboembolic internal carotid artery (ICA) occlusion. Note intima-media thickness preservation between mixed echogenic parts of a thrombus *(arrows),* and normal ICA lumen size. Chronic *(bottom)* ICA occlusion with vessel collapse and fibrosis. ECA, external carotid artery.

KAROTICKÁ ENDARTEREKTOMIE

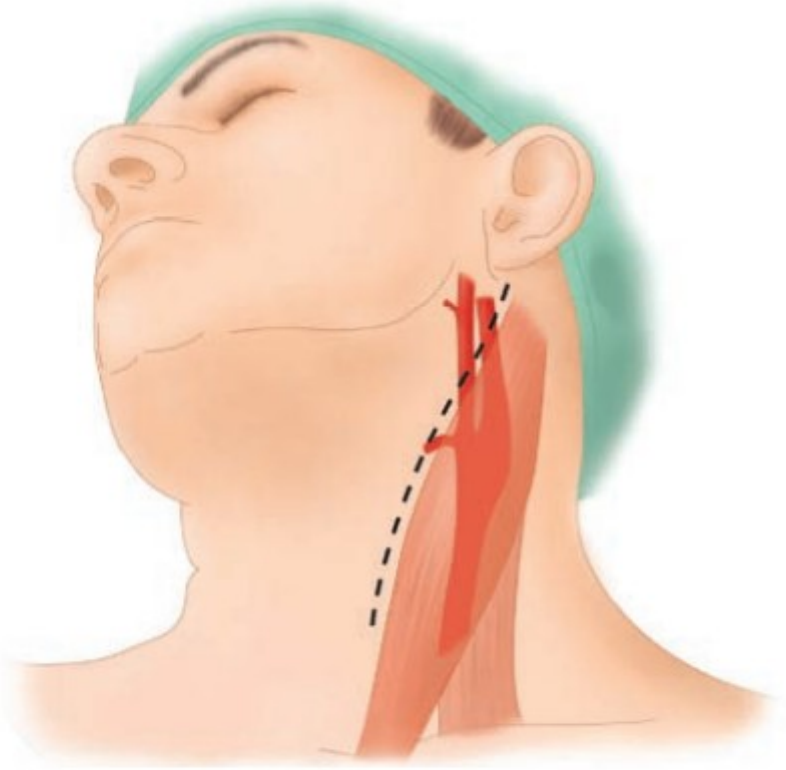


Figure 23-17. To perform carotid endarterectomy, the patient's neck is slightly hyperextended and turned to the contralateral side. An oblique incision is made along the anterior border of the sternocleidomastoid muscle centered on top of the carotid bifurcation.

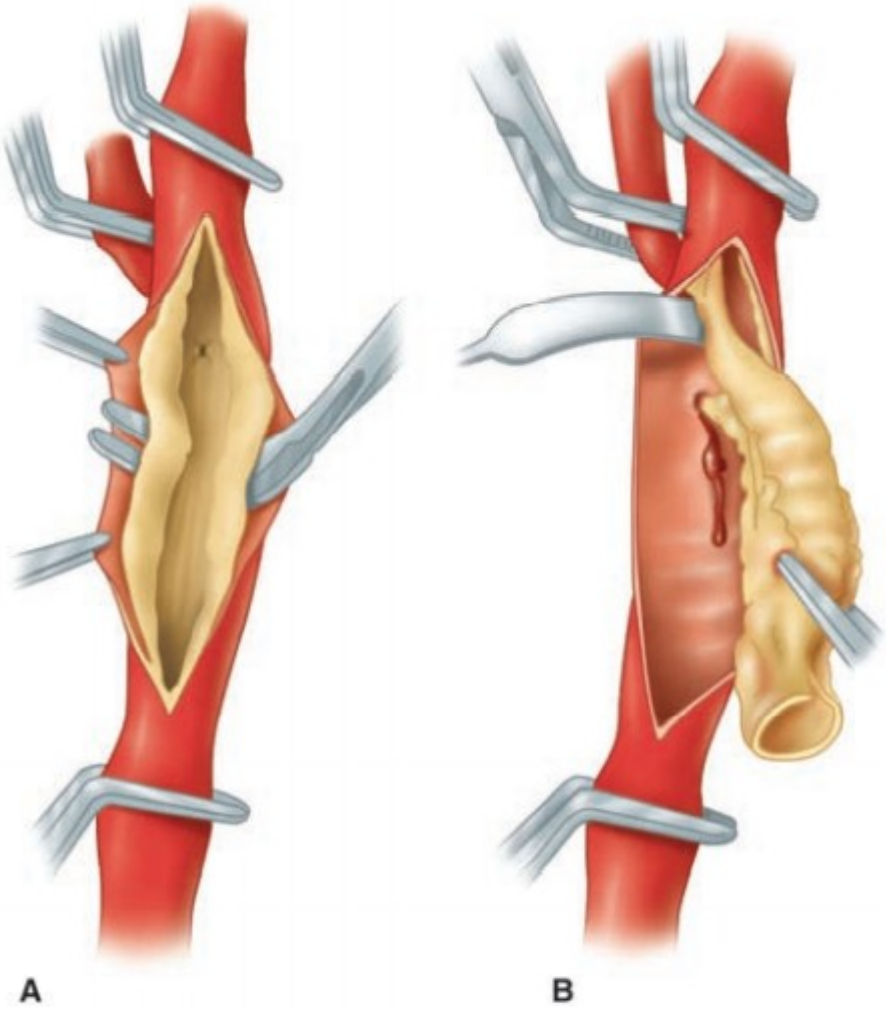


Figure 23-18. **A.** During carotid endarterectomy, vascular clamps are applied in the common carotid, external carotid, and internal carotid arteries. Carotid plaque is elevated from the carotid lumen. **B.** Carotid plaque is removed, and the arteriotomy is closed either primarily or with a patch angioplasty.

ARTERIA CAROTIS INTERNA

Pars petrosa

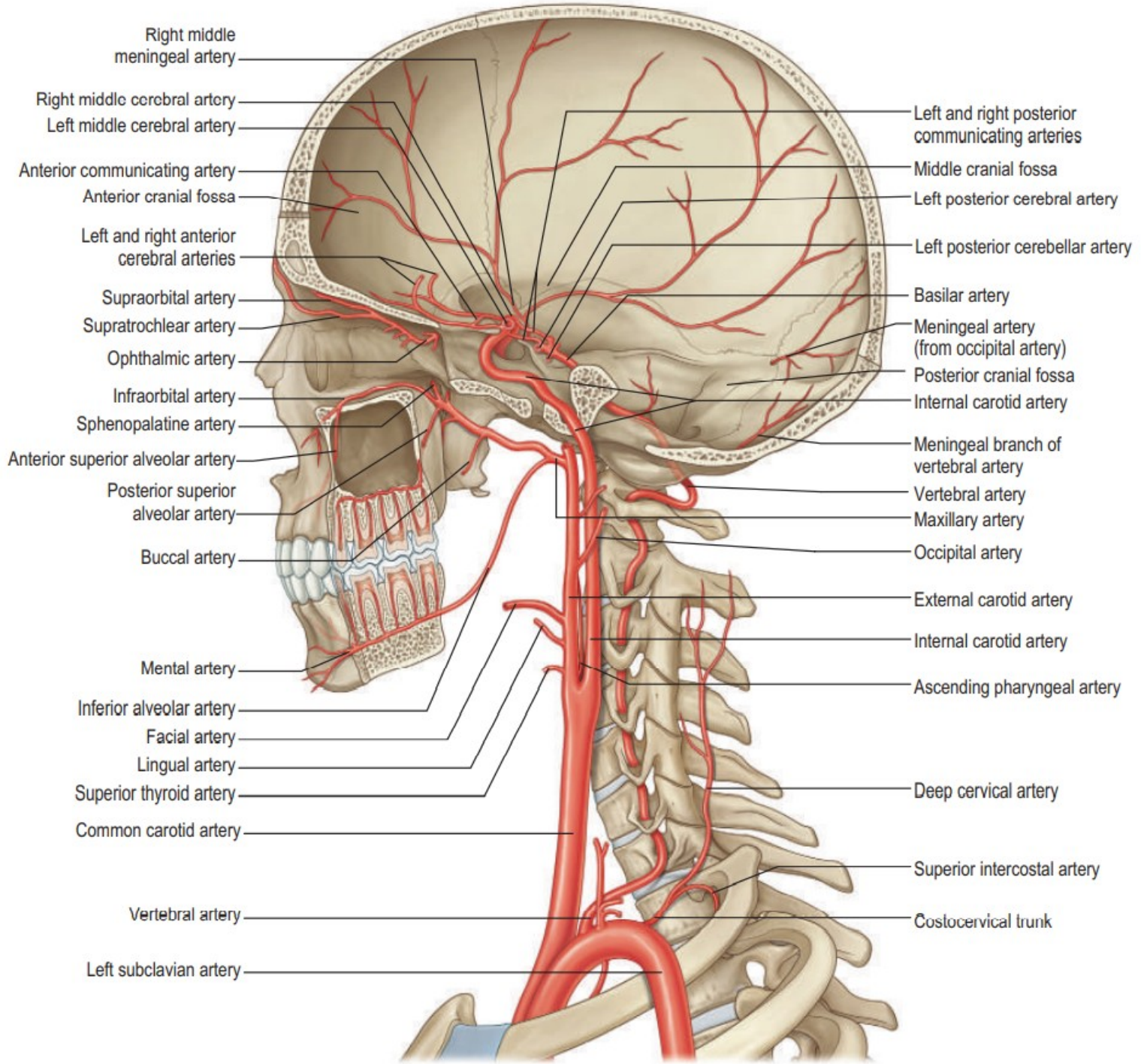
Aa. caroticotympanicae

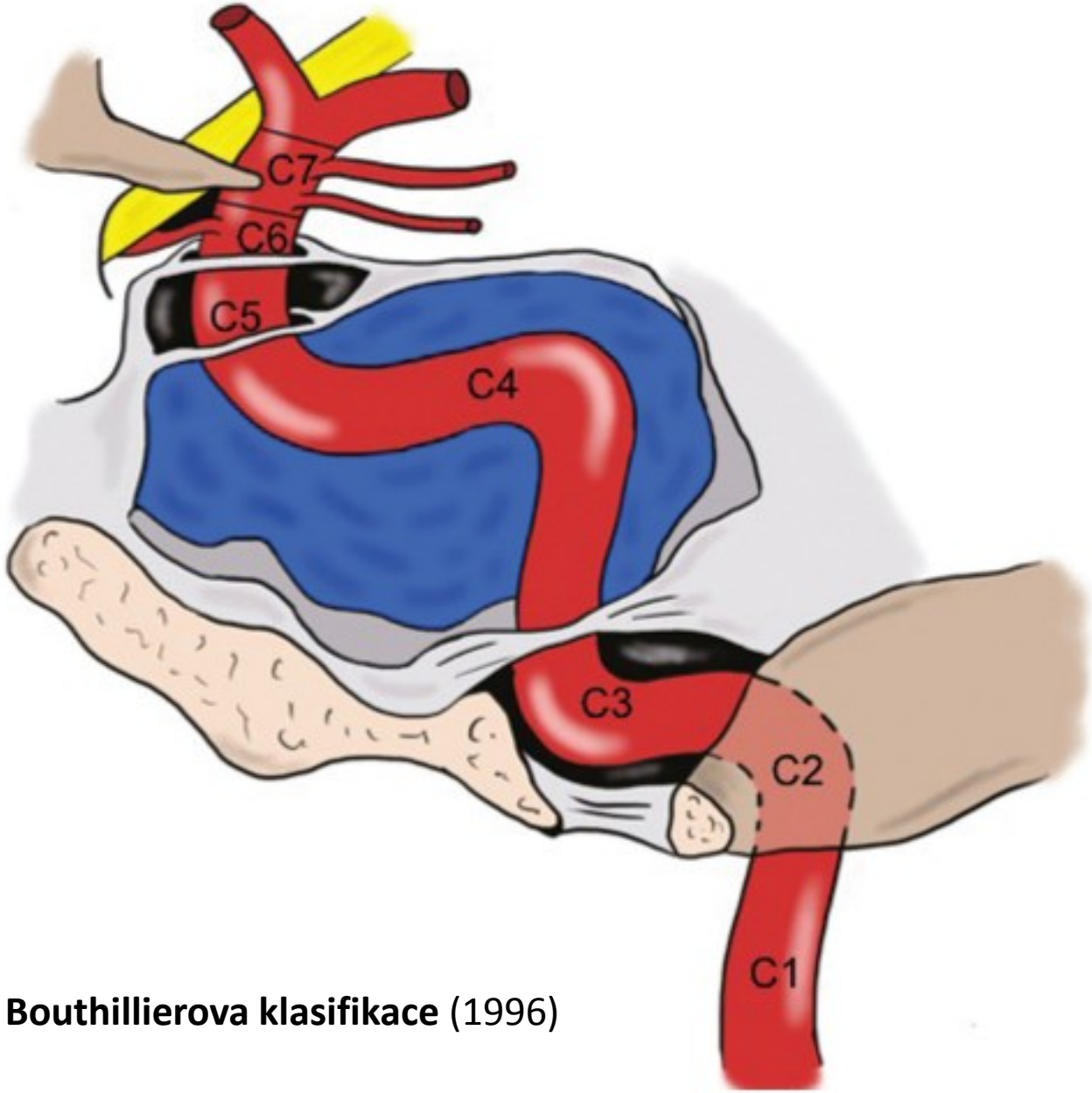
Pars cavernosa

R. basalis tentorii
R. marginalis tentorii
R. meningeus
Rr. nervorum
R. ganglii trigeminalis
R. sinus cavernosi
A. hypophysialis inferior

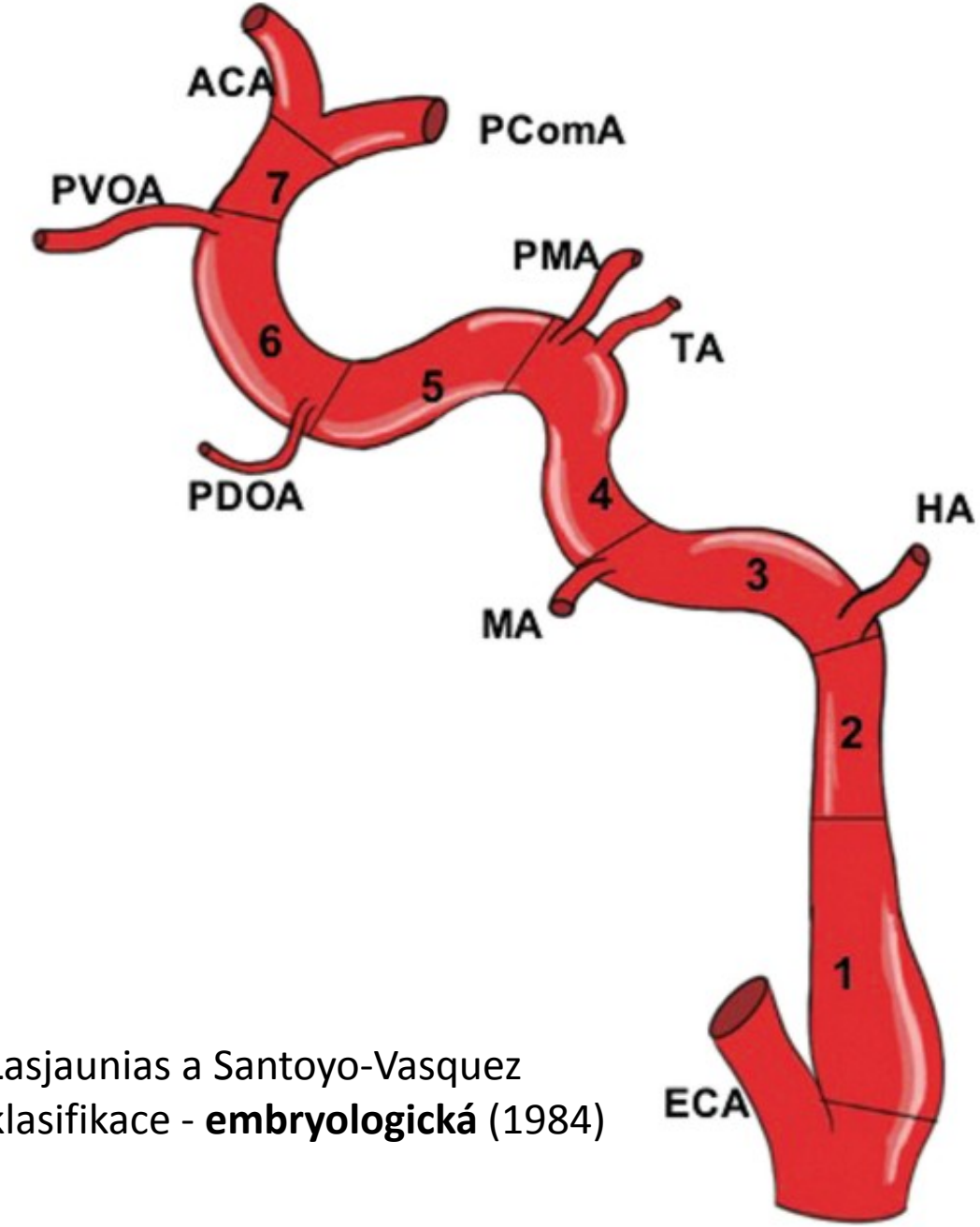
Pars cerebralis

A. hypophysialis superior
A. ophthalmica
A. choroidea anterior
A. cerebri anterior
A. cerebri media
A. communicans posterior





Bouthillierova klasifikace (1996)



Lasjaunias a Santoyo-Vasquez klasifikace - **embryologická** (1984)

C1 (*segmentum cervicale*)
- bez větví

C2 (*segmentum petrosus*)
- *aa. caroticotympanicae*
- *a. canalis pterygoidei*

C3 (*segmentum lacerum*)
- bez větví (ev. *a. canalis pterygoidei*)

C4 (*segmentum cavernosum*)
- *arteria meningohypophysialis*
- *truncus inferolateralis*
- *aa. capsulares*

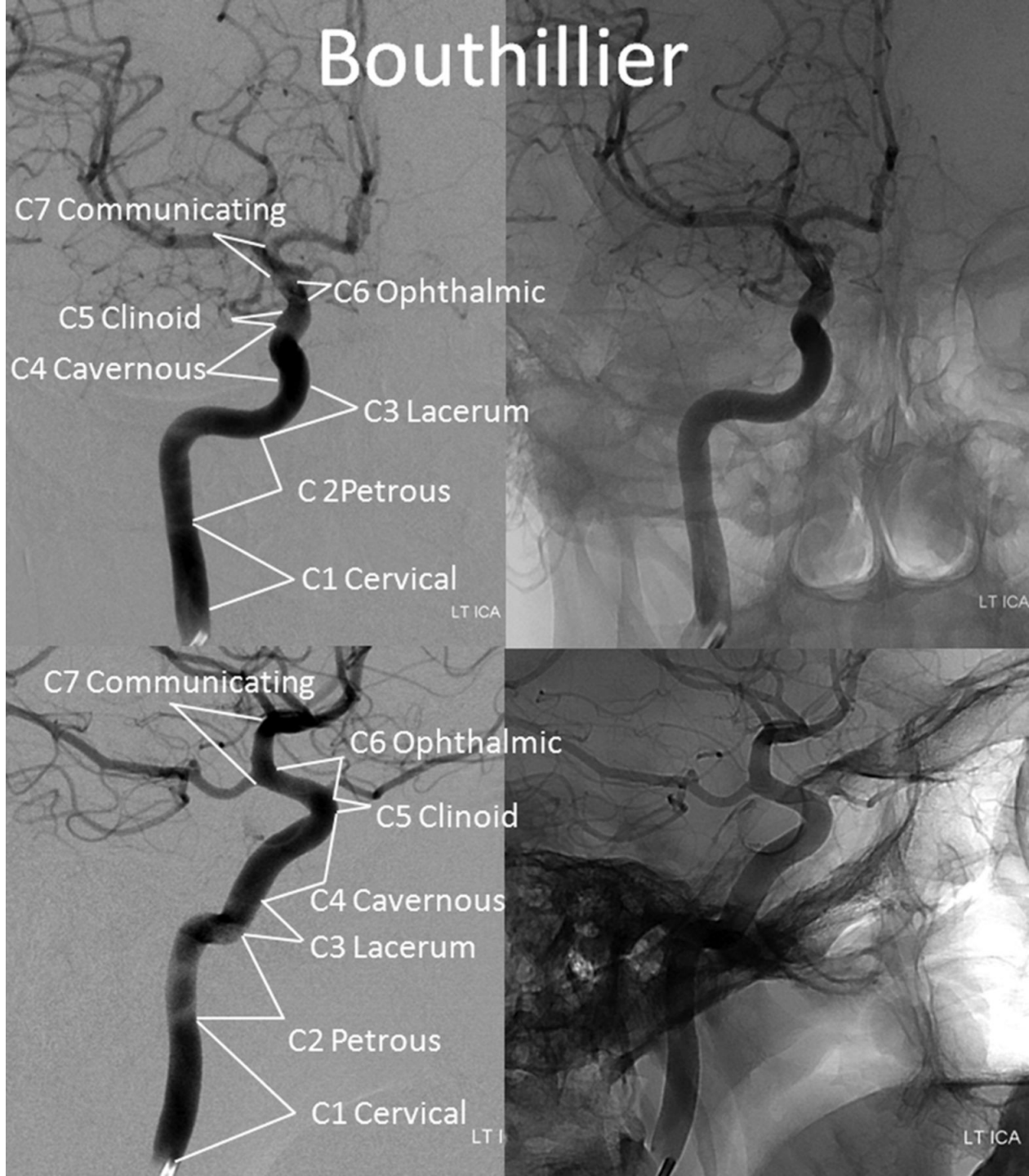
C5 (*segmentum clinoidale*)
- bez větví

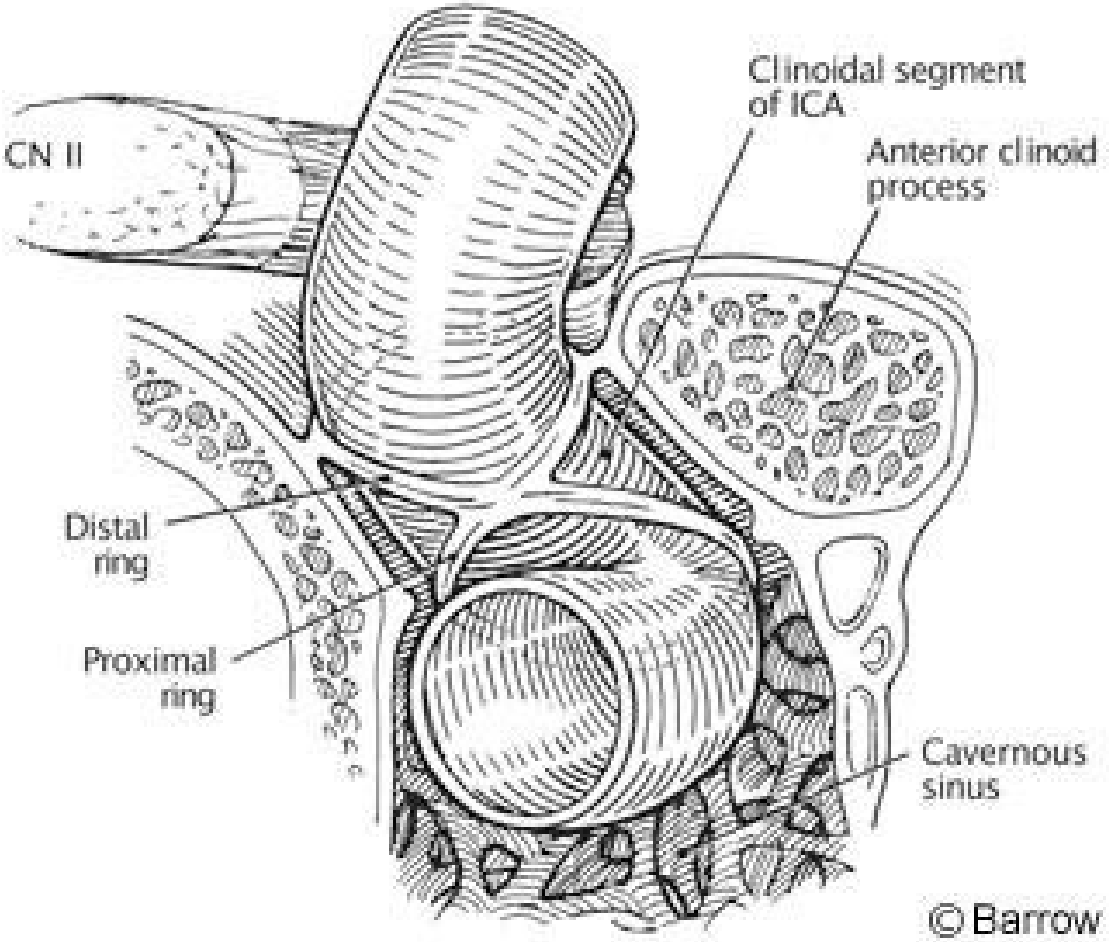
C6 (*segmentum ophthalmicum*)
- *arteria ophthalmica*
- *arteria hypophysialis superior*

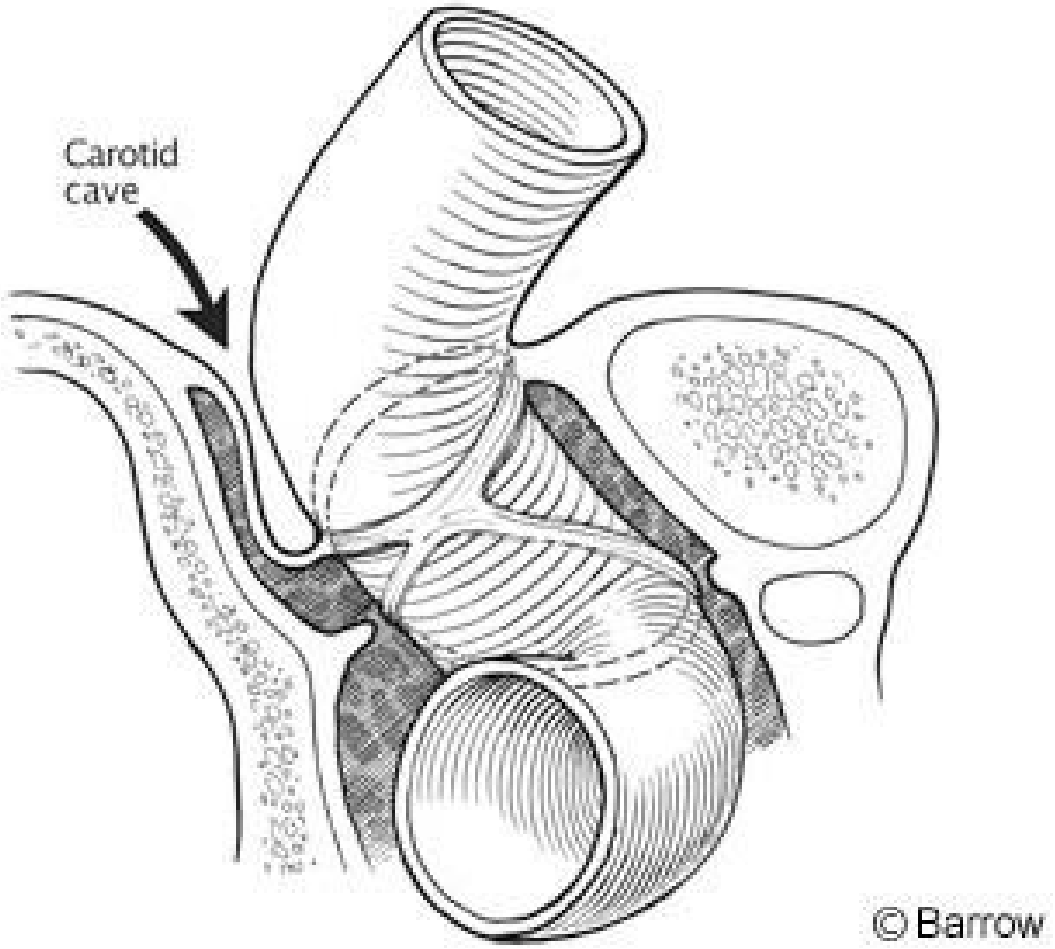
C7 (*segmentum communicans*)
- *arteria choroidea anterior*
- *arteria communicans posterior*

extradurálně

subdurálně




CN II
Clinoidal segment of ICA
Anterior clinoid process
Distal ring
Proximal ring
Cavernous sinus
© Barrow


Carotid cave
© Barrow

Aneurysmata C5 segmentu

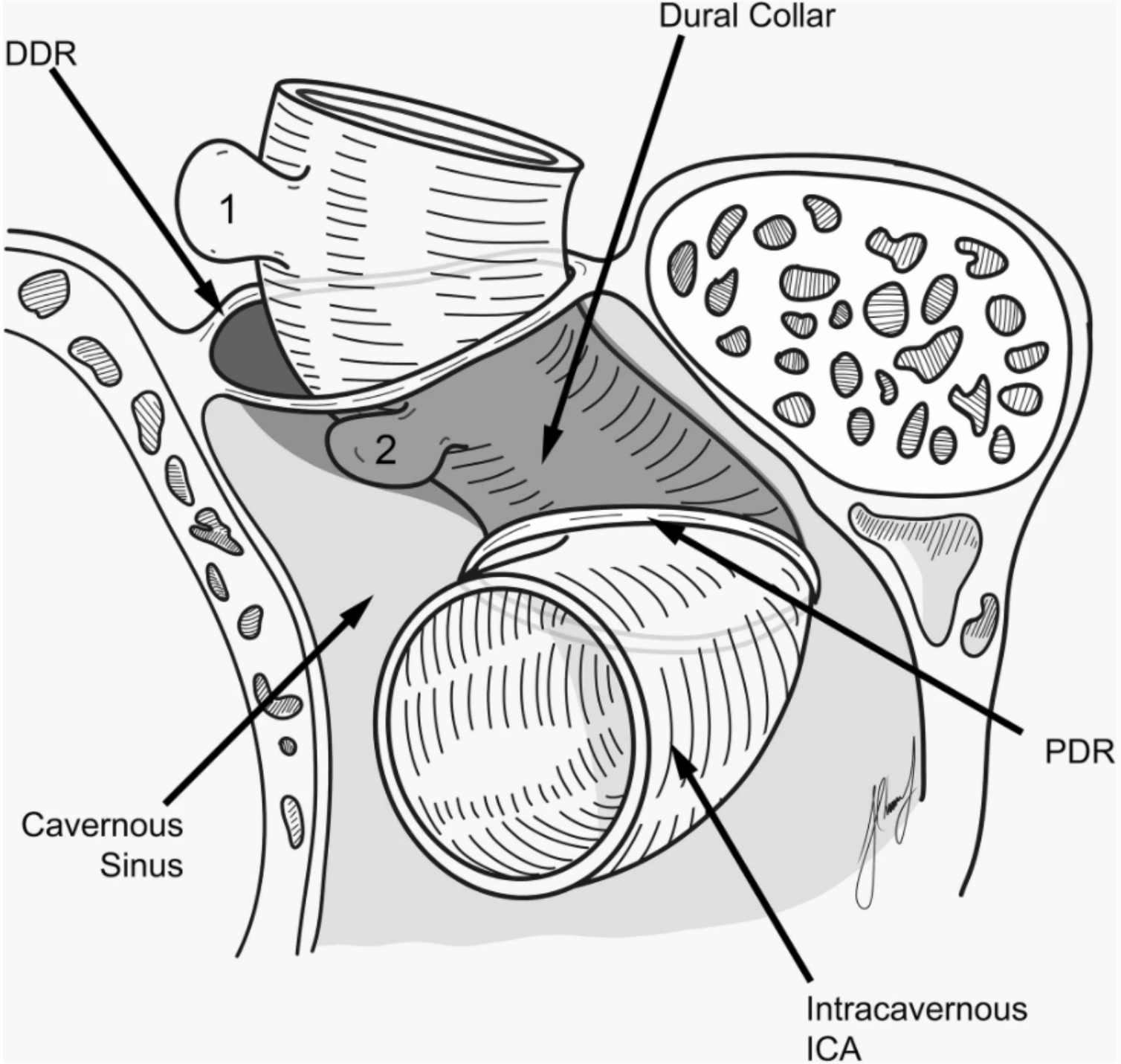
Intradurální aneurysmata: nad DDR

- riziko subarachnoidálního krvácení (SAH)

Extradurální aneurysmata: pod DDR

↓

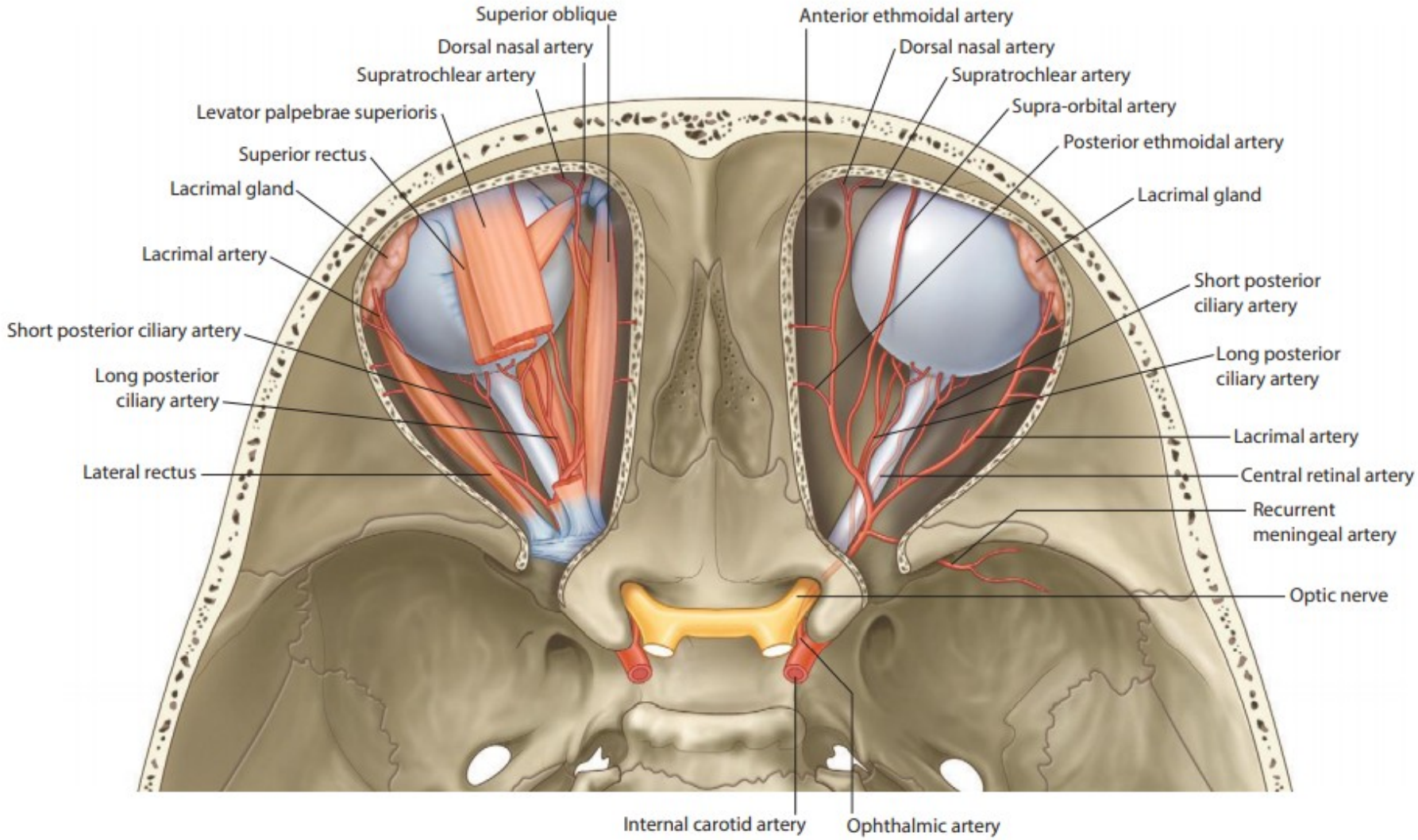
KONVENČNÍ HRANICE
(existence **„Carotid cave“!**)

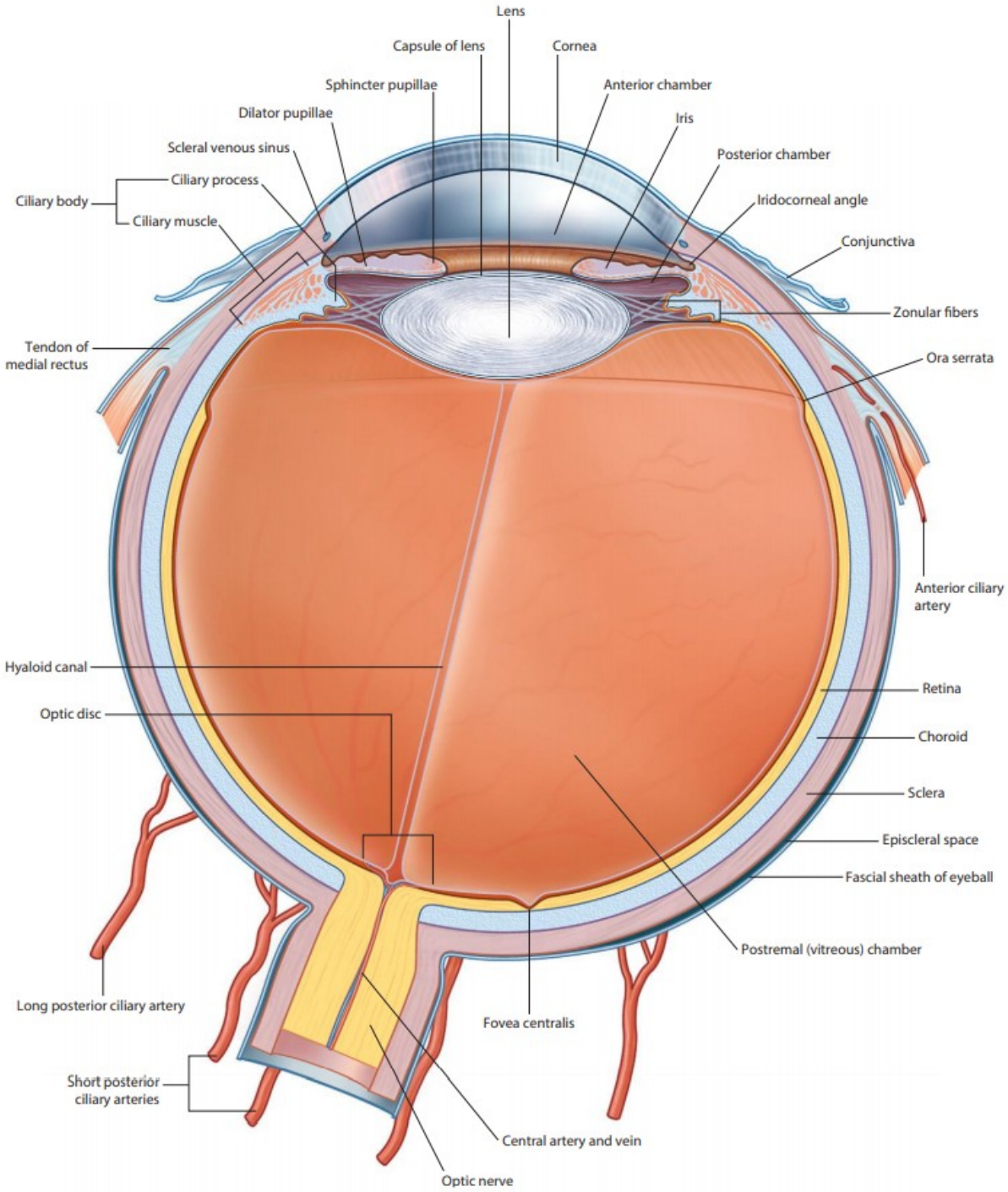


CÉVNÍ ZÁSOBENÍ OČNICE

Arteria ophthalmica

- ***a. centralis retinae***
- ***a. lacrimalis***
  - *aa. ciliares anteriores*
  - *rr. palpebrales laterales*
- ***aa. ciliares posteriores breves***
- ***aa. ciliares posteriores longae***
- ***aa. ciliares anteriores***
- ***aa. musculares***
- ***a. supraorbitalis***
- ***a. ethmoidalis posterior***
- ***a. ethmoidalis anterior***
  - *r. menigeus anterior*
- ***aa. palpebrales mediales***
- ***a. supratrochlearis***
- ***a. dorsalis nasi***




Lens
Capsule of lens
Cornea
Sphincter pupillae
Anterior chamber
Dilator pupillae
Iris
Scleral venous sinus
Posterior chamber
Ciliary process
Ciliary body
Iridocorneal angle
Ciliary muscle
Conjunctiva
Zonular fibers
Tendon of medial rectus
Ora serrata
Anterior ciliary artery
Hyaloid canal
Retina
Optic disc
Choroid
Sclera
Episcleral space
Fascial sheath of eyeball
Postremal (vitreous) chamber
Long posterior ciliary artery
Fovea centralis
Short posterior ciliary arteries
Central artery and vein
Optic nerve

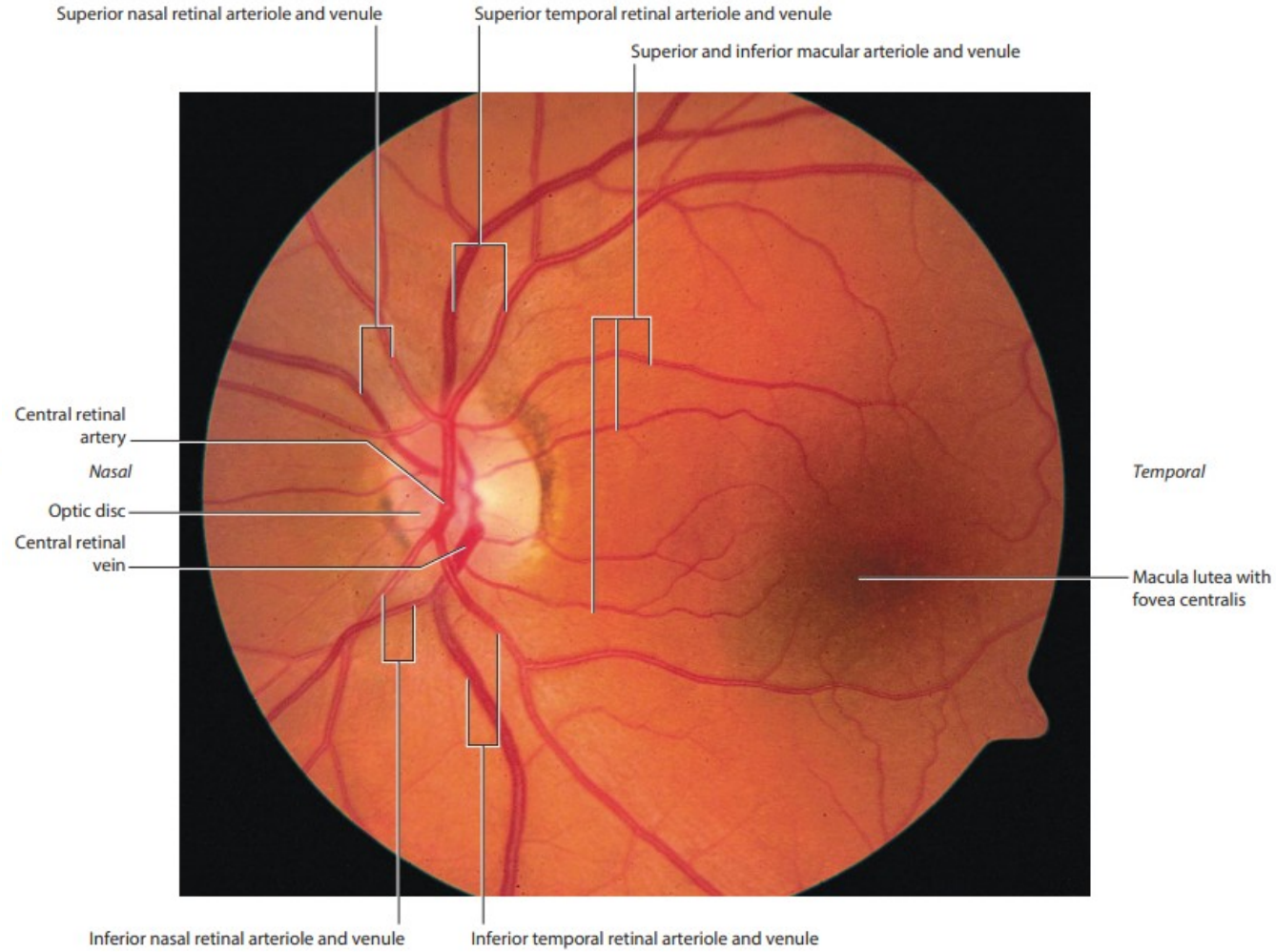
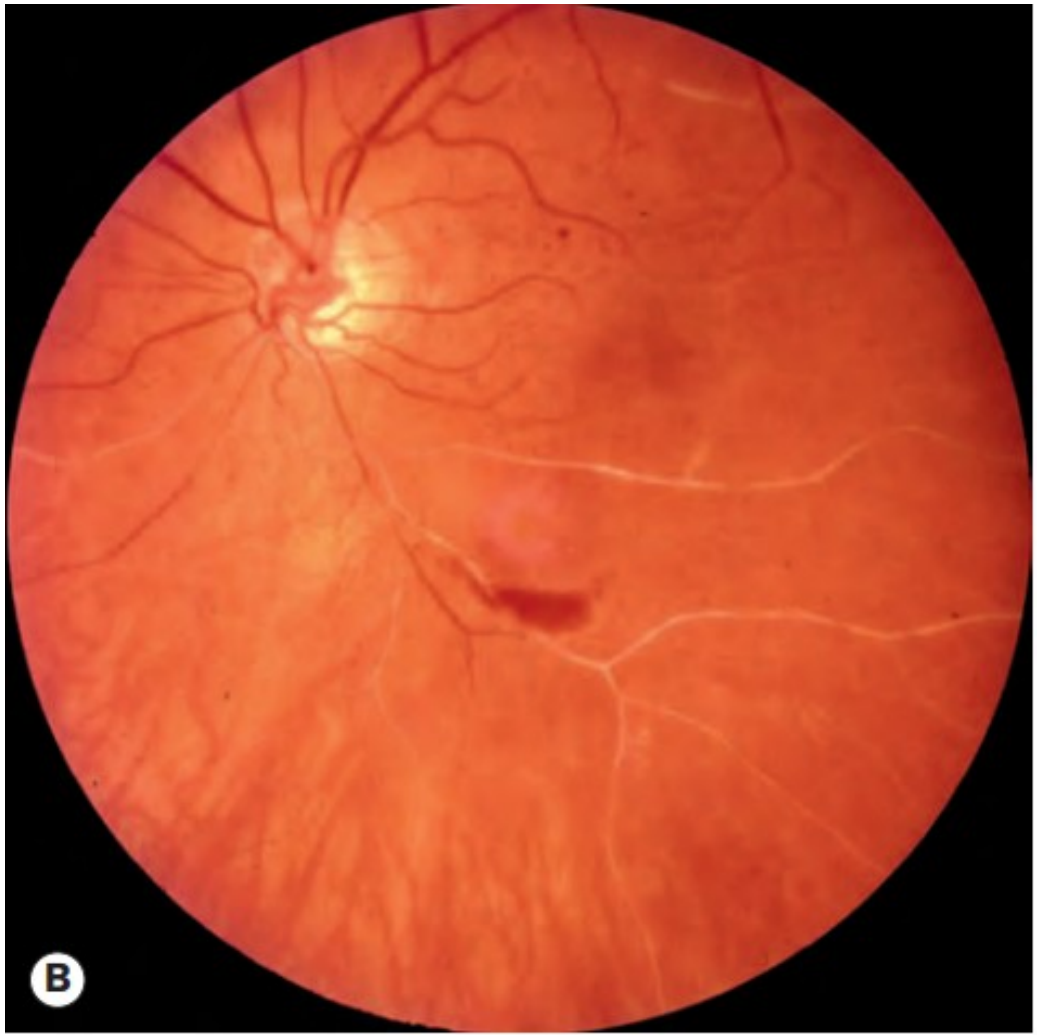

Superior nasal retinal arteriole and venule
Superior temporal retinal arteriole and venule
Superior and inferior macular arteriole and venule
Central retinal artery
Nasal
Optic disc
Central retinal vein
Temporal
Macula lutea with fovea centralis
Inferior nasal retinal arteriole and venule
Inferior temporal retinal arteriole and venule

FIG. 36.12 Keratoconjunctivitis sicca.

FIG. 36.3 Chronic uveitis in a patient with oligoarticular juvenile idiopathic arthritis: "white eye" uveitis.

OKLUZE VĚTVÍ A. CENTRALIS RETINEAE



ARTERIA VERTEBRALIS

Krční větve

Rr. spinales

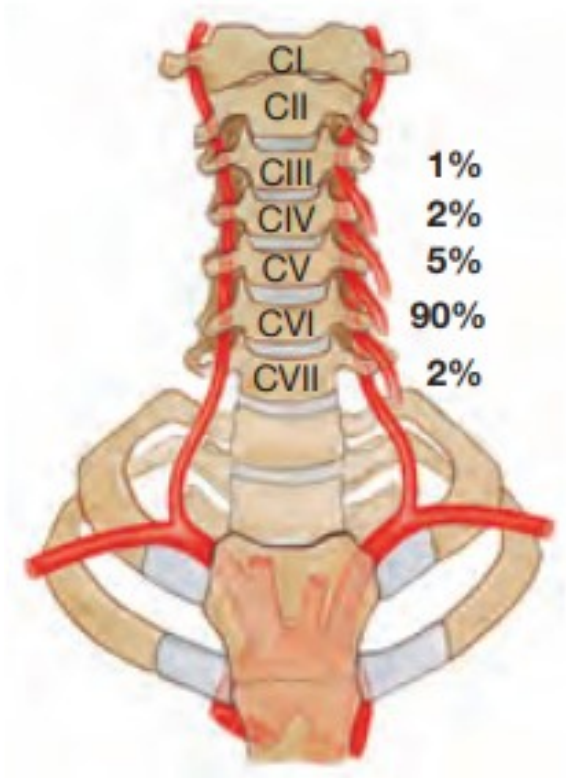
Rr. musculares

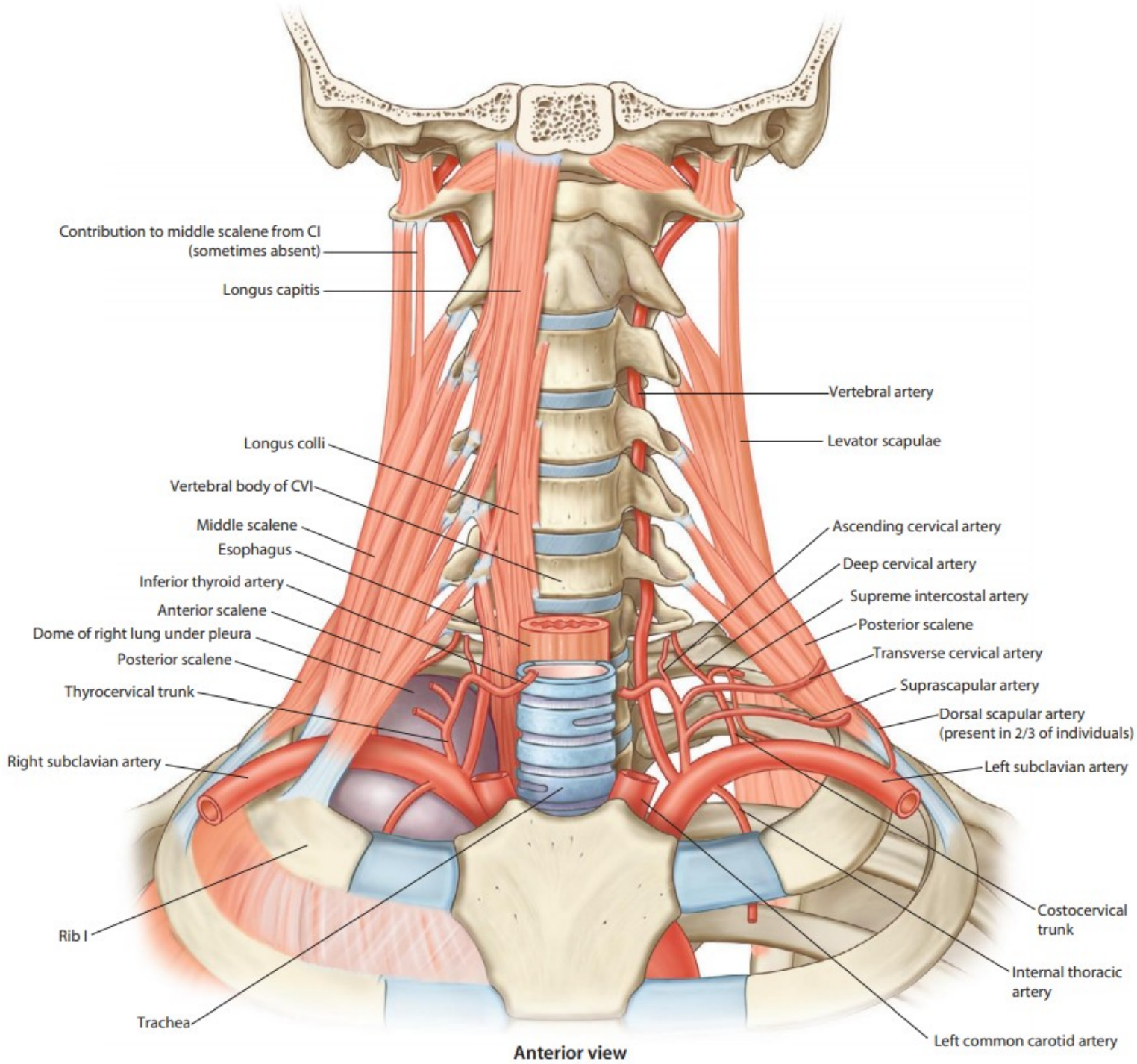
R. meningeus

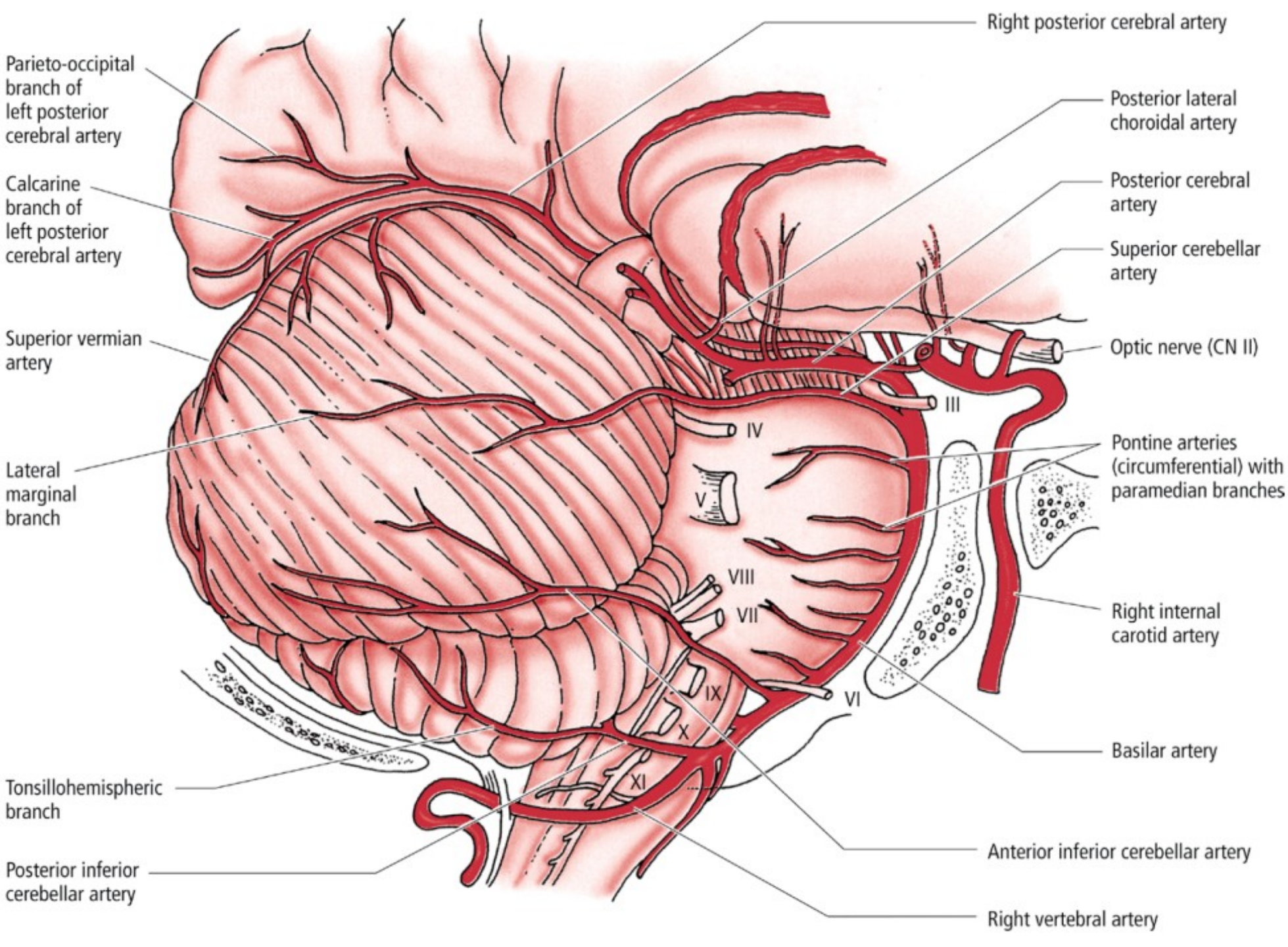
Lebeční větve

A. basilaris

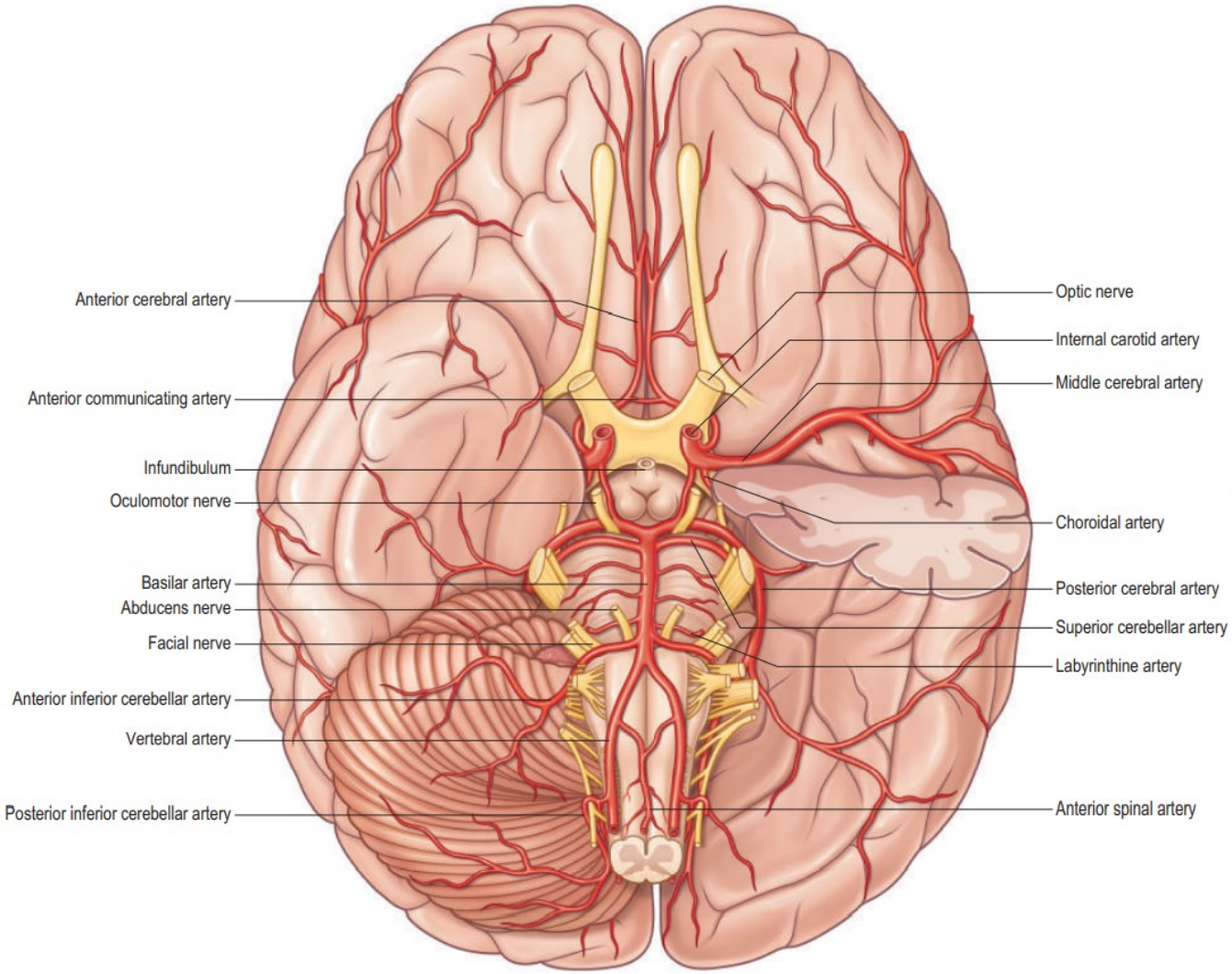
Aa. cerebri posteriores

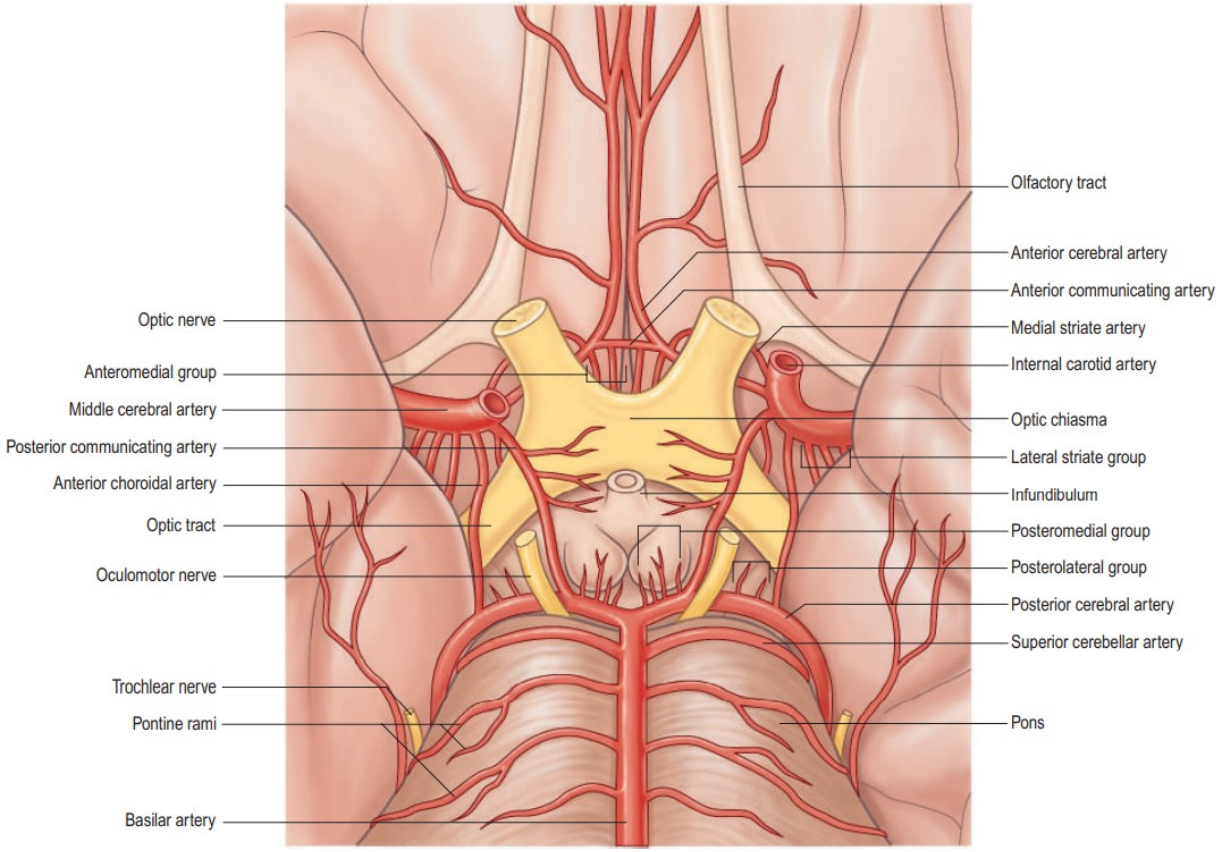





Right posterior cerebral artery
Parieto-occipital branch of left posterior cerebral artery
Posterior lateral choroidal artery
Calcarine branch of left posterior cerebral artery
Posterior cerebral artery
Superior cerebellar artery
Superior vermian artery
Optic nerve (CN II)
III
IV
Lateral marginal branch
Pontine arteries (circumferential) with paramedian branches
V
VIII
VII
Right internal carotid artery
IX
VI
X
Basilar artery
XI
Tonsillohemispheric branch
Anterior inferior cerebellar artery
Posterior inferior cerebellar artery
Right vertebral artery

CIRCULUS ARTERIOSUS CEREBRI *WILLISI*





ARTERIÁLNÍ ZÁSOBENÍ MOZKU

Přední 2/3 → *a. carotis interna*

Zadní 1/3 → *a. vertebralis*

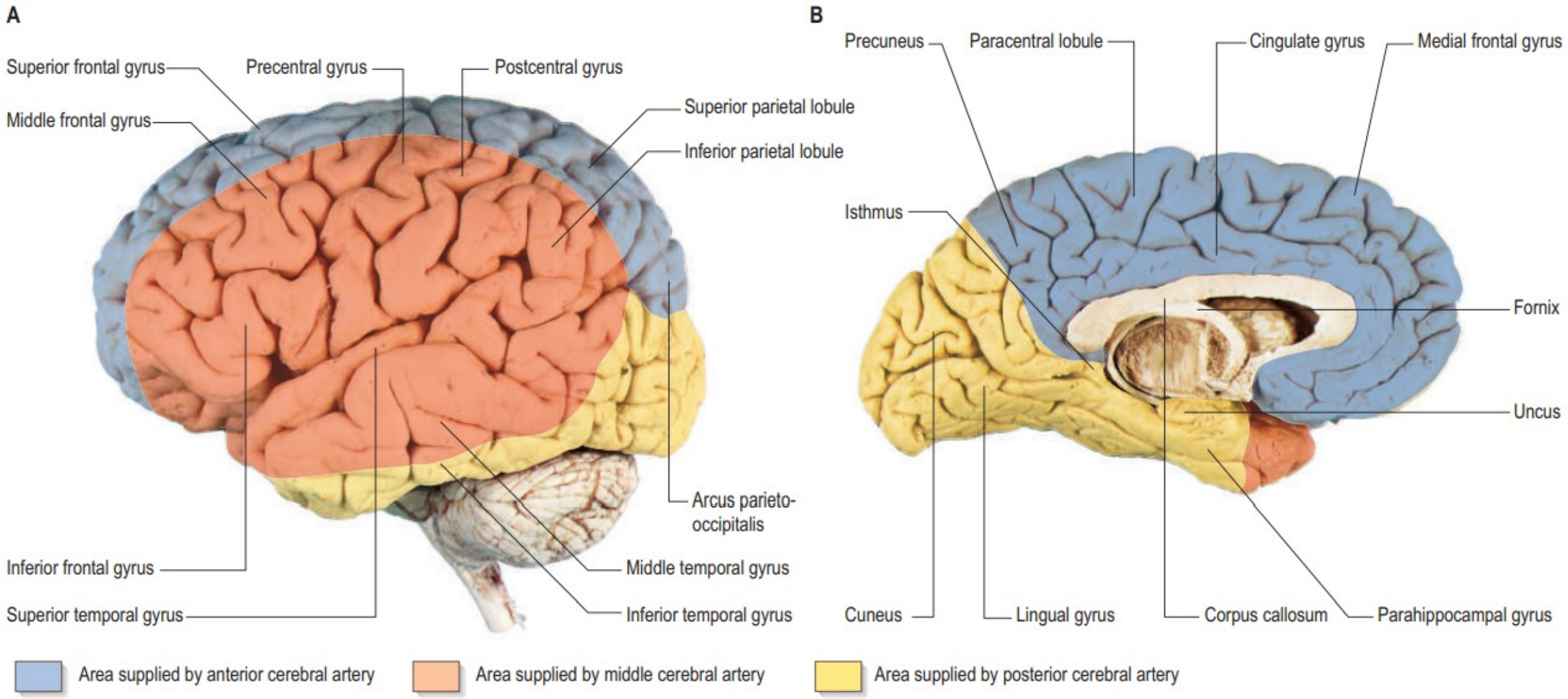
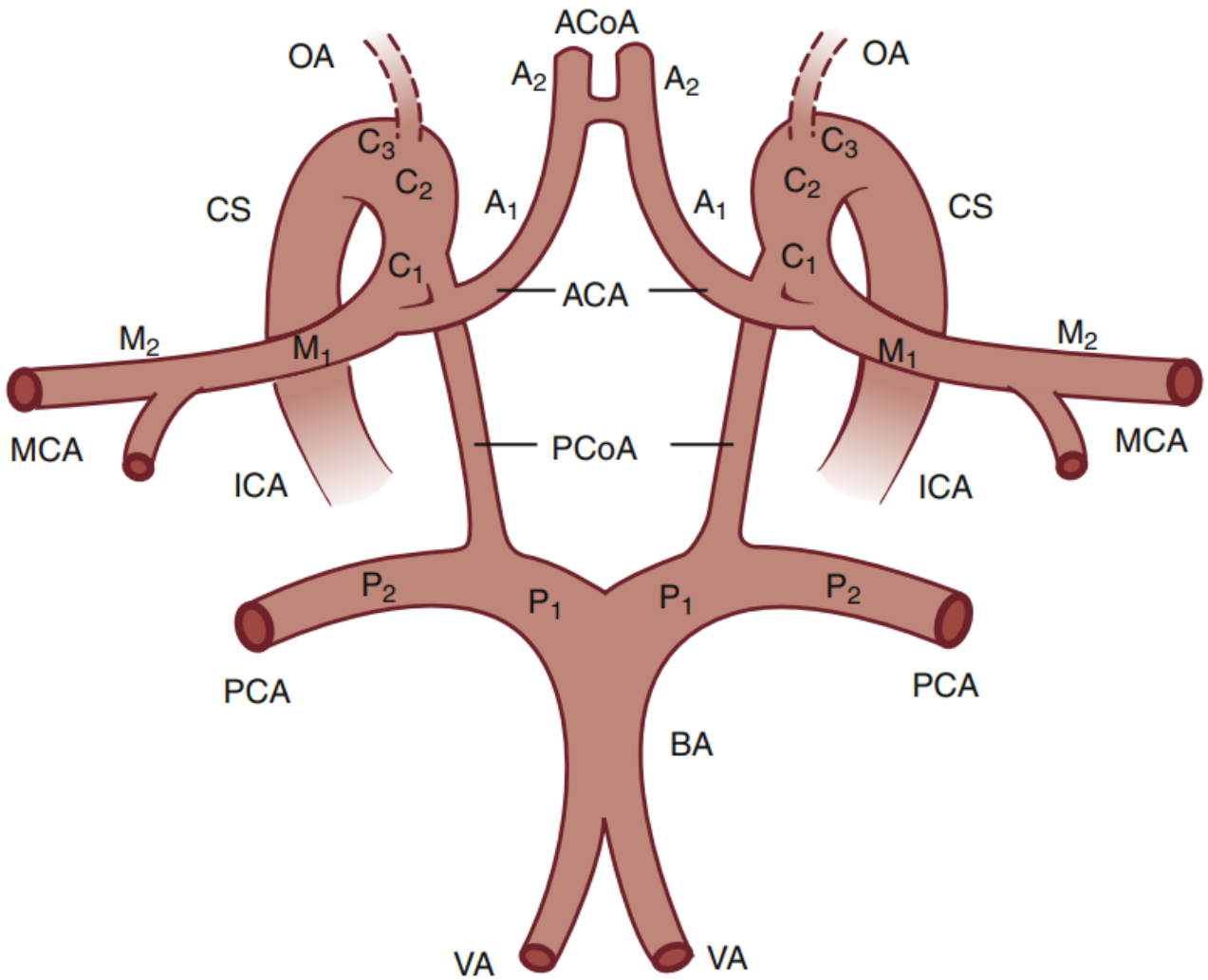


Fig. 19.5 The arteries supplying the left cerebral hemispheres. **A**, Lateral surface. **B**, Medial surface.

ANEURYSMA WILLISOVA OKRUHU



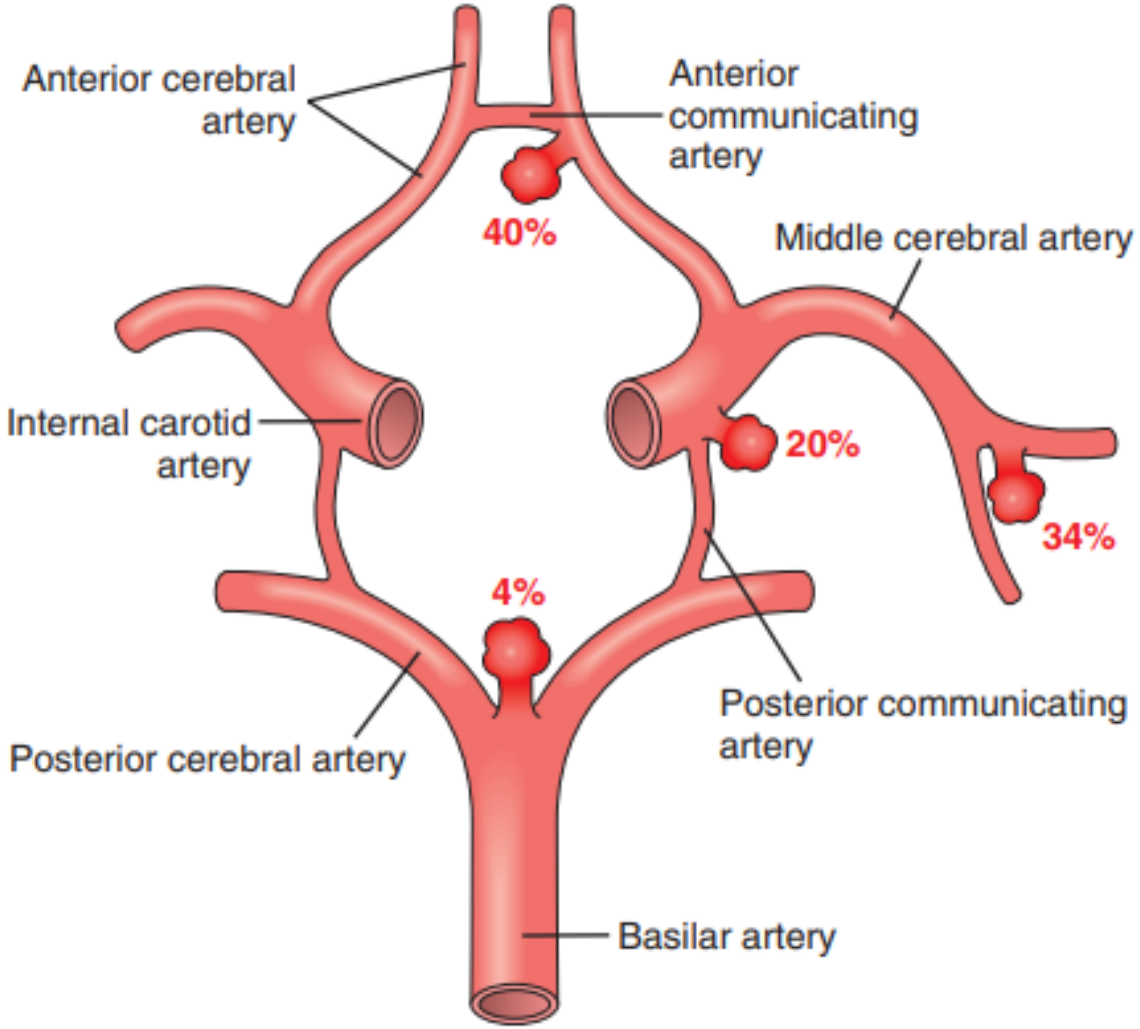


Figure 28-19 Common sites of saccular (berry) aneurysms in the circle of Willis.

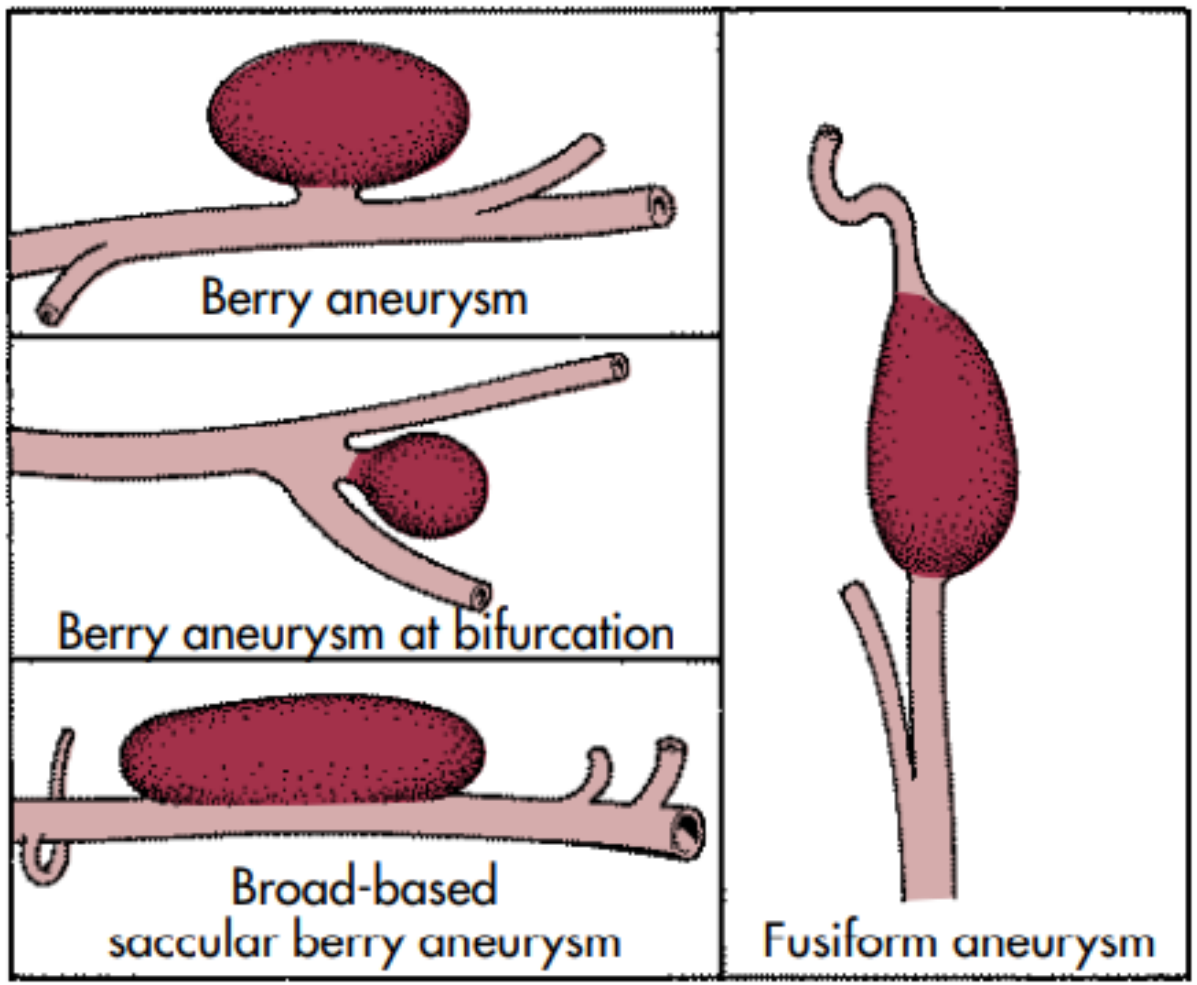
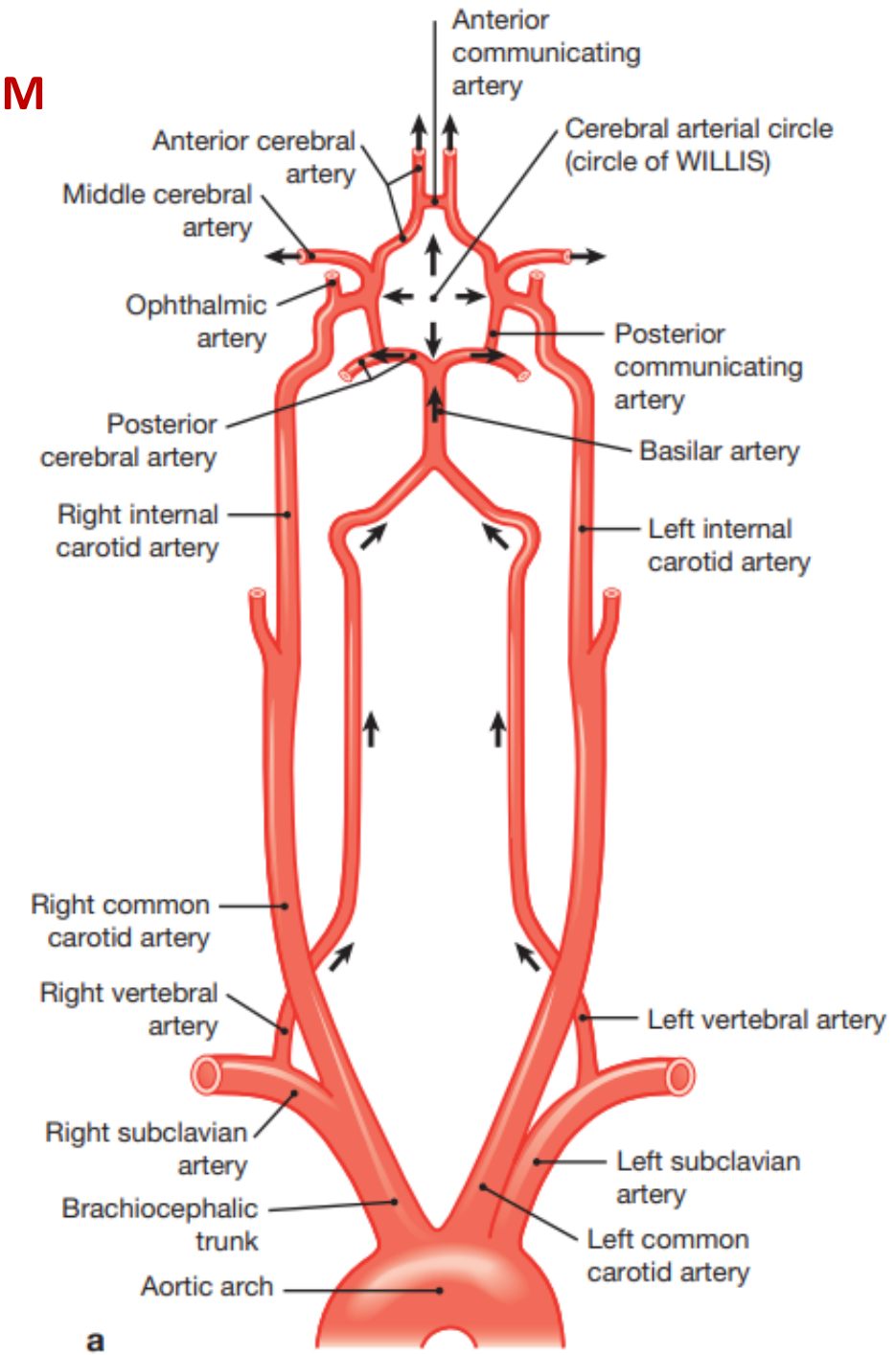
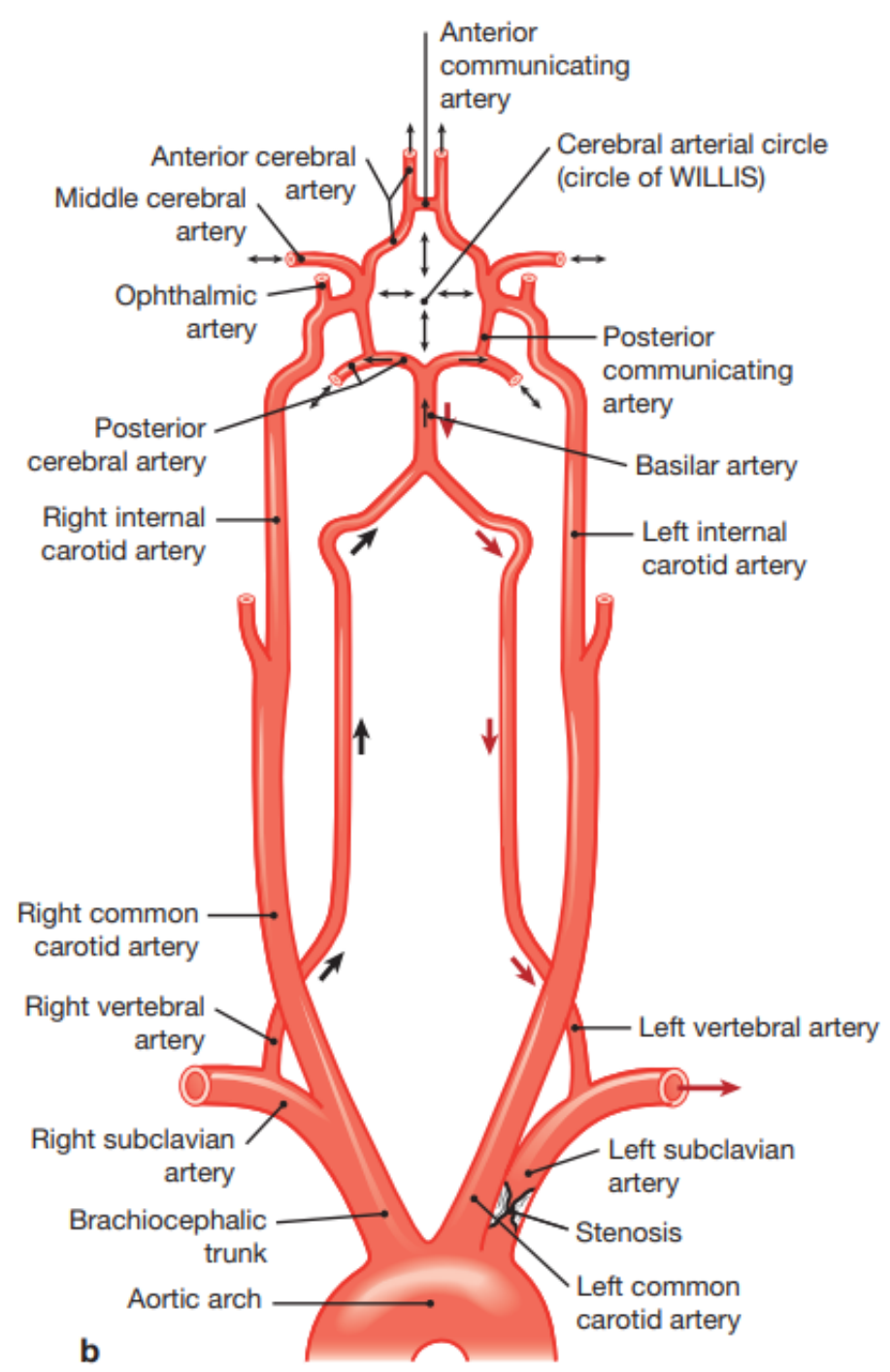


FIGURE 18-18 Types of Aneurysms.

FIGURE 18-19 **Berry Aneurysm, Angiogram.** In this lateral view with contrast filling a portion of the cerebral arterial circulation can be seen a berry aneurysm *(arrow)* involving the middle cerebral artery of the circle of Willis at the base of the brain. (From Klatt EC: *Robbins and Cotran atlas of pathology,* Philadelphia, 2006, Saunders.)

SUBCLAVIAN STEAL SYNDROM





ARTERIA CAROTIS EXTERNA

Ventrální větve

A. thyroidea superior

A. lingualis

A. facialis

Mediální větev

A. pharyngea ascendens

Dorsální větve

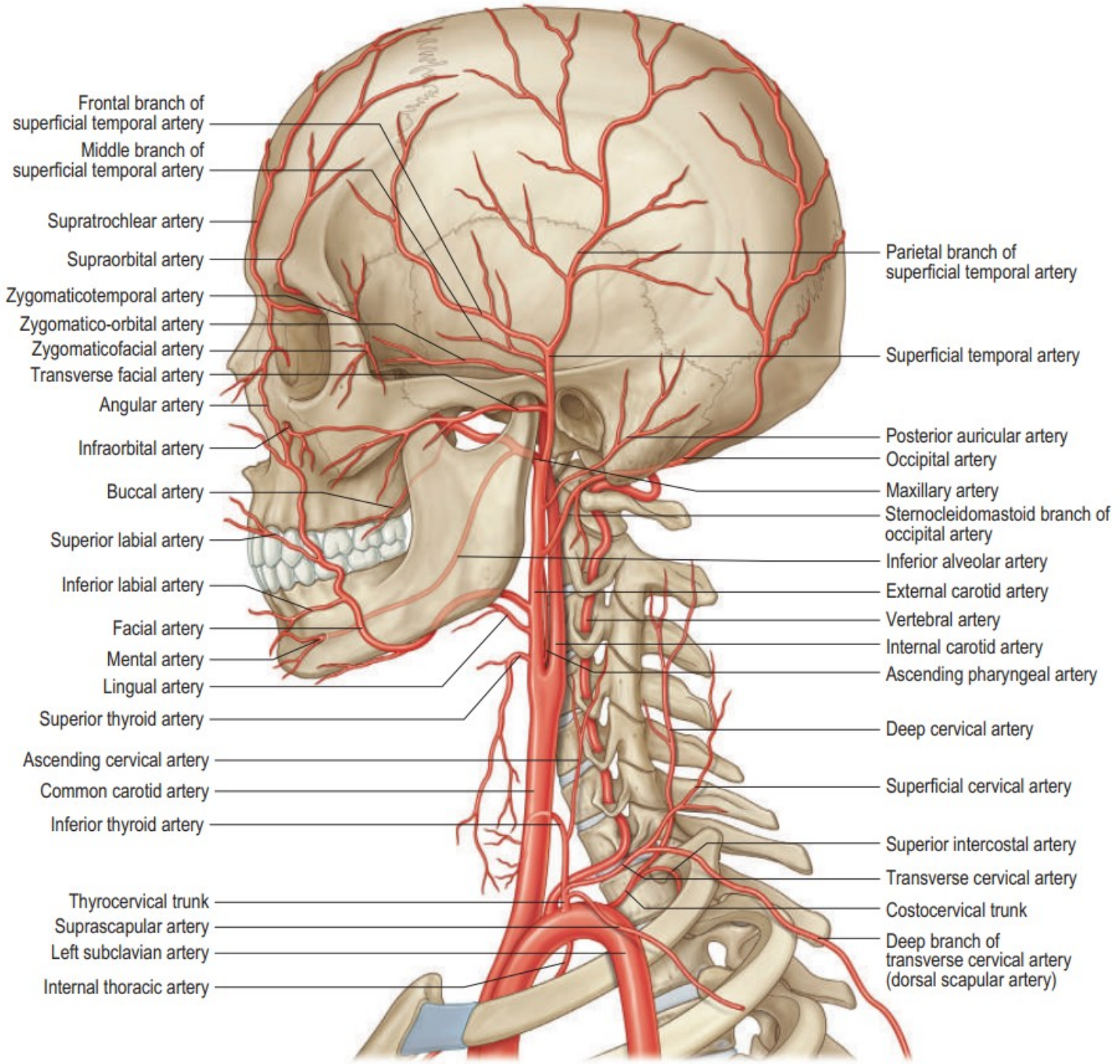
A. occipitalis

A. auricularis posterior

Terminální větve

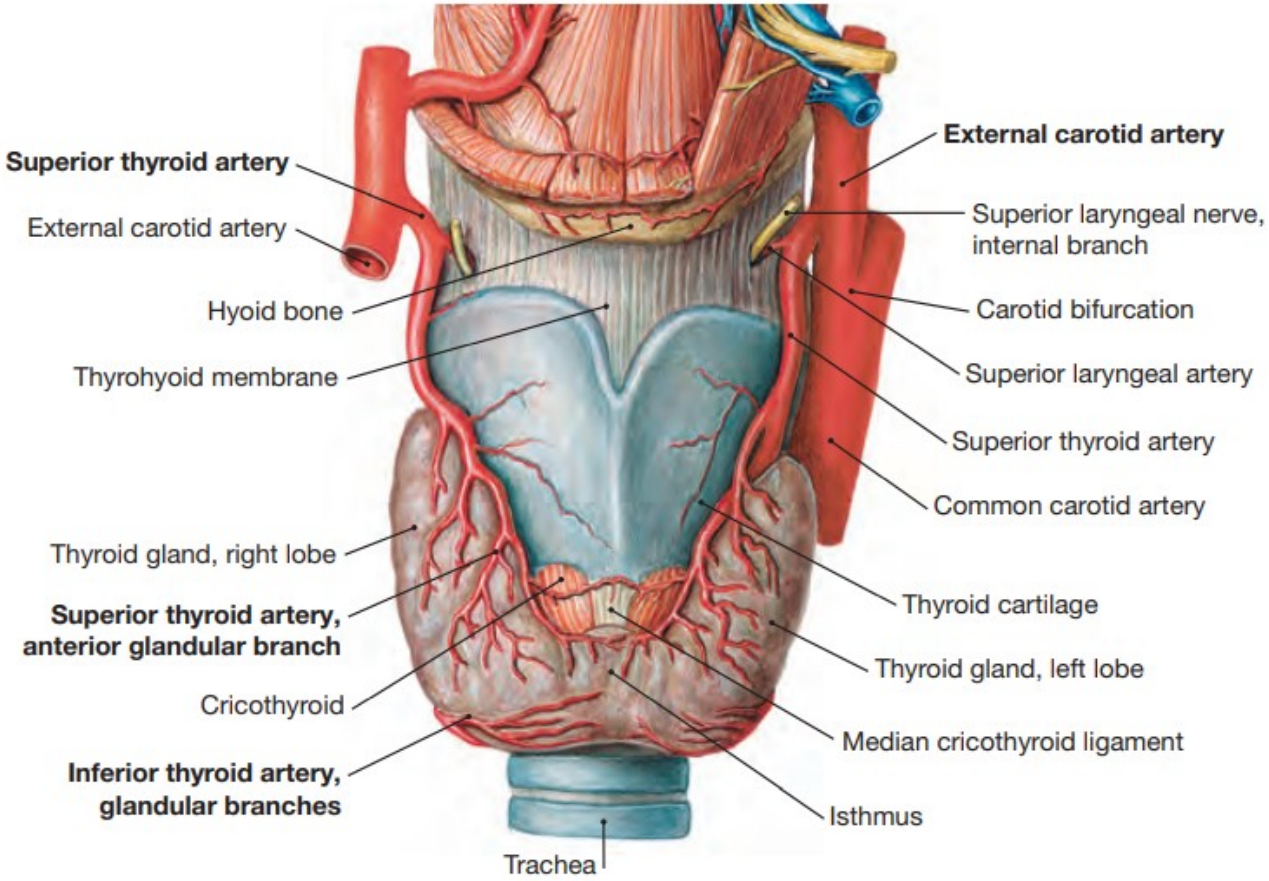
A. maxillaris

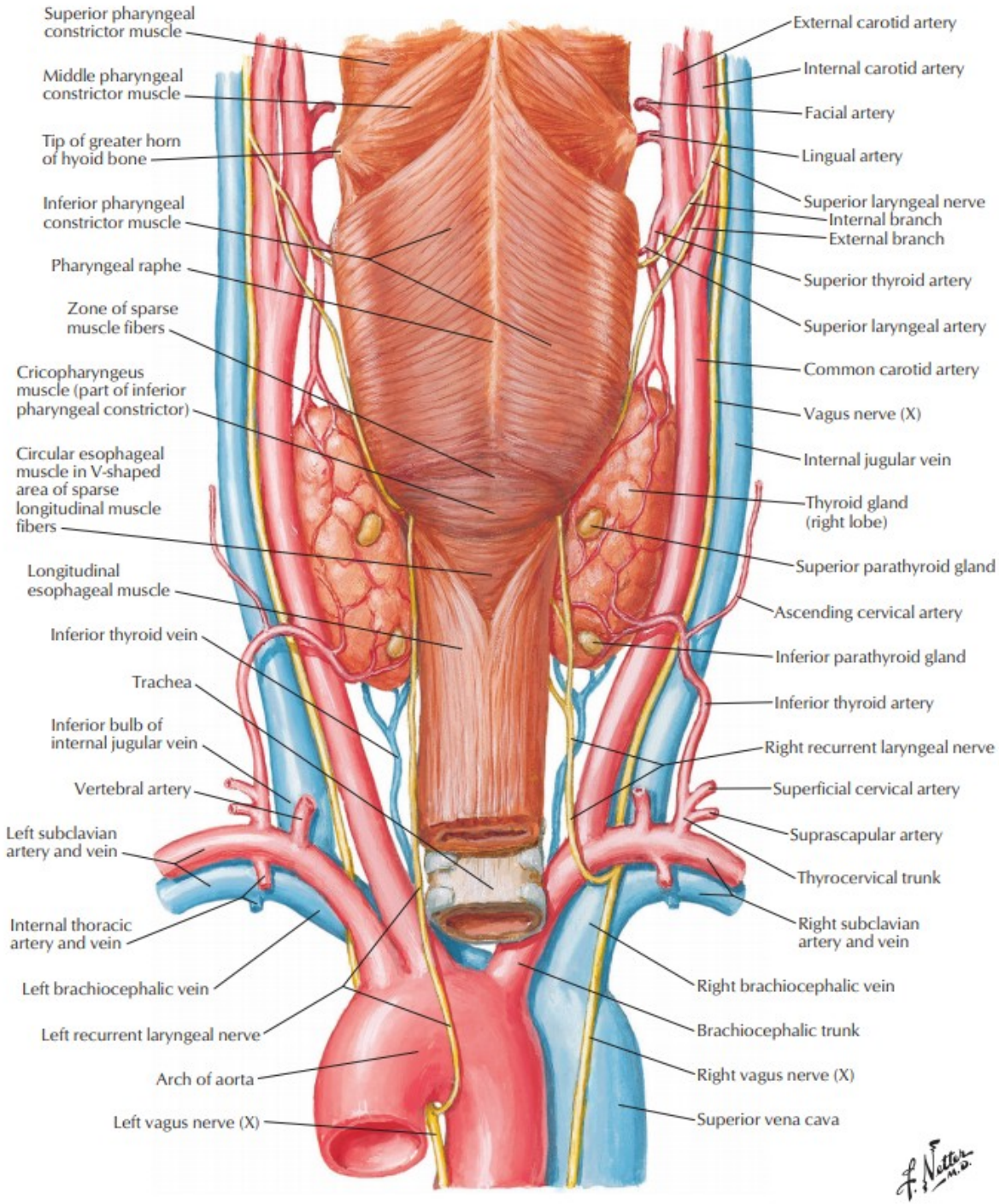
A. temporalis superficialis



ARTERIA THYROIDEA SUPERIOR

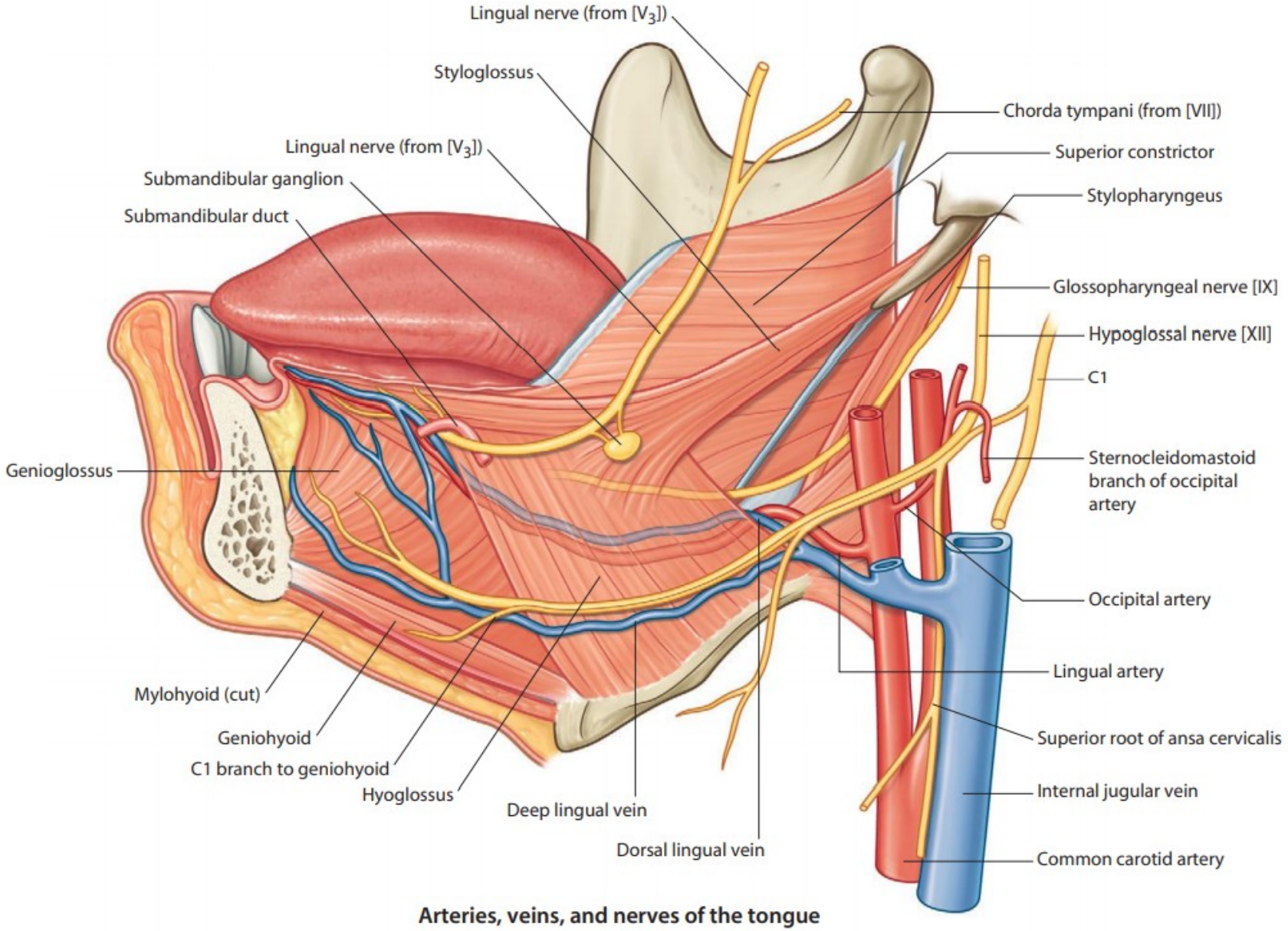
- ***a. laryngea superior***
- ***r. cricothyroideus***
- ***r. infrahyoideus***
- ***r. sternocleinomastoideus***
- ***rr. glandulares*** *(r. anterior, lateralis et posterior)*





ARTERIA LINGUALIS

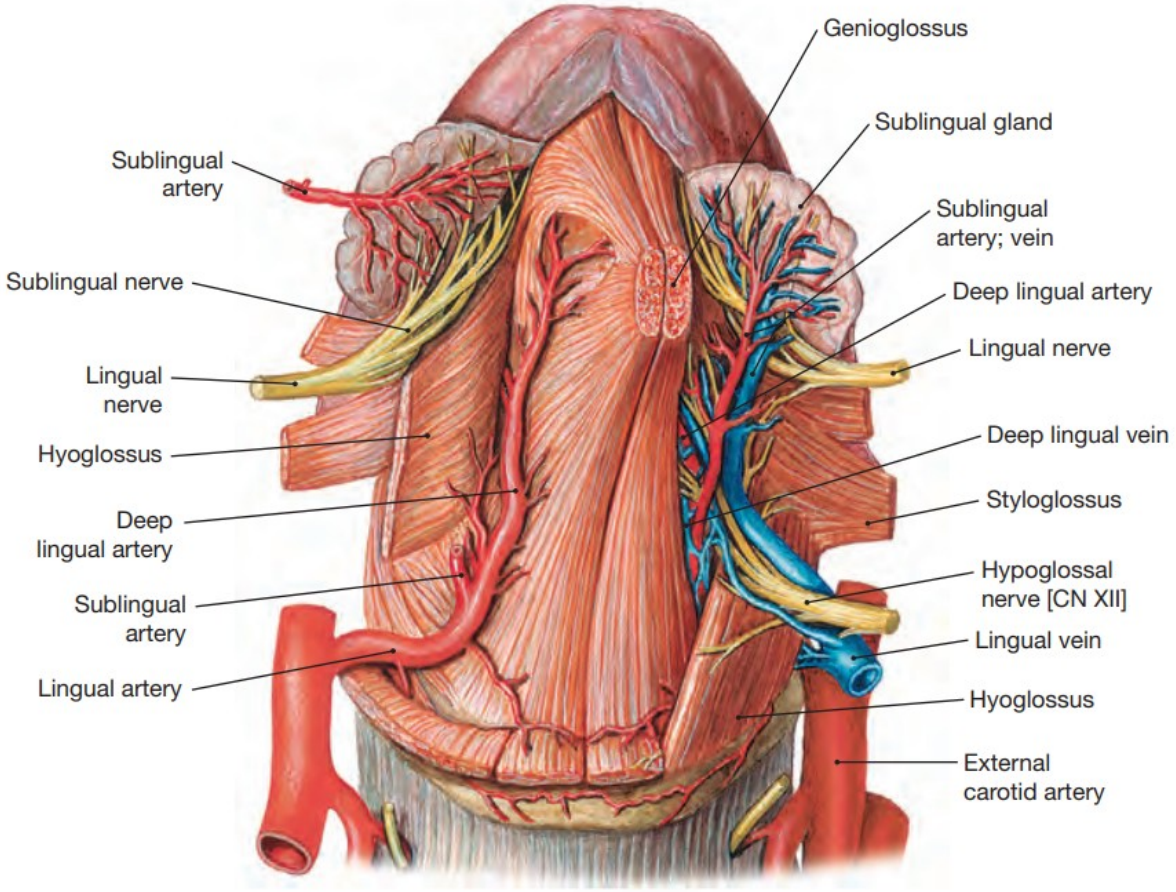
- *r. suprahyoideus*
- *a. sublingualis*
- *rr. dorsales linguae*
- *a. profunda linguae*

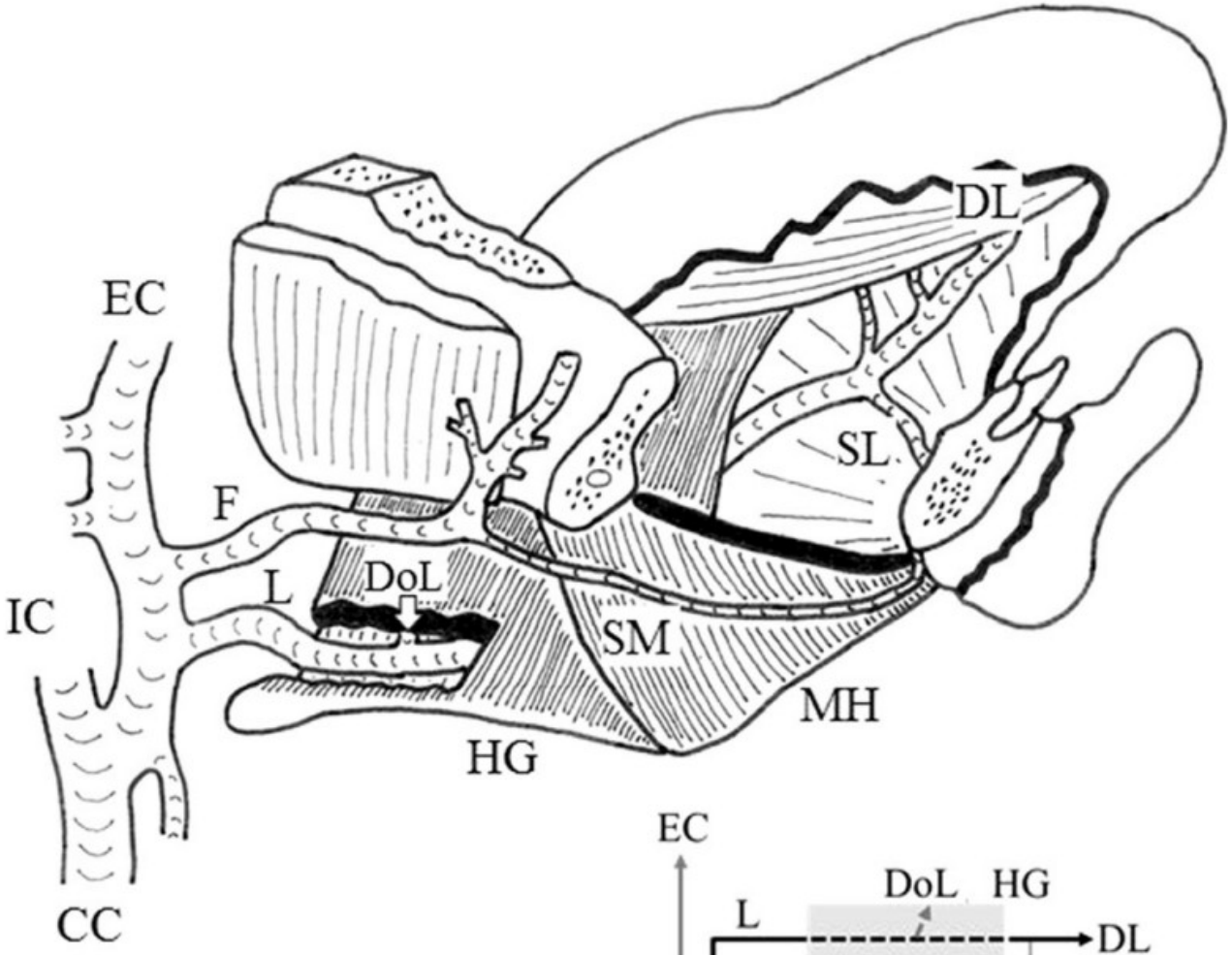


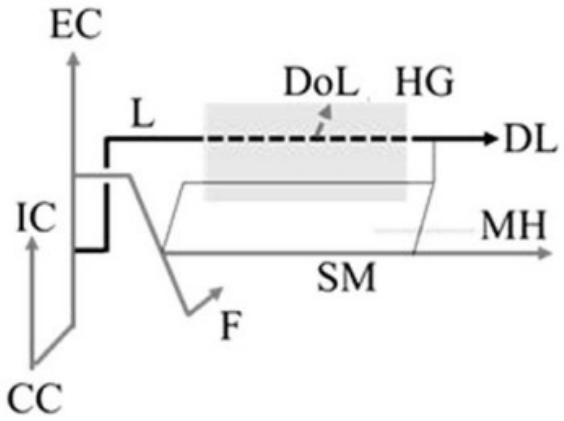
Arteries, veins, and nerves of the tongue

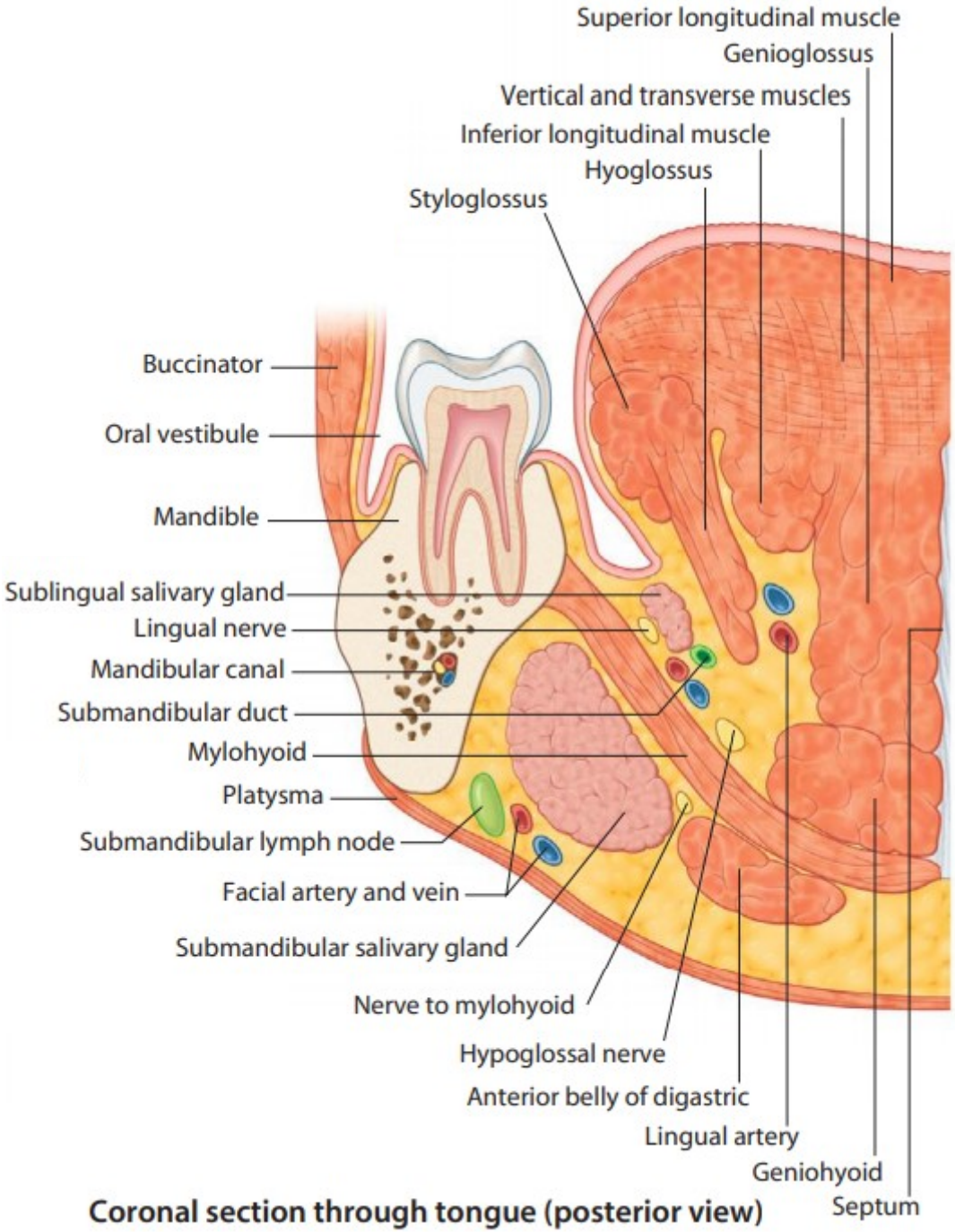
Arteria lingualis - M typ

- nejčastější typ
- prochází štěrbinou mezi *m. hyoglossus* a *m. genioglossus*

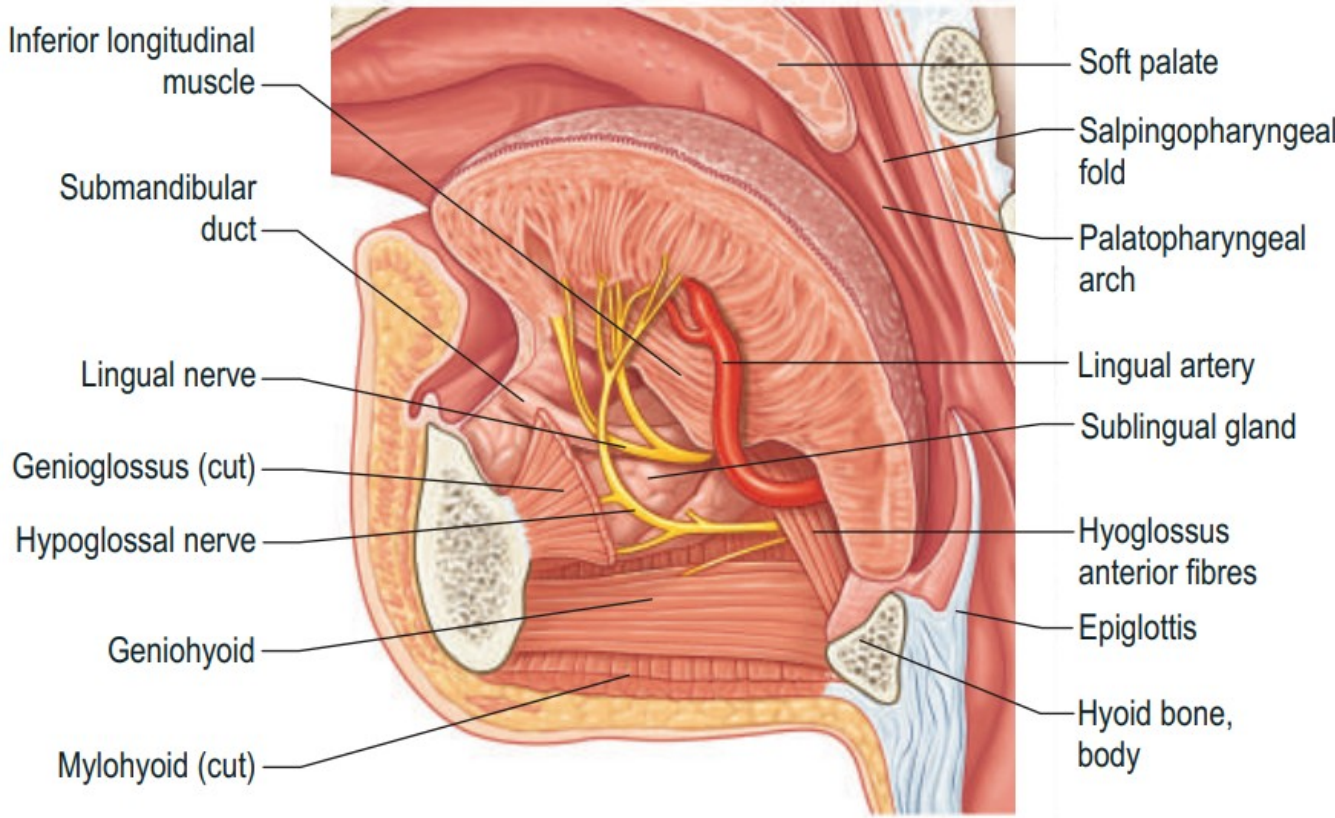








Coronal section through tongue (posterior view)

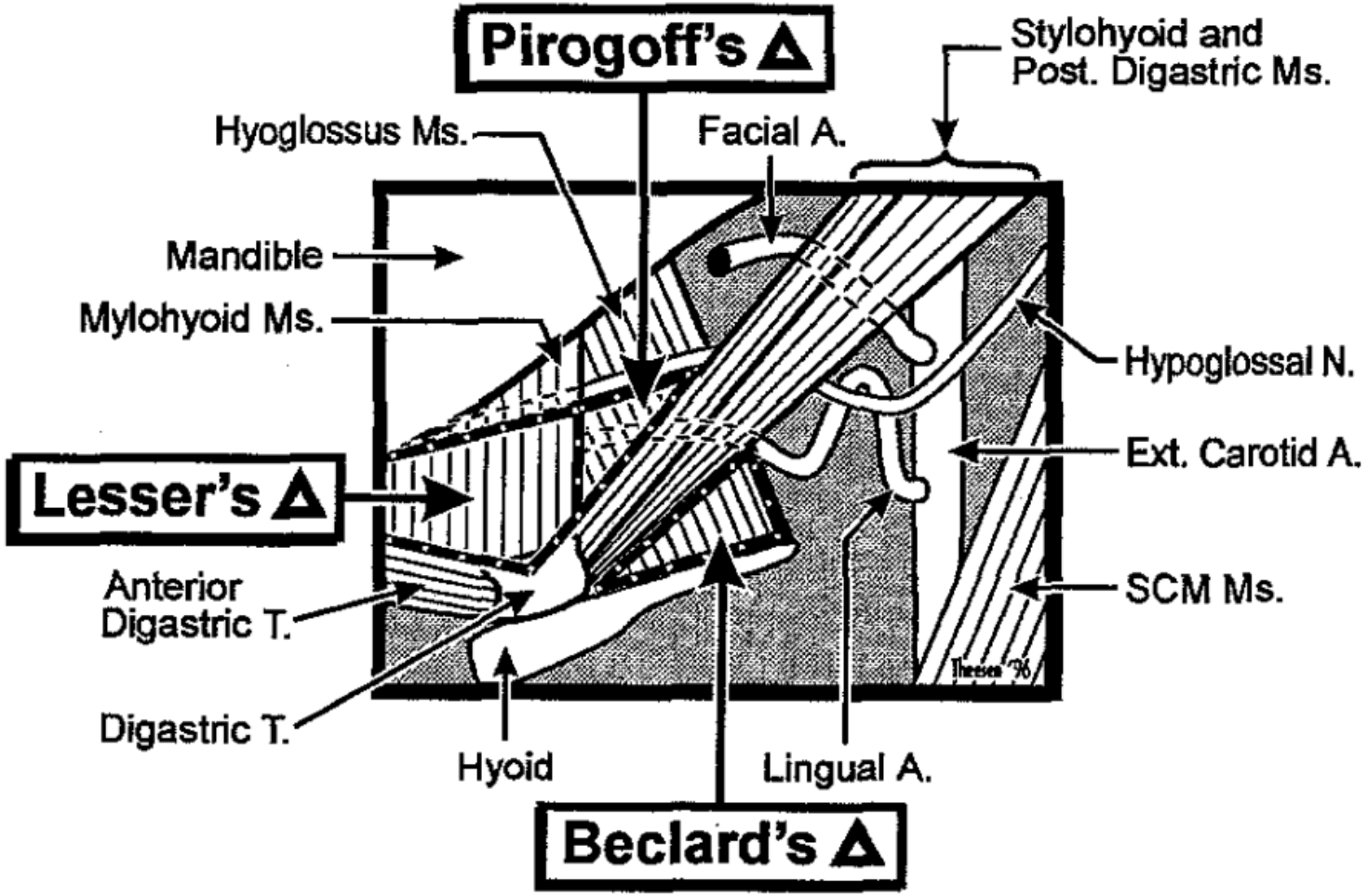


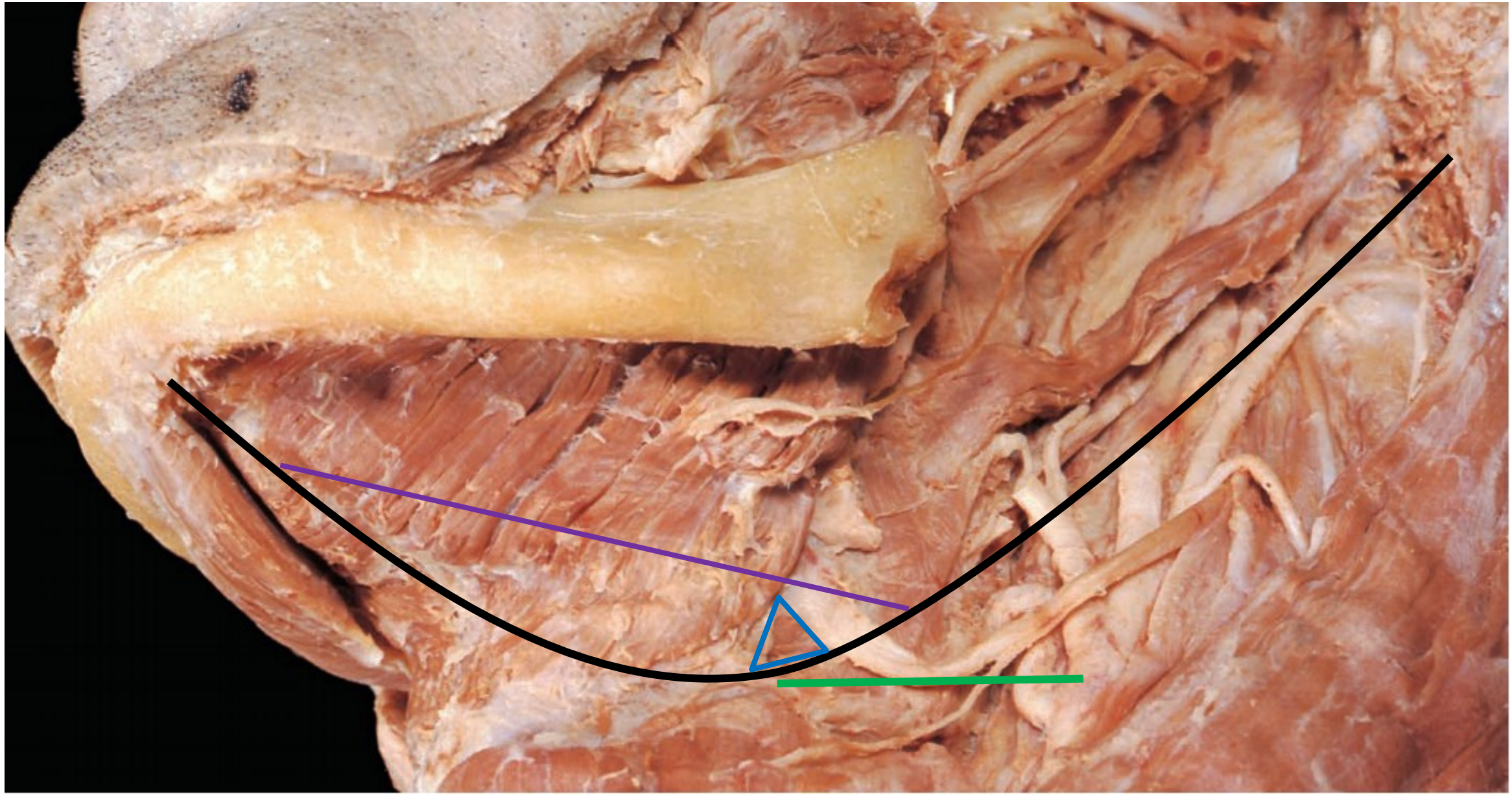
Podvaz arteria lingualis

1. Béclardův úhel
- kaudálně *cornu majus ossis hyoidei*
- kraniálně *venter posterior m. digastrici*

2. Pirogovův trojúhelník
- zadní okraj *m. mylohyoideus*
- vsunutá šlacha *m. digastricus*
- kmen *n. hypoglossus*

3. Lesserův trojúhelník
- kmen *n. hypoglossus*
- *venter anterior et posterior m. digstrici*





BEHCETOVA NEMOC

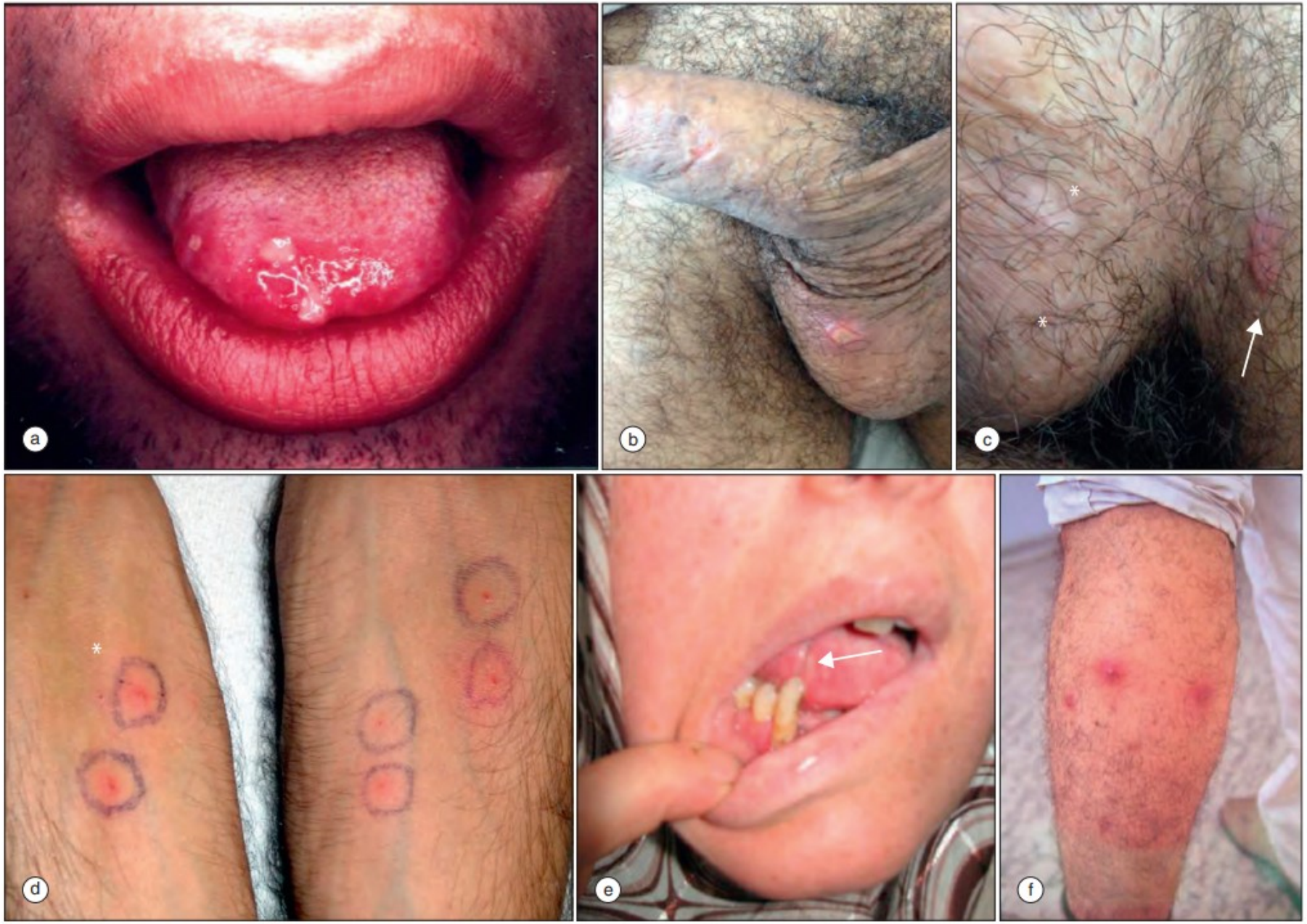
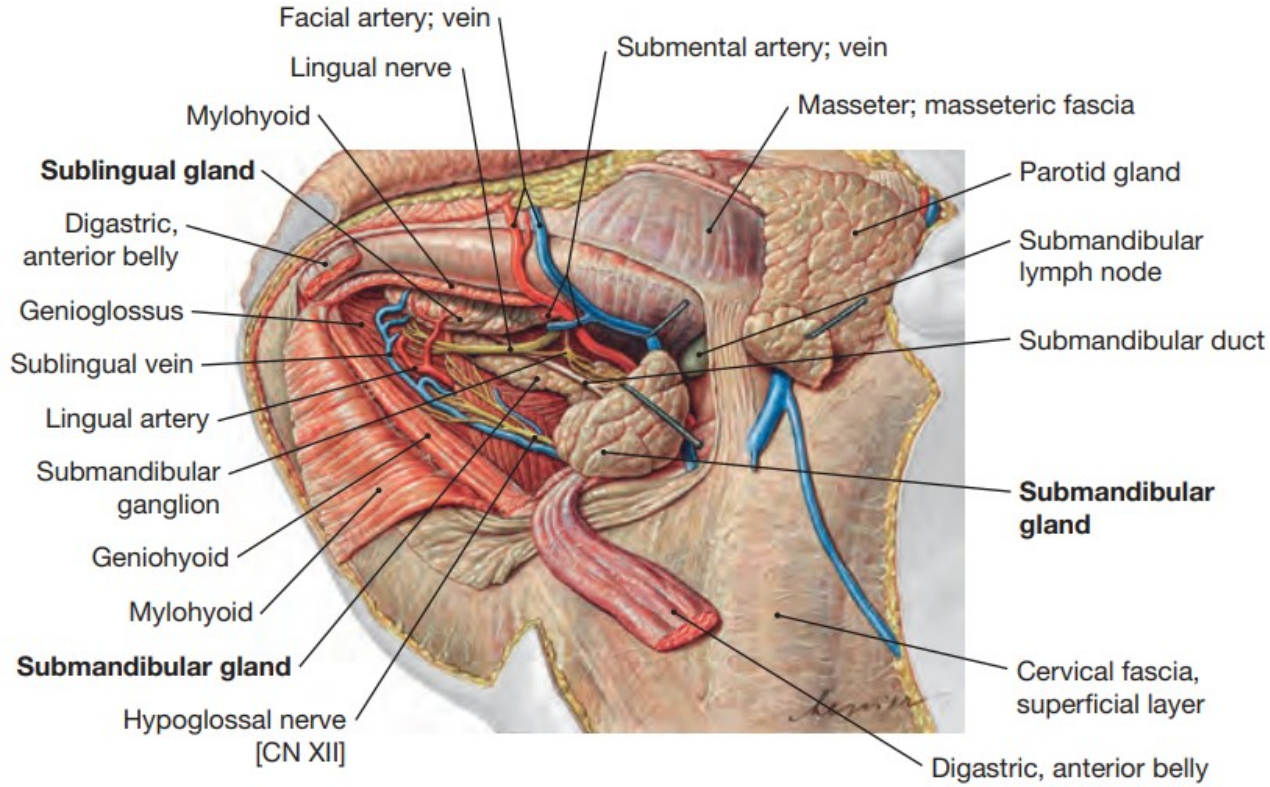
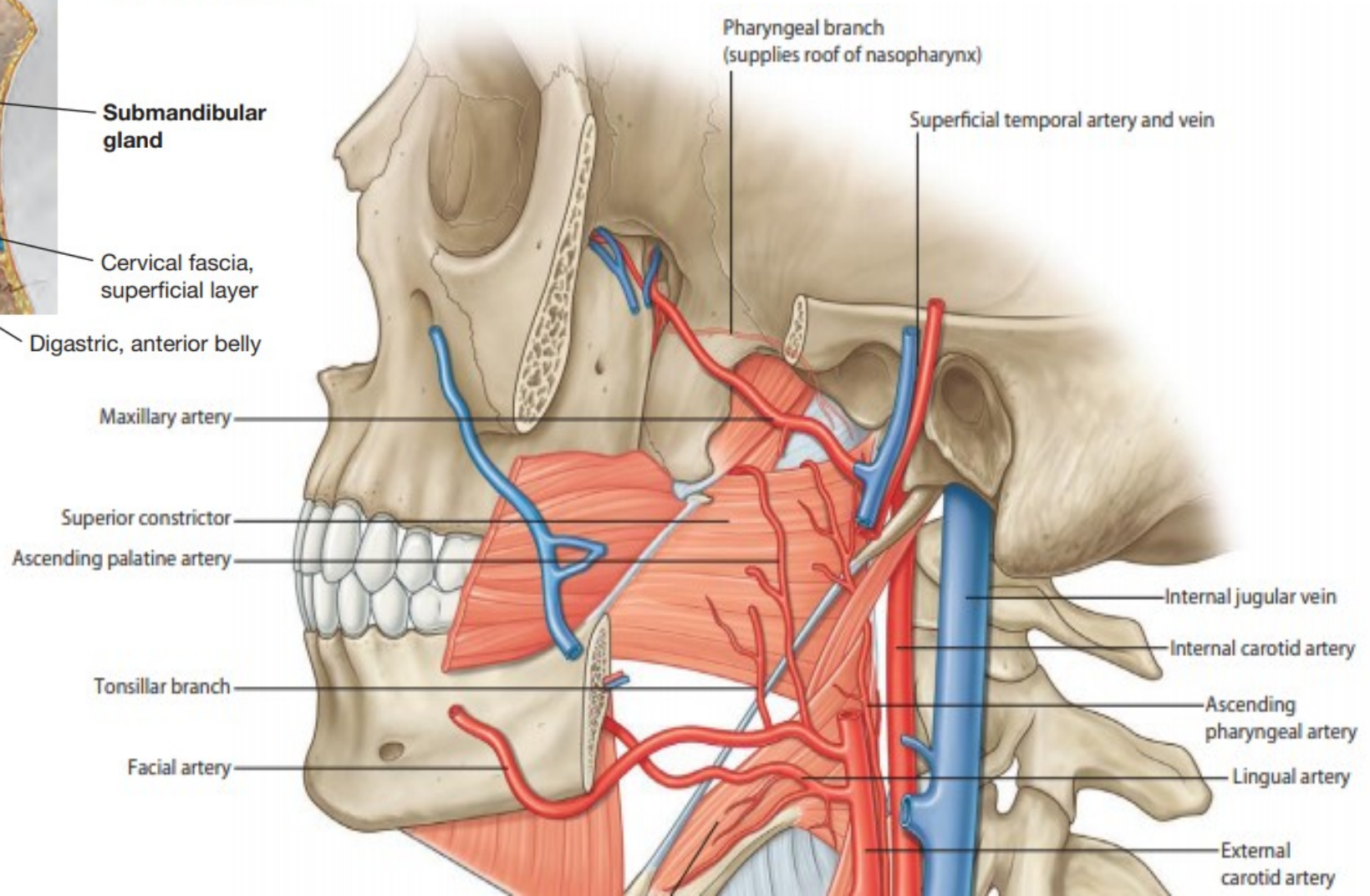


FIG. 167.1 Mucocutaneous manifestations of Behçet disease. **(a)** Oral aphthous ulcers. **(b)** Genital ulcers in the scrotum and skin of the shaft of the penis. **(c)** Ulcers in the groin *(arrow)* and scars of previous ulcers in the scrotum *(asterisks)*. **(d)** Skin pathergy response in the forearm as erythematous pustule *(asterisk)* or papule at the needle prick sites at 48 hours. **(e)** Pathergic tongue ulcer *(arrow)* induced by dental trauma. **(f)** Papulopustular lesions in the calf.

ARTERIA FACIALIS

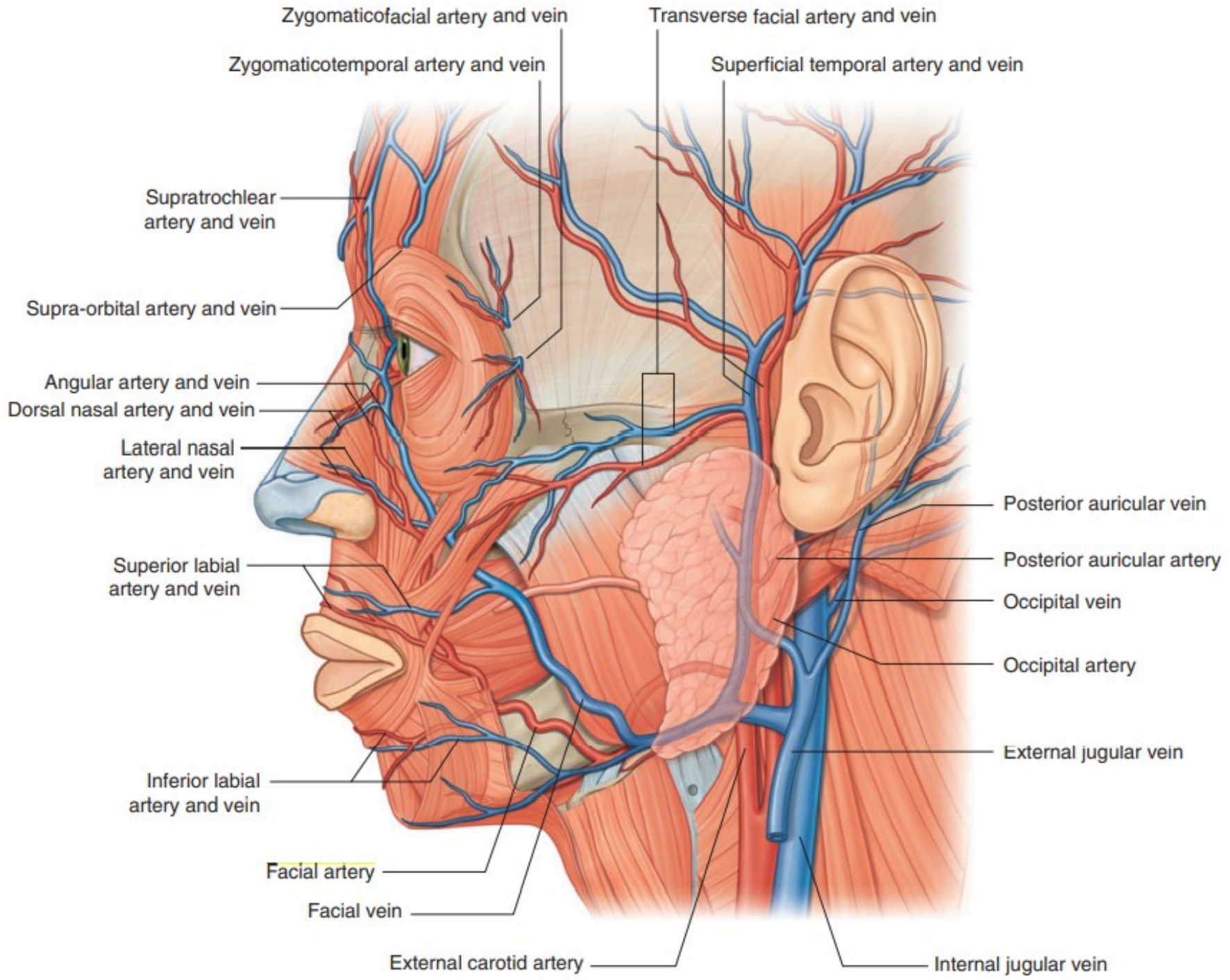


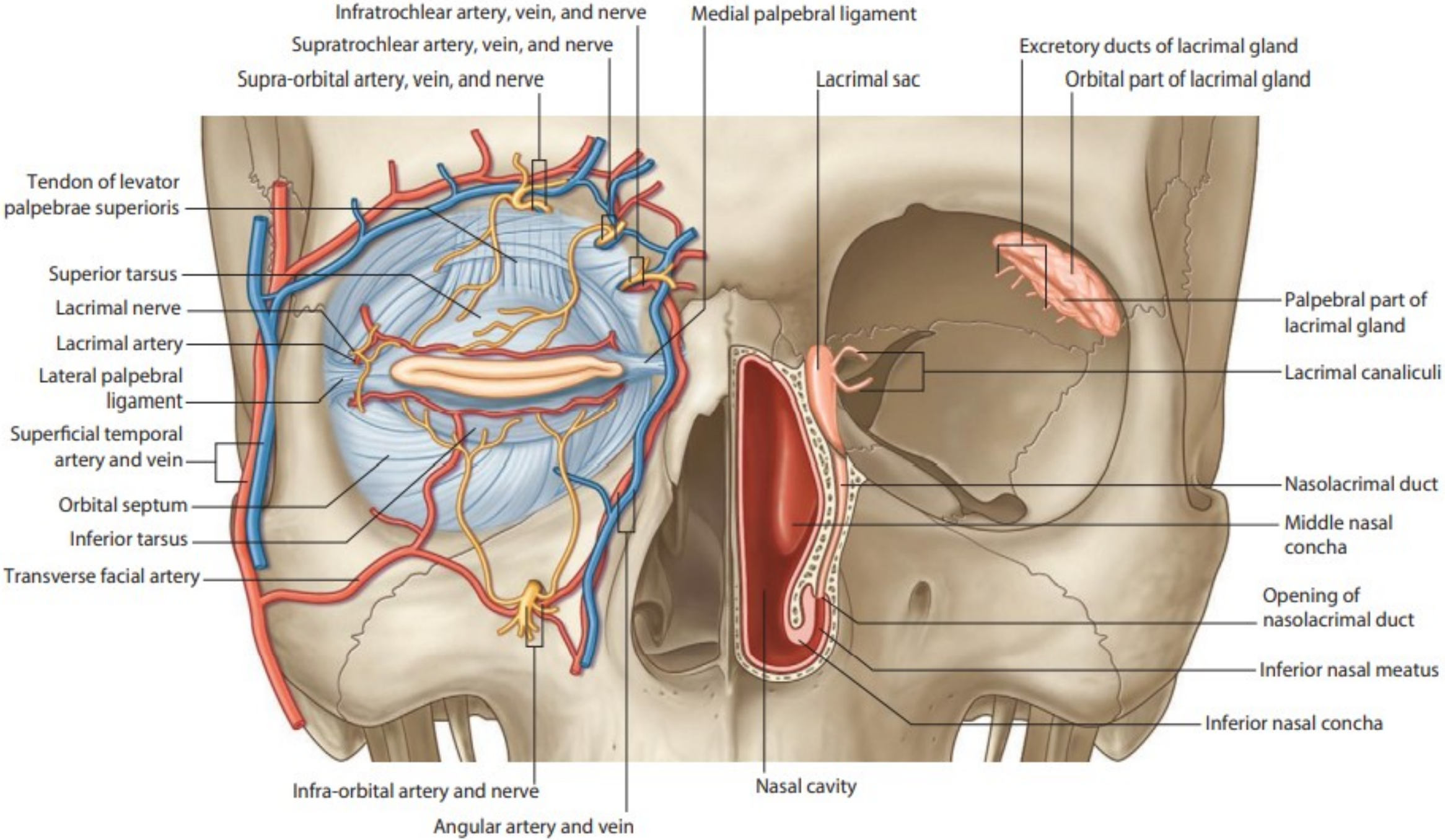


- *a. palatina ascendens*
- *a. submentalis*
- *rr. glandulares*
- *a. labialis superior et inferior*
- *r. lateralis nasi*
- *a. angularis*

ARTERIA FACIALIS

- *a. palatina ascendens*
- *a. submentalis*
- *rr. glandulares*
- *a. labialis superior et inferior*
- *r. lateralis nasi*
- *a. angularis*



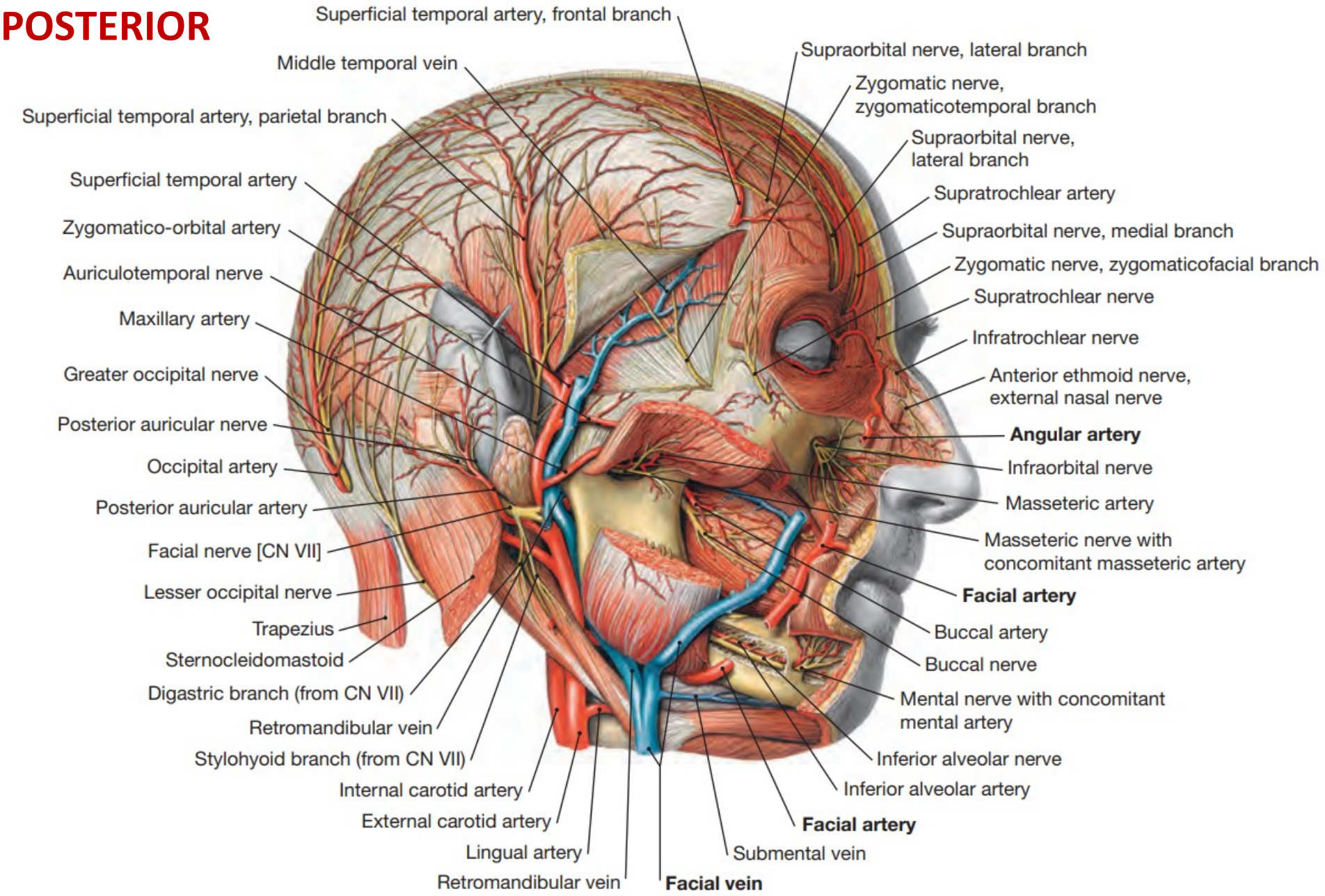

Infratrochlear artery, vein, and nerve
Supratrochlear artery, vein, and nerve
Supra-orbital artery, vein, and nerve
Medial palpebral ligament
Lacrimal sac
Excretory ducts of lacrimal gland
Orbital part of lacrimal gland
Tendon of levator palpebrae superioris
Superior tarsus
Lacrimal nerve
Lacrimal artery
Lateral palpebral ligament
Superficial temporal artery and vein
Orbital septum
Inferior tarsus
Transverse facial artery
Palpebral part of lacrimal gland
Lacrimal canaliculi
Nasolacrimal duct
Middle nasal concha
Opening of nasolacrimal duct
Inferior nasal meatus
Inferior nasal concha
Infra-orbital artery and nerve
Angular artery and vein
Nasal cavity

ARTERIA AURICULARIS POSTERIOR

- ***rr. musculares***
- ***rr. glandulares***
- ***r. auricularis***
- ***a. stylomastoidea***
  - *a. tympanica posterior*
  - *rr. mastoidei*
  - *r. stapedialis*
- ***r. occipitalis***

ARTERIA OCCIPITALIS

- ***rr. sternocleidomastoidei***
- ***r. auricularis***
- ***r. mastoideus***
- ***rr. occipitales***



ARTERIA PHARYNGEA ASCENDENS

- *rr. pharyngei*
- *a. meningea posterior*
- *a. tympanica inferior*

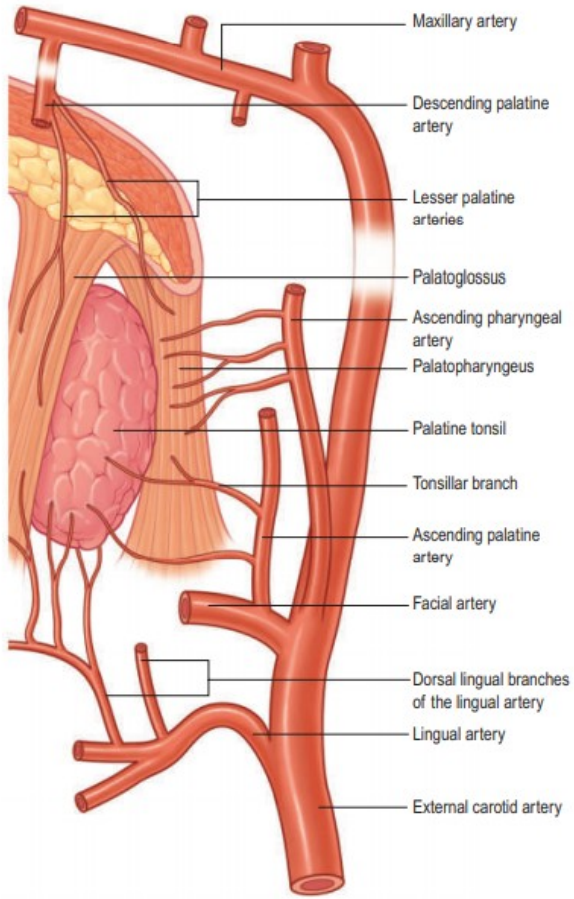
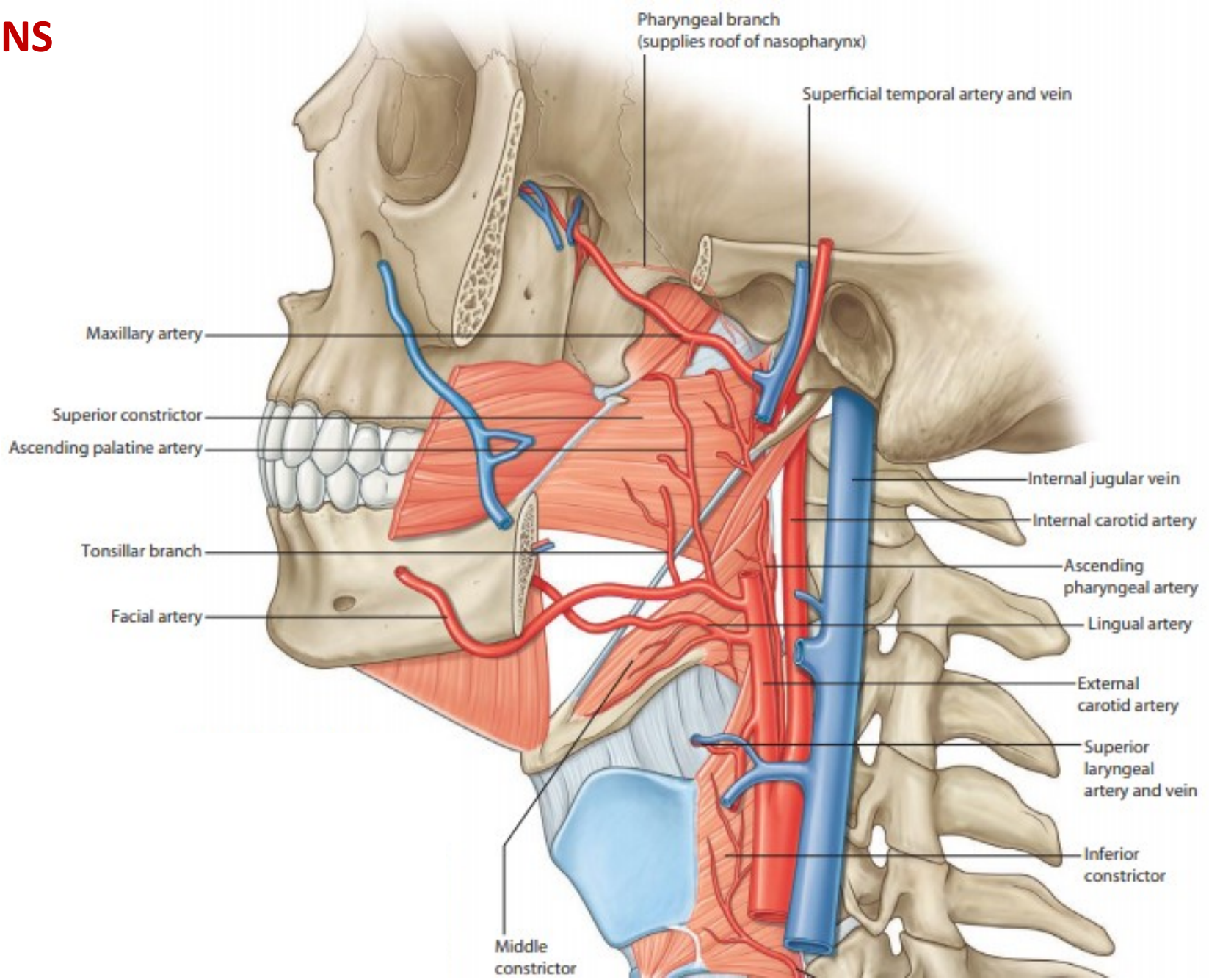


Fig. 34.7 The arterial supply to the palatine tonsil.



ARTERIA PHARYNGEA ASCENDENS

- malá tepenná větévka nejčastěji z ACE
- prochází v štěrbině mezi ACI, pharyngem a *m. longus capitis*
- dělí se na pharyngeální a neuromeningeální větev

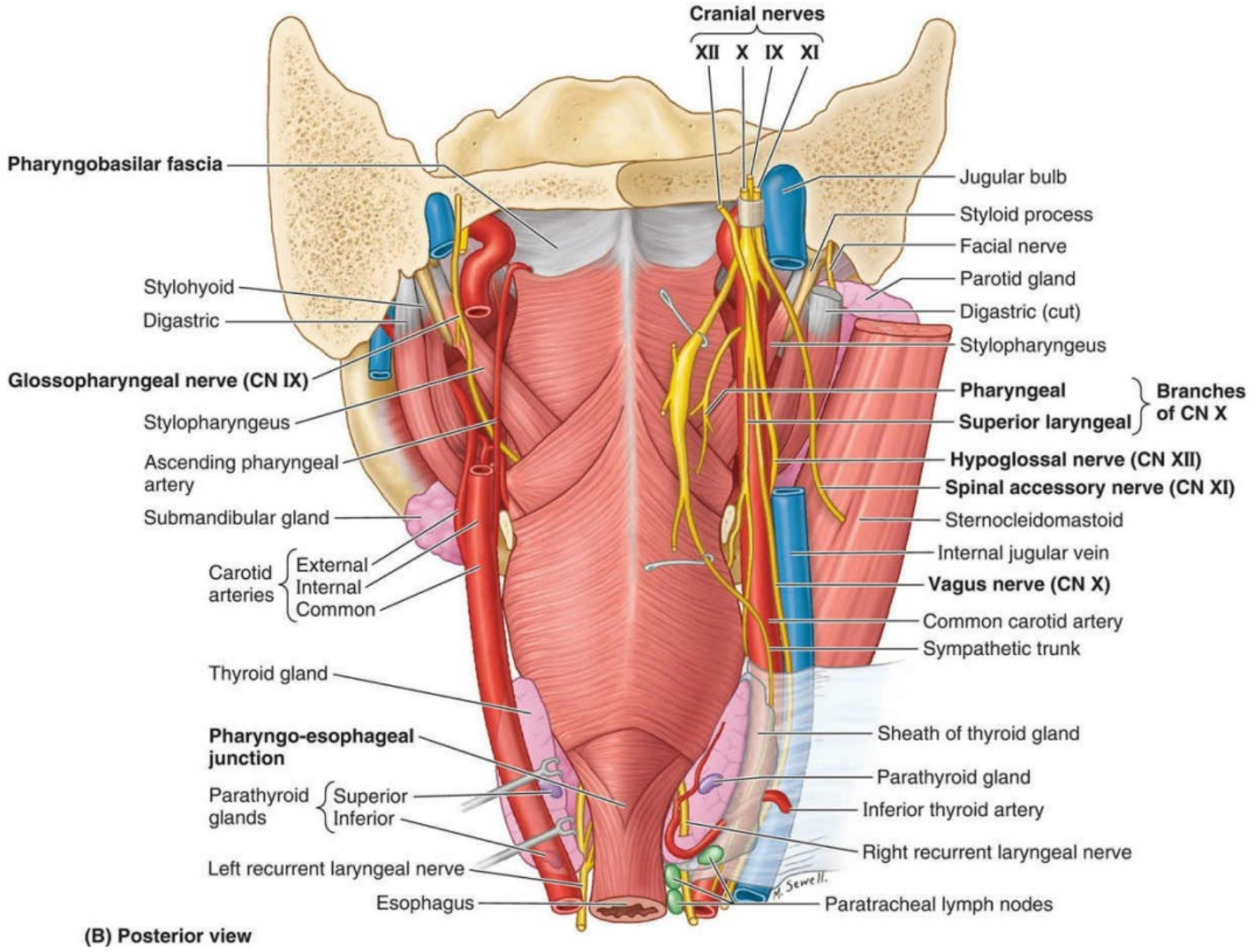
A. Pharyngeální větev (přední)

- zásobuje pharynx, *tonsilla palatina*, *palatum molle*, Eustachovu trubicu

B. Neuromeningeální větev (zadní)

- zásobuje prevertebrální svaly, dura mater, hlavové nervy VI, IX-XII, kořene C1-C3, *dens axis* a obratle C1-C3, *ganglion cervicale superius*

Odstup APA:
Arteria carotis externa (70%)
Arteria occipitalis (20%)
Arteria carotis interna (8%)
Arteria facialis (2%)



1. Pharyngeální větev (přední)

Arteria pharyngea inferior
- *hypopharynx*

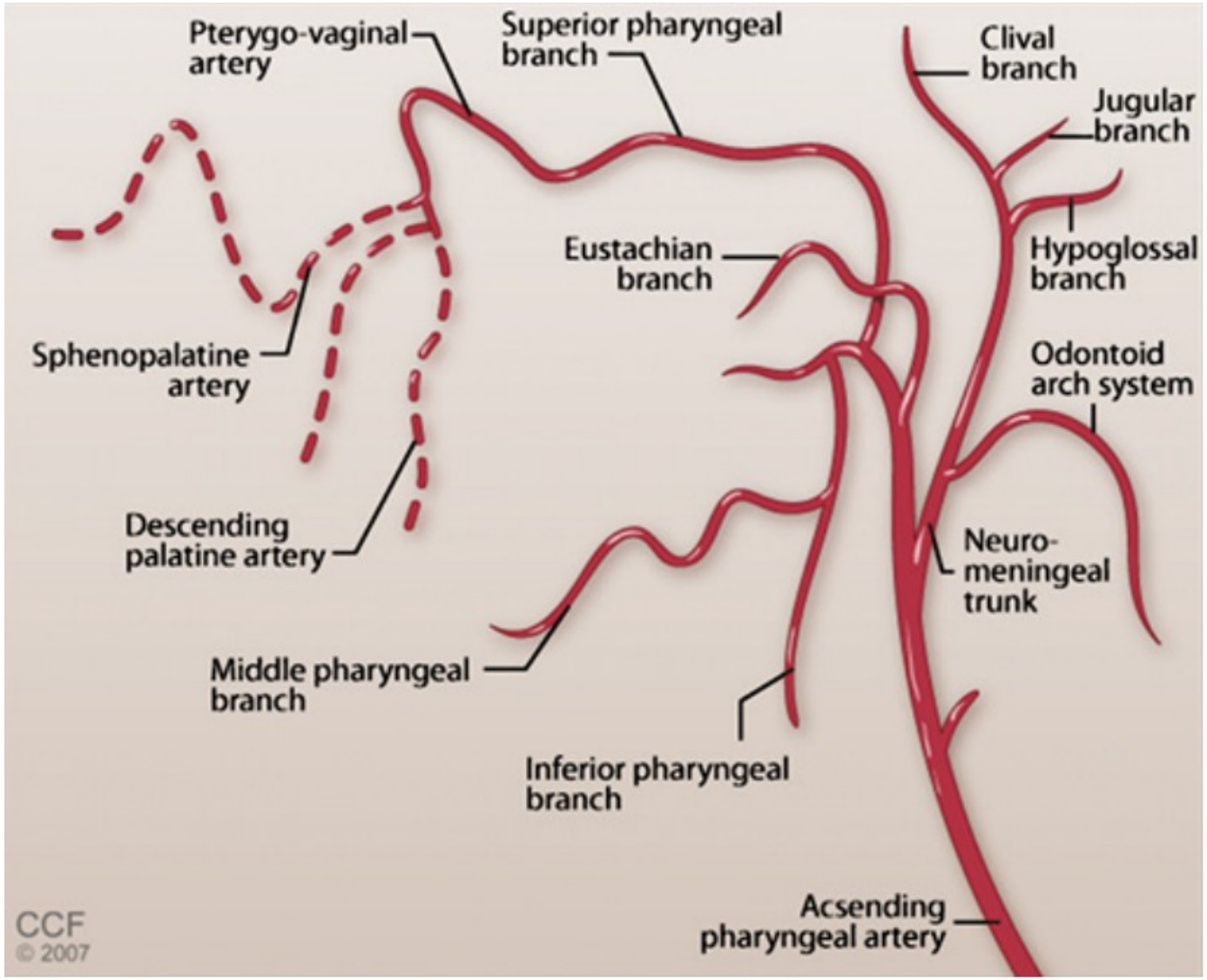
Arteria pharyngea media
- *oropharynx*, *palatum molle*

Arteria pharyngea superior
- *nasopharynx*
- anastomózy s *arteria reccurens* z *ILT* kolem *foramen lacerum*
- anastomózy s větvemi *arteria maxillaris*

Rami palatini
- *palatum molle*, *tonsilla palatina*, Eustachova trubice
- anastomózy s *arteria palatina descendens*

Rami prevertebrales
- hluboké šíjové svaly, *truncus sympaticus*, n. X, lymfatické uzliny
- anastomózy s *arteria cervicalis ascendens*

Arteria tympanica inferior



2. Neuromeningeální větev (zadní)

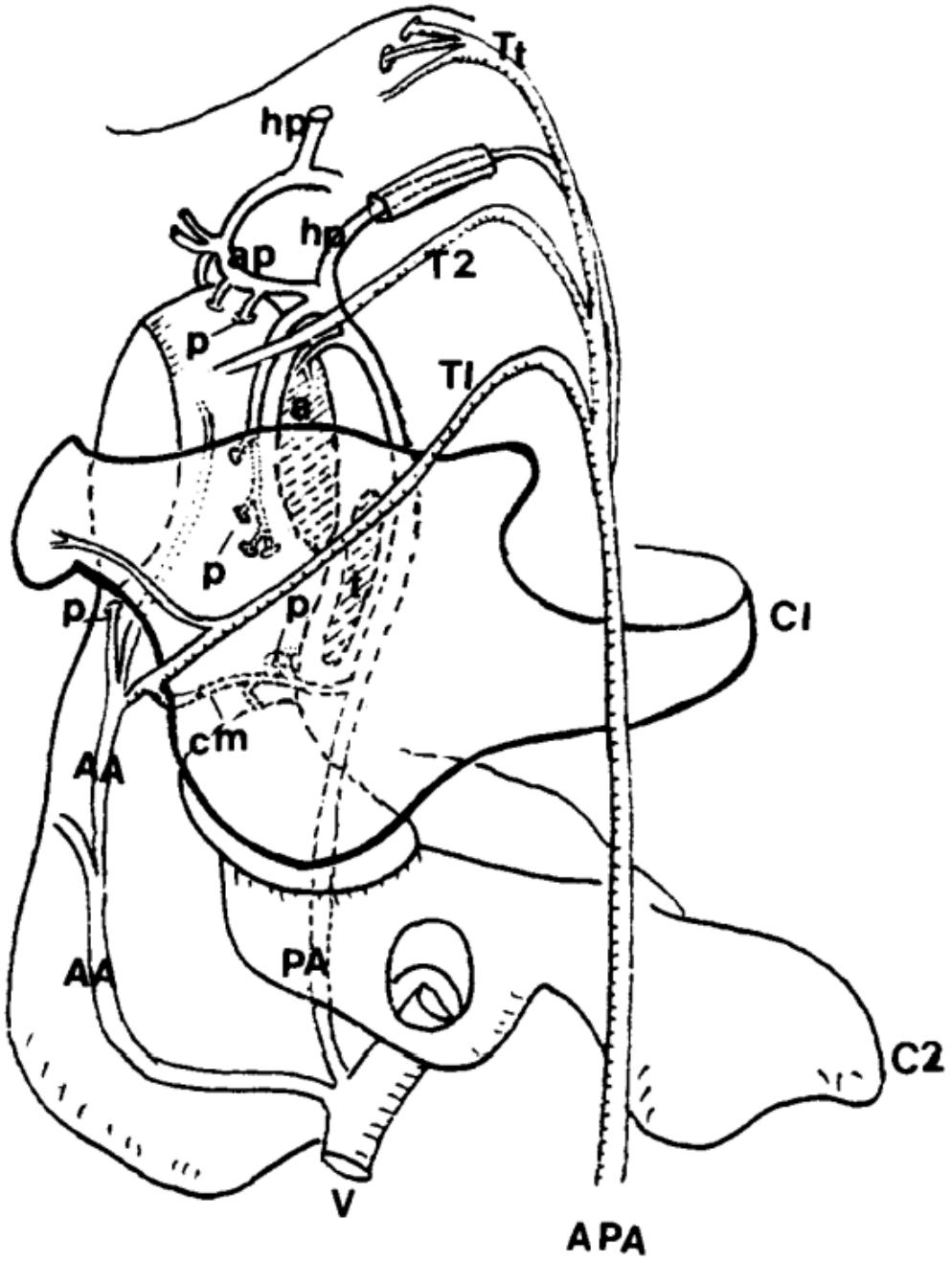
Arteriae musculospinales
- paraspinální svaly, *ganglion cervicale superius*, n. XI
- anastomózy s *arteria cervicalis ascendens*

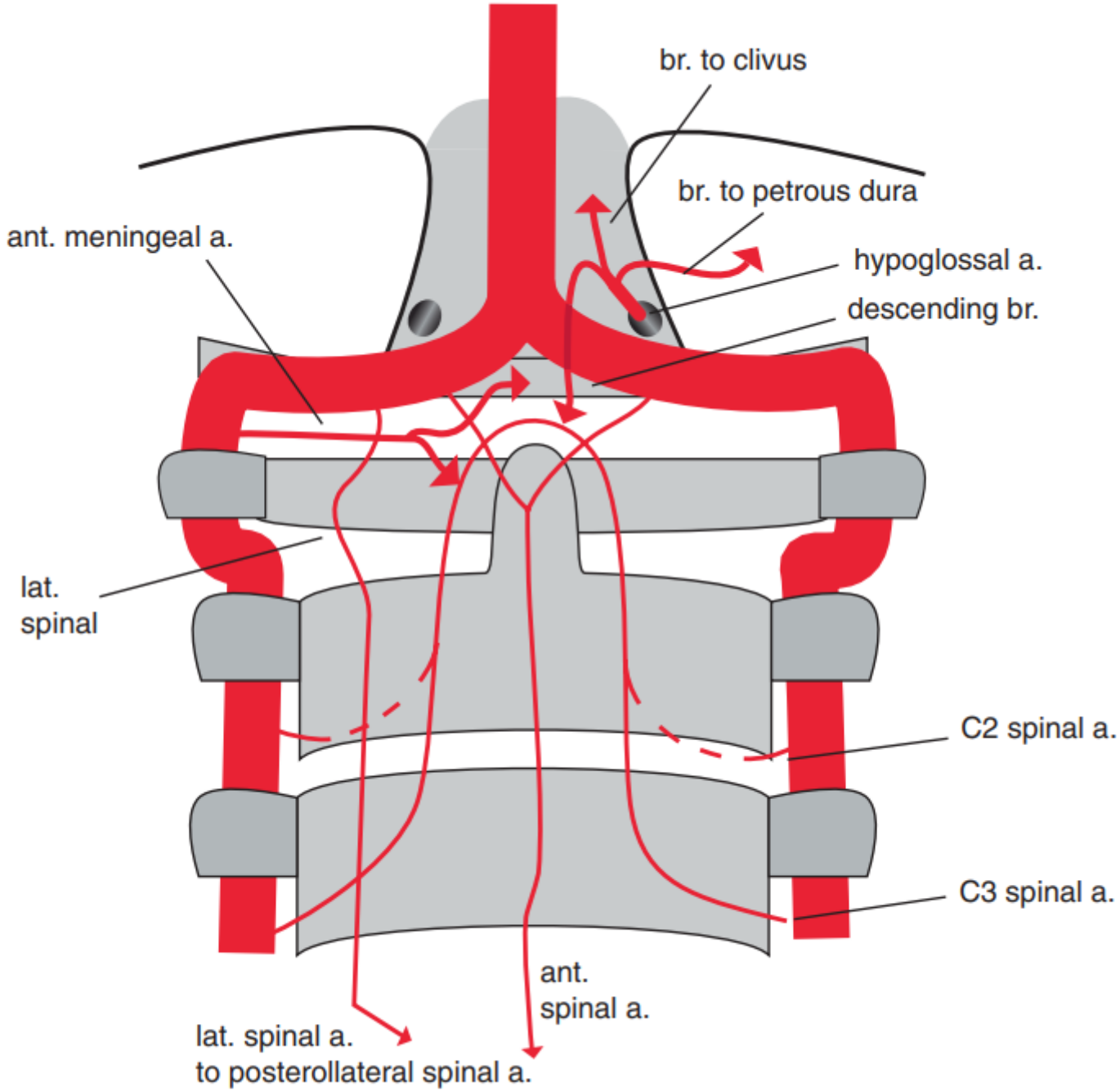
Arteria horizontalis posterior

Arteria horizontalis anterior superior et inferior

Arteria hypoglossalis
- *rr. clivi*
- *rr. meningeales*
- *rr. descendentes* (*aa. prevertebrales*)

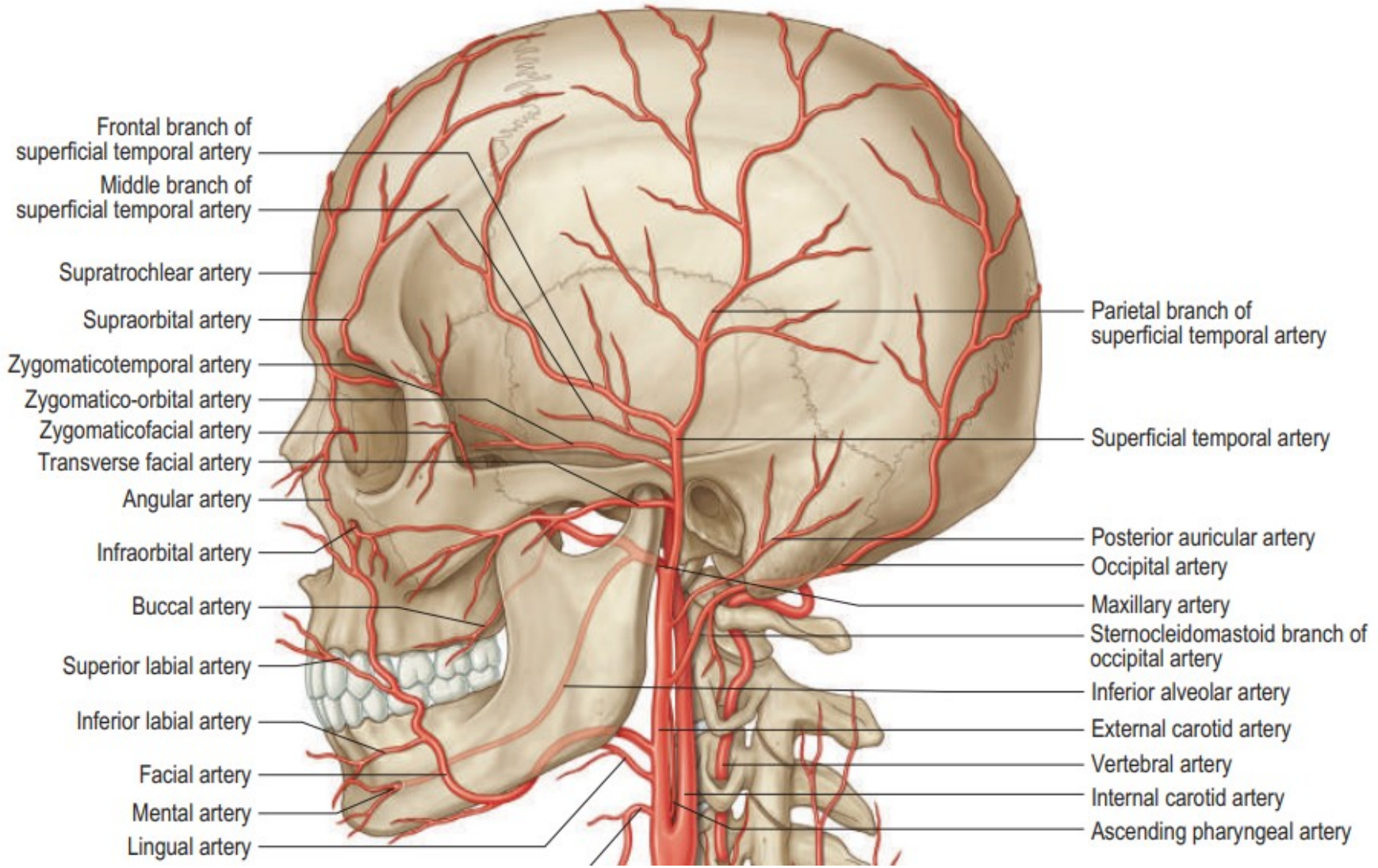
Arteria jugularis
- n. IX, n. X, n. XI




br. to clivus
br. to petrous dura
ant. meningeal a.
hypoglossal a.
descending br.
lat.
spinal
C2 spinal a.
C3 spinal a.
ant.
spinal a.
lat. spinal a.
to posterollateral spinal a.

ARTERIA TEMPORALIS SUPERFICIALIS

- *rr. parotidei*
- *a. transversa faciei*
- *rr. auriculares anteriores*
- *a. zygomaticoorbitalis*
- *a. temporalis media*
- *r. frontalis*
- *r. parietalis*



TEMPORÁLNÍ ARTERITIS

Fig. 4.**28** Prominent temporal artery in arteritis temporalis (giant-cell arteritis, arteritis temporalis Horton).

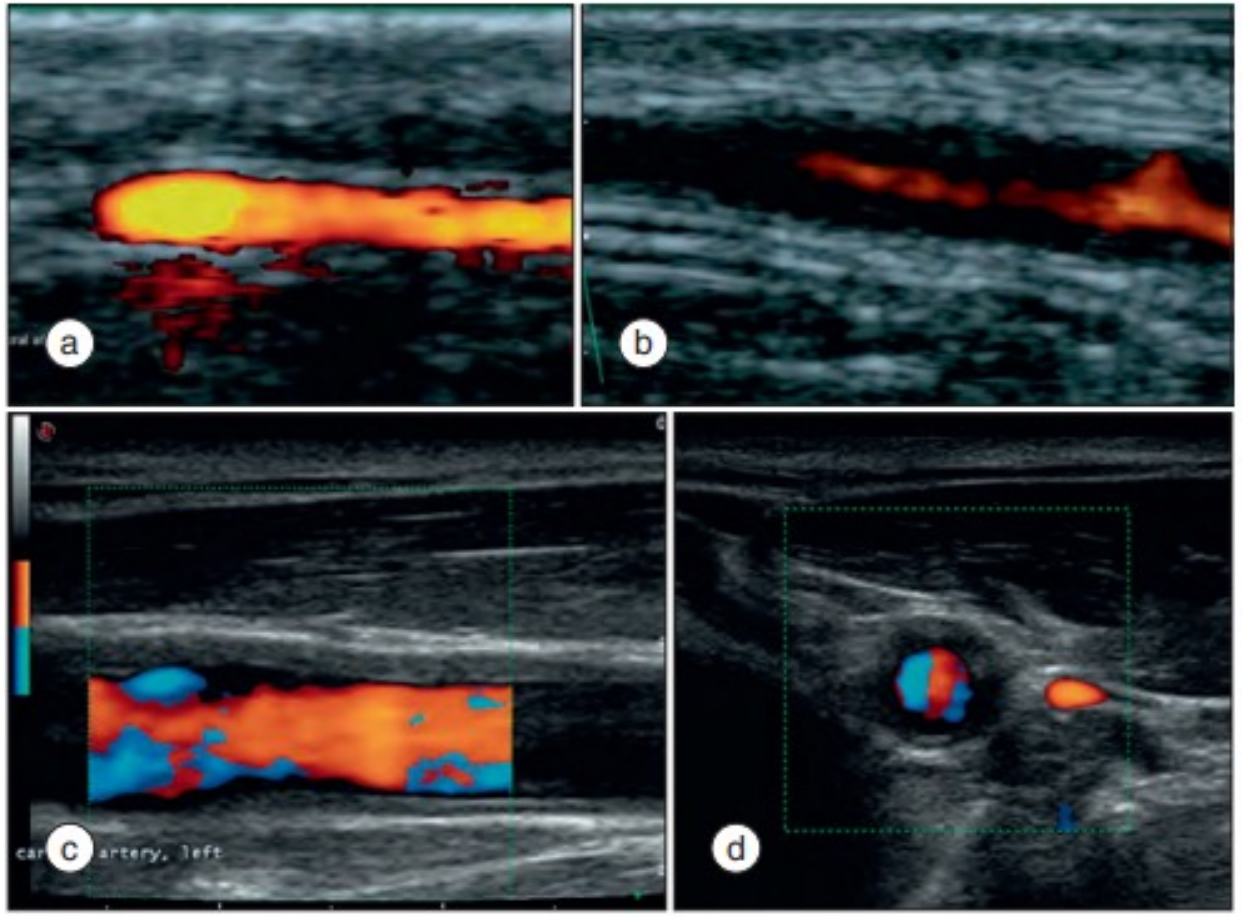


FIG. 48.12 Temporal arteritis and large-vessel giant cell arteritis. **(a)** Normal temporal artery after temporal artery biopsy. The artery lumen is patent with no stenosis, and the vessel wall is hyperechoic and of normal thickness (confirmed on histologic analysis). **(b)** Temporal arteritis. The artery shows a narrowed lumen and thickened hypoechoic arterial wall. **(c)** Arteritis of the carotid artery. A skip lesion is seen on longitudinal view with hypoechoic arterial wall thickening. **(d)** Transverse view of the carotid artery showing the halo sign, a circumferential hypoechoic thickening of the arterial wall.

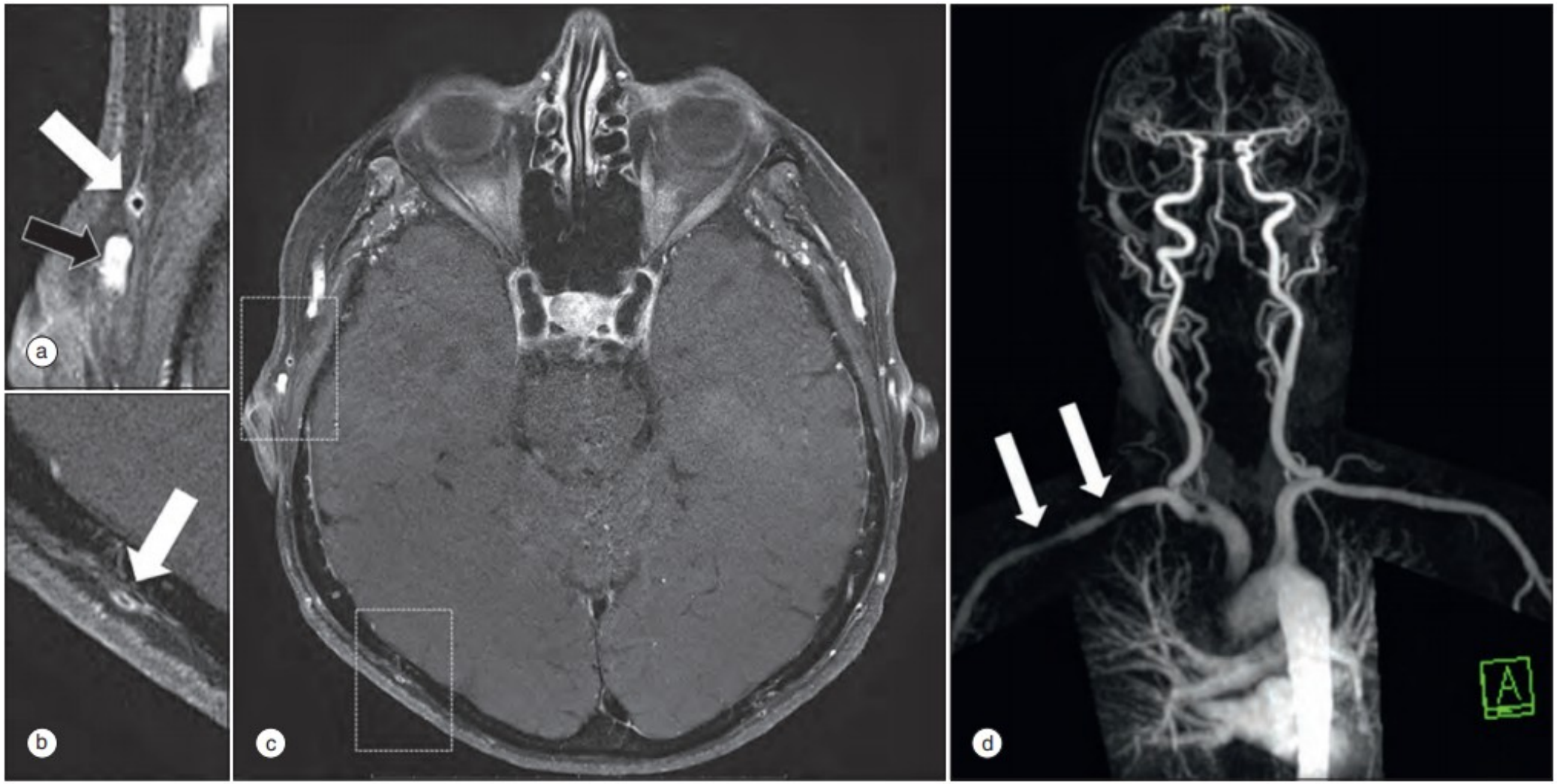


FIG. 166.5 High-resolution cranial magnetic resonance imaging of a 72-year-old woman with giant cell arteritis (GCA) readily reveals inflammatory mural thickening and contrast enhancement of the right superficial temporal artery (*white arrow* in enlargement in **a**) and right superficial occipital artery (*white arrow* in enlargement in **b**). Please note missing signal within the artery's lumen because of high arterial flow, the so-called flow void phenomenon. Because of its slower venous flow, the concomitant right superficial temporal vein (*dark arrow* in enlargement **a**) displays homogeneous contrast and no flow void phenomenon. By depicting the entire cranial circumference, the superficial temporal and occipital arteries and their branches can be assessed within one single scan **(c)**. **(d)** Magnetic resonance angiography of the supraaortic arteries in the same patient as in the previous image displays segmental inflammatory stenoses of the right subclavian artery. *(a–d, Courtesy of Dr. T.A. Bley, Universität Würzburg, Germany.)*

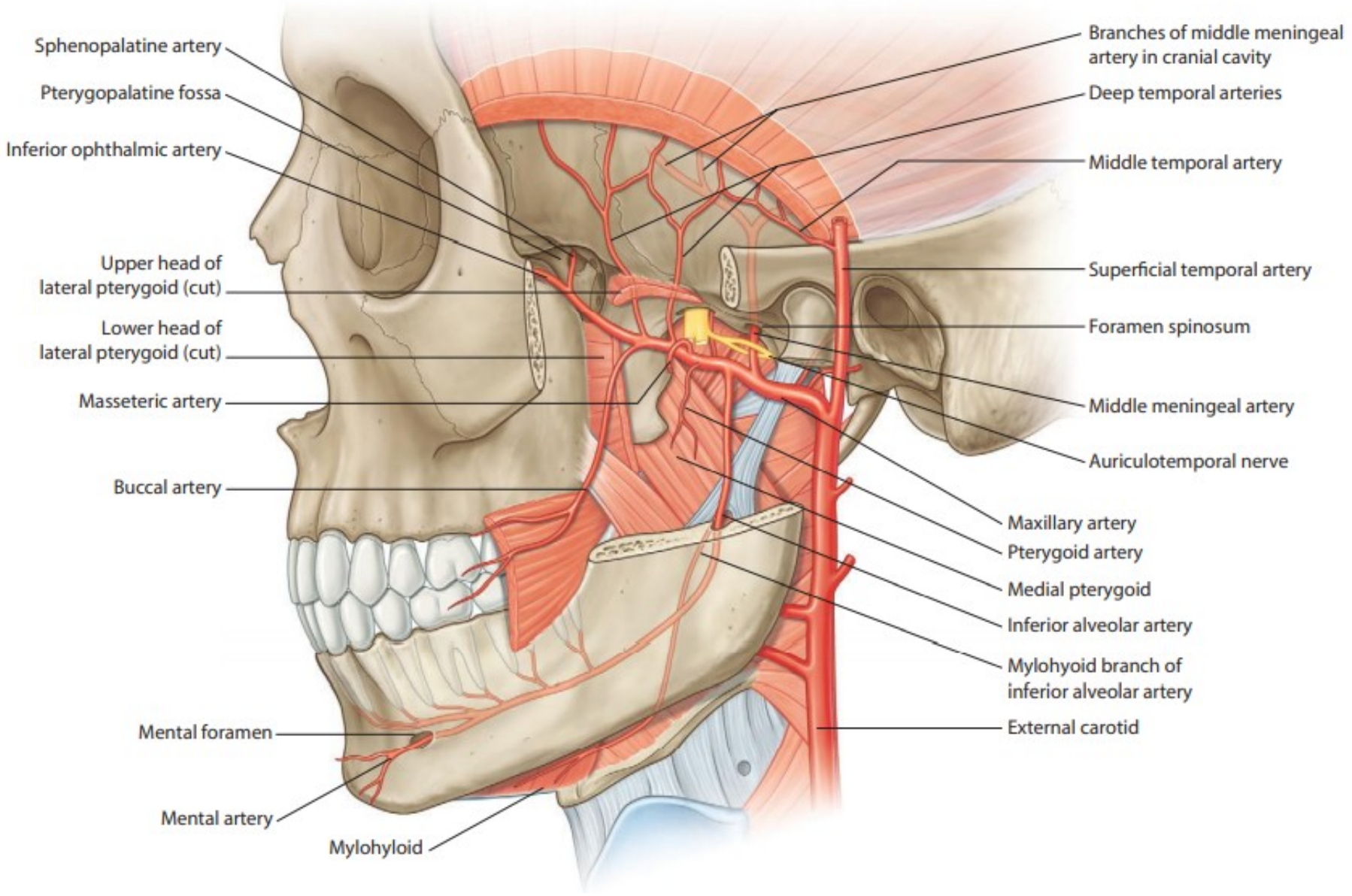
ARTERIA MAXILLARIS

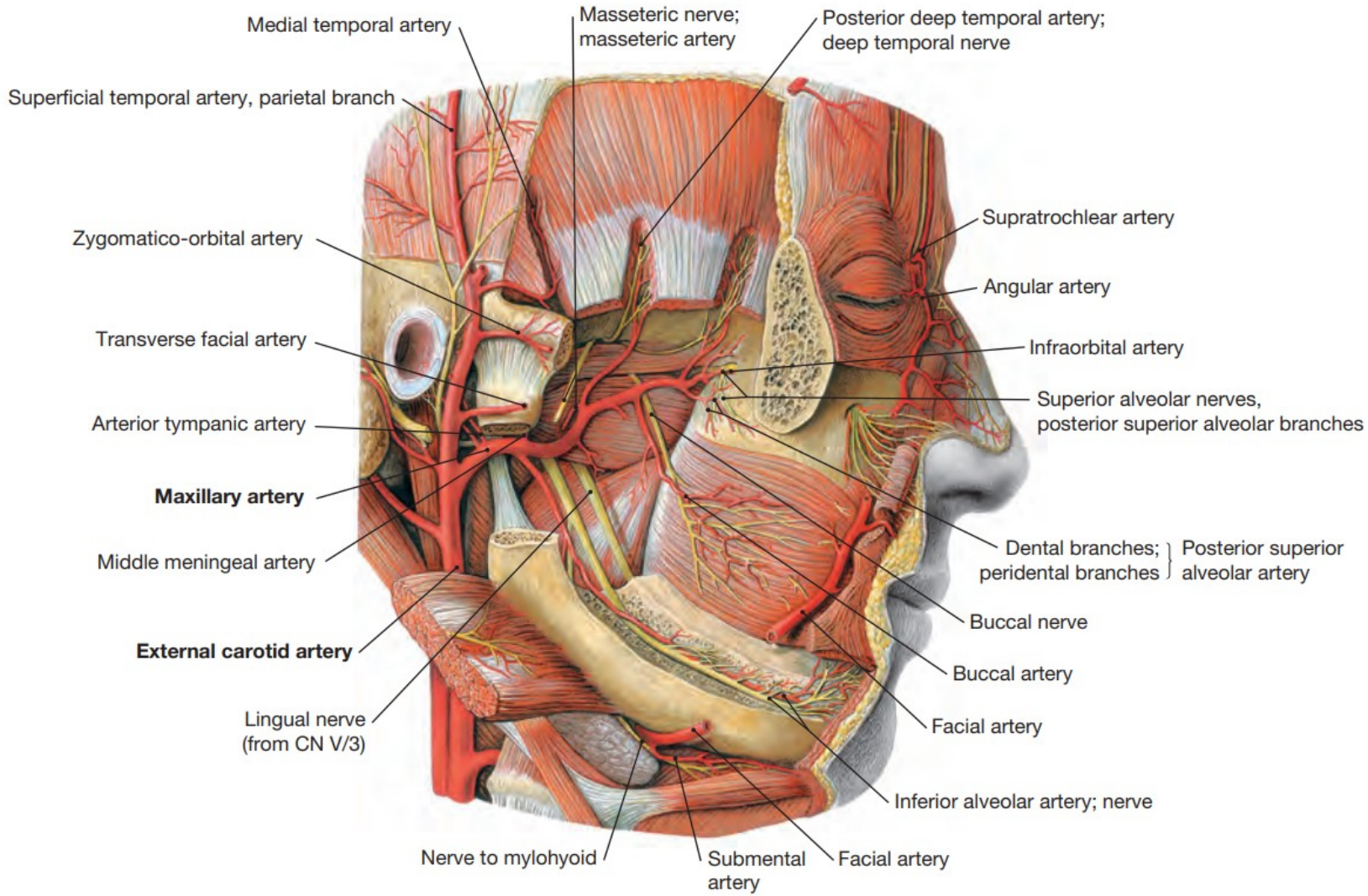
1. PARS MANDIBULARIS

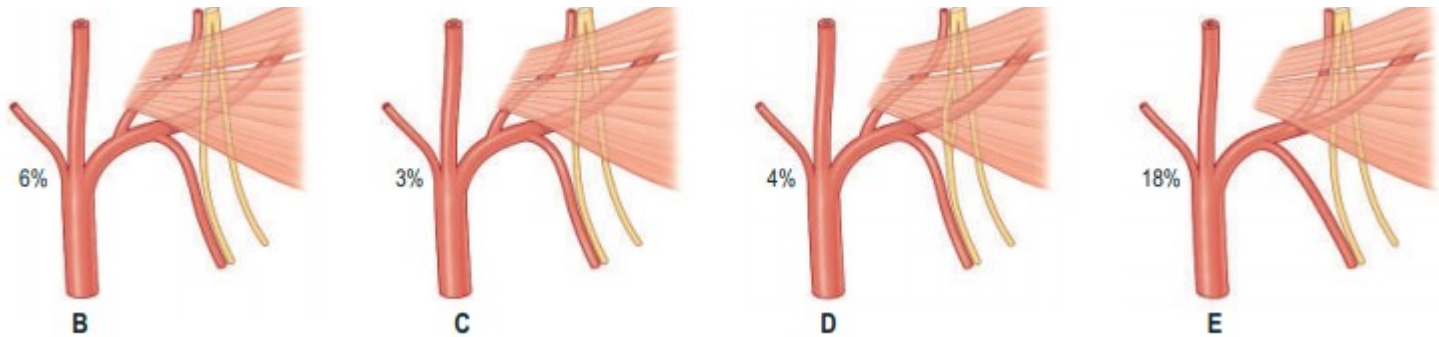
- ***a. auricularis profunda***
- ***a. tympanica anterior***
- ***a. meningea media***
  - *r. frontalis*
  - *r. parietalis*
  - *r. orbitalis*
  - *a. tympanica superior*
- ***a. alveolaris inferior***
  - *r. mylohyoideus*
  - *rr. dentales*
  - *rr. gingivales*
  - *a. mentalis*

2. PARS PTERYGOIDEA

- ***a. masseterica***
- ***rr. pterygoidei***
- ***aa. temporales profundae***
- ***a. buccalis***

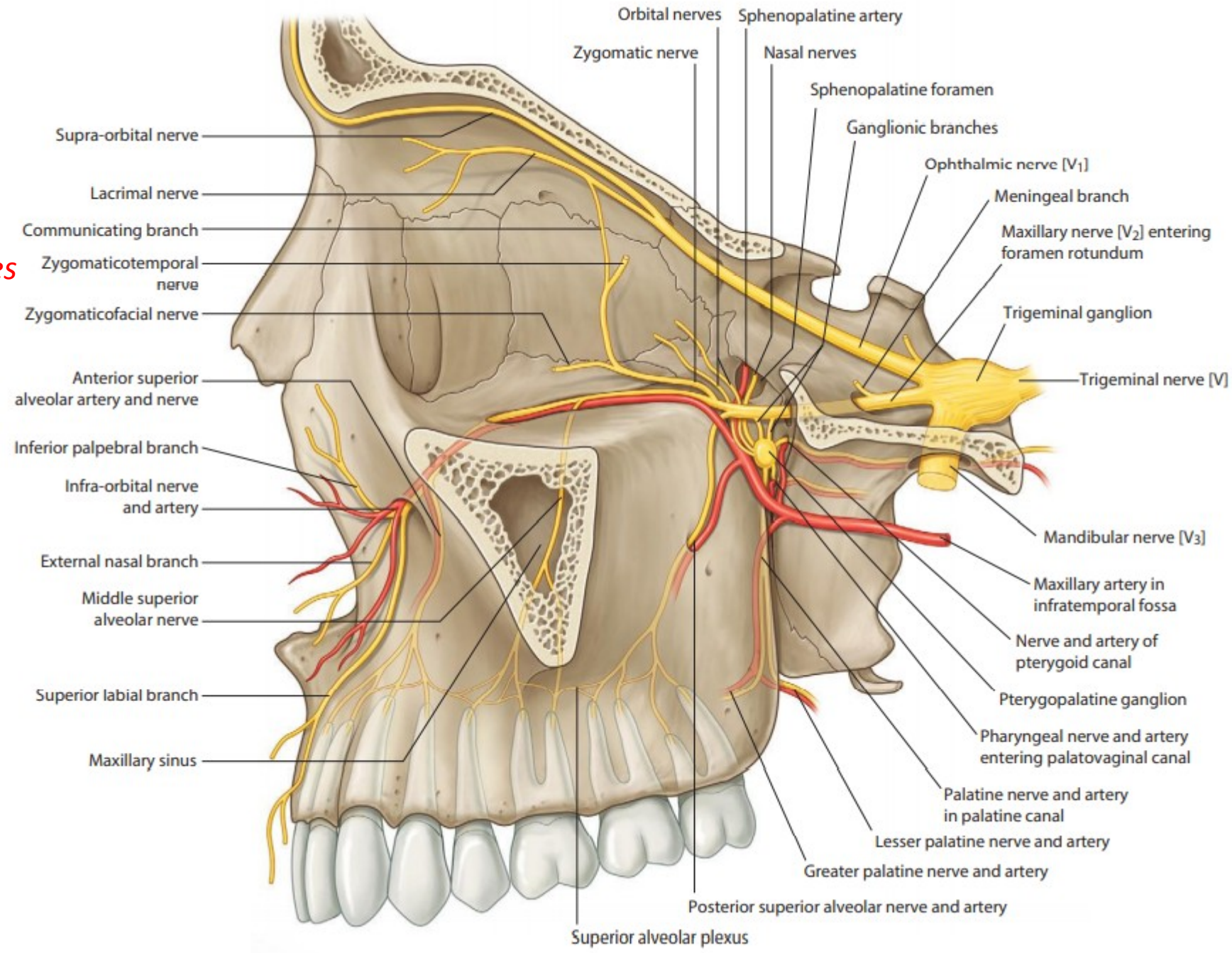


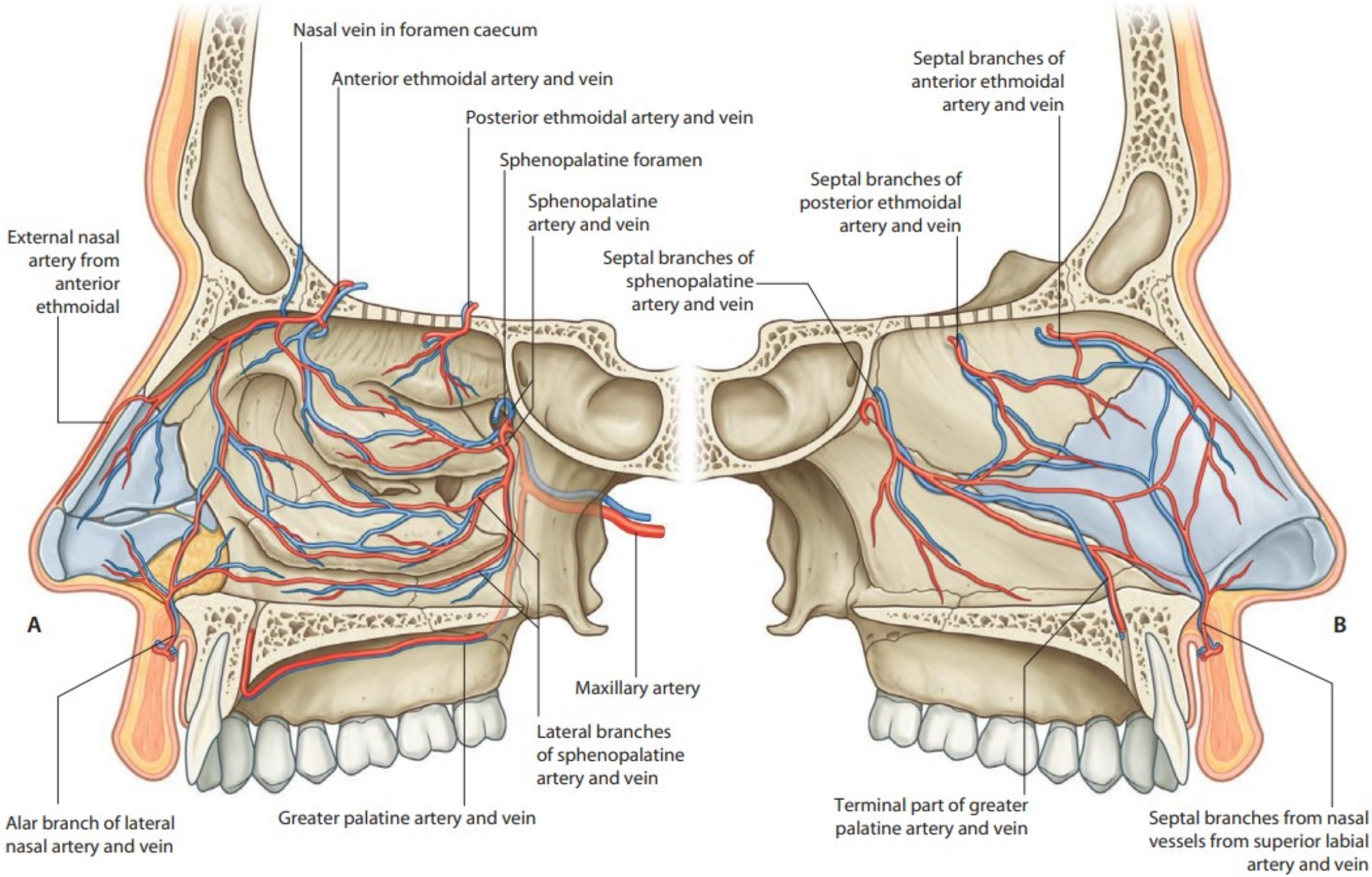

Medial temporal artery
Masseteric nerve; masseteric artery
Posterior deep temporal artery; deep temporal nerve
Superficial temporal artery, parietal branch
Zygomatico-orbital artery
Supratrochlear artery
Angular artery
Transverse facial artery
Infraorbital artery
Superior alveolar nerves, posterior superior alveolar branches
Arterior tympanic artery
Maxillary artery
Middle meningeal artery
Dental branches; peridental branches
Posterior superior alveolar artery
Buccal nerve
External carotid artery
Buccal artery
Facial artery
Lingual nerve (from CN V/3)
Inferior alveolar artery; nerve
Nerve to mylohyoid
Submental artery
Facial artery


6%
3%
4%
18%
B
C
D
E

3. PARS PTERYGOPALATINA

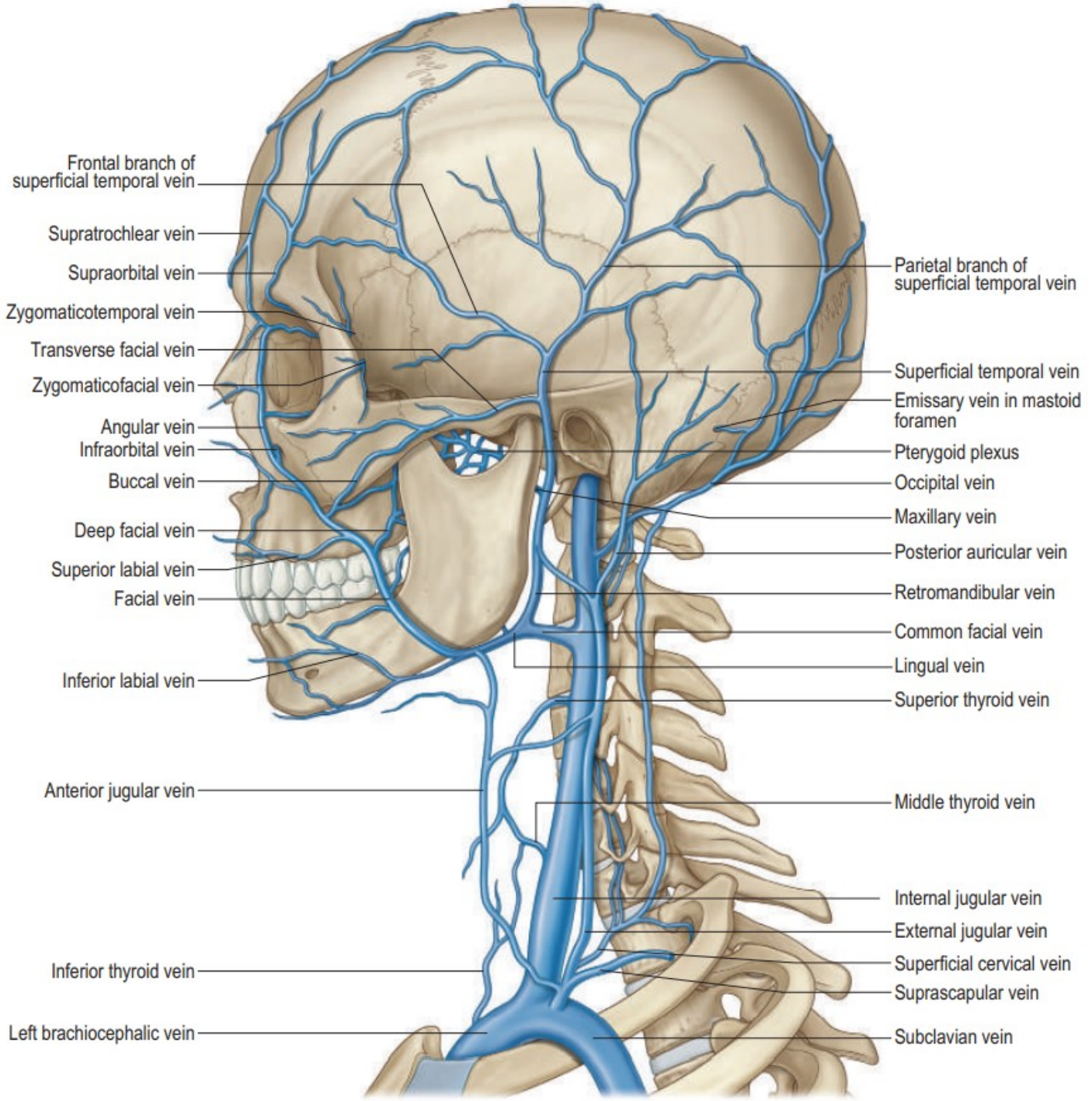
- ***a. alveolaris superior posterior***
  - *rr. dentales*
  - *rr. gingivales*
- ***a. infraorbitalis***
  - *aa. alveolares superiores anteriores*
    - *rr. dentales*
    - *rr. gingivales*
- ***a. canalis pterygoidei***
- ***a. palatina descendens***
  - *a. palatina major*
  - *aa. palatinae minores*
- ***a. sphenopalatina***
  - *aa. nasales posteriores laterales*
  - *rr. septales posteriores*
    - *r. nasopalatinus*

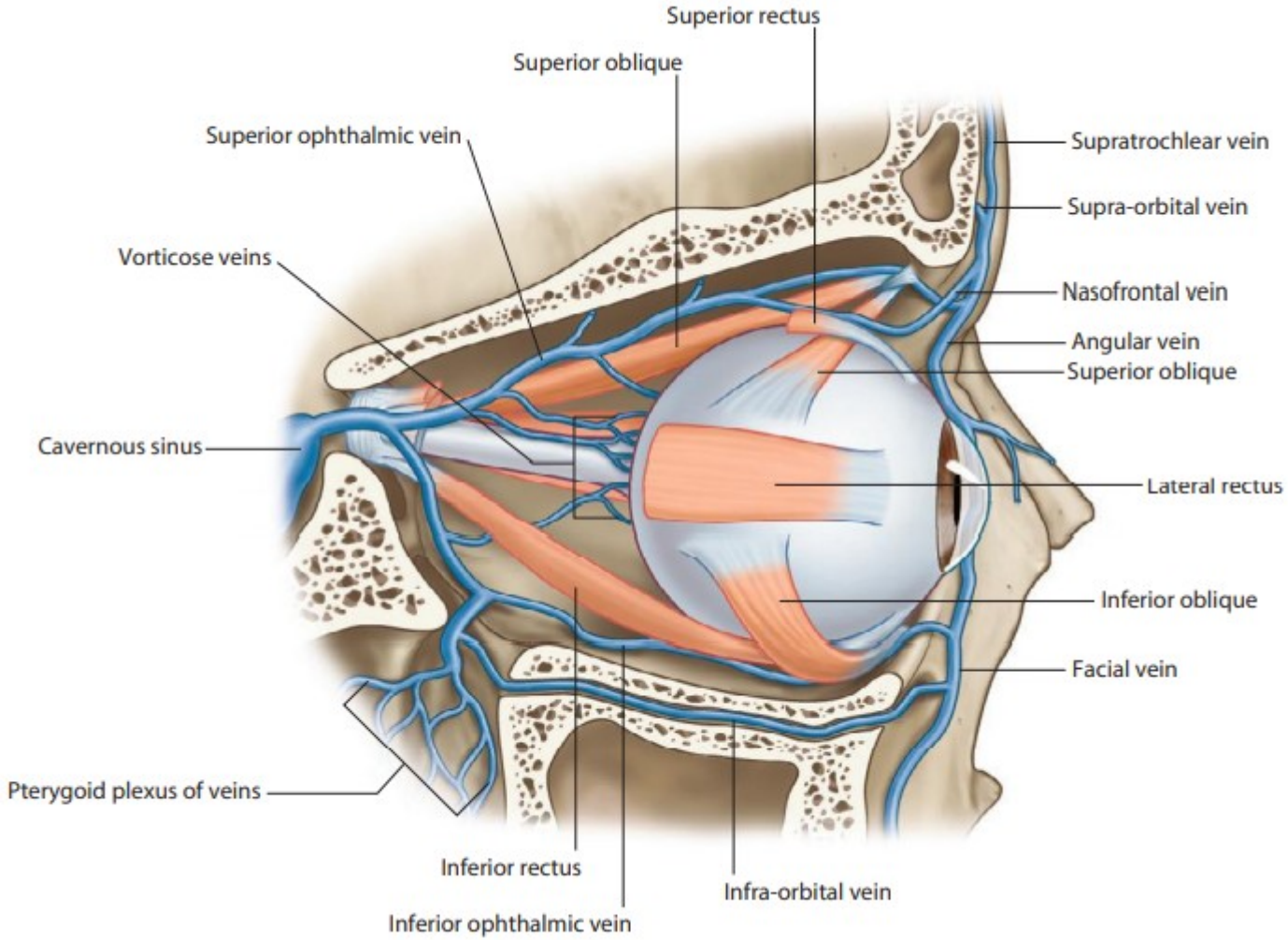


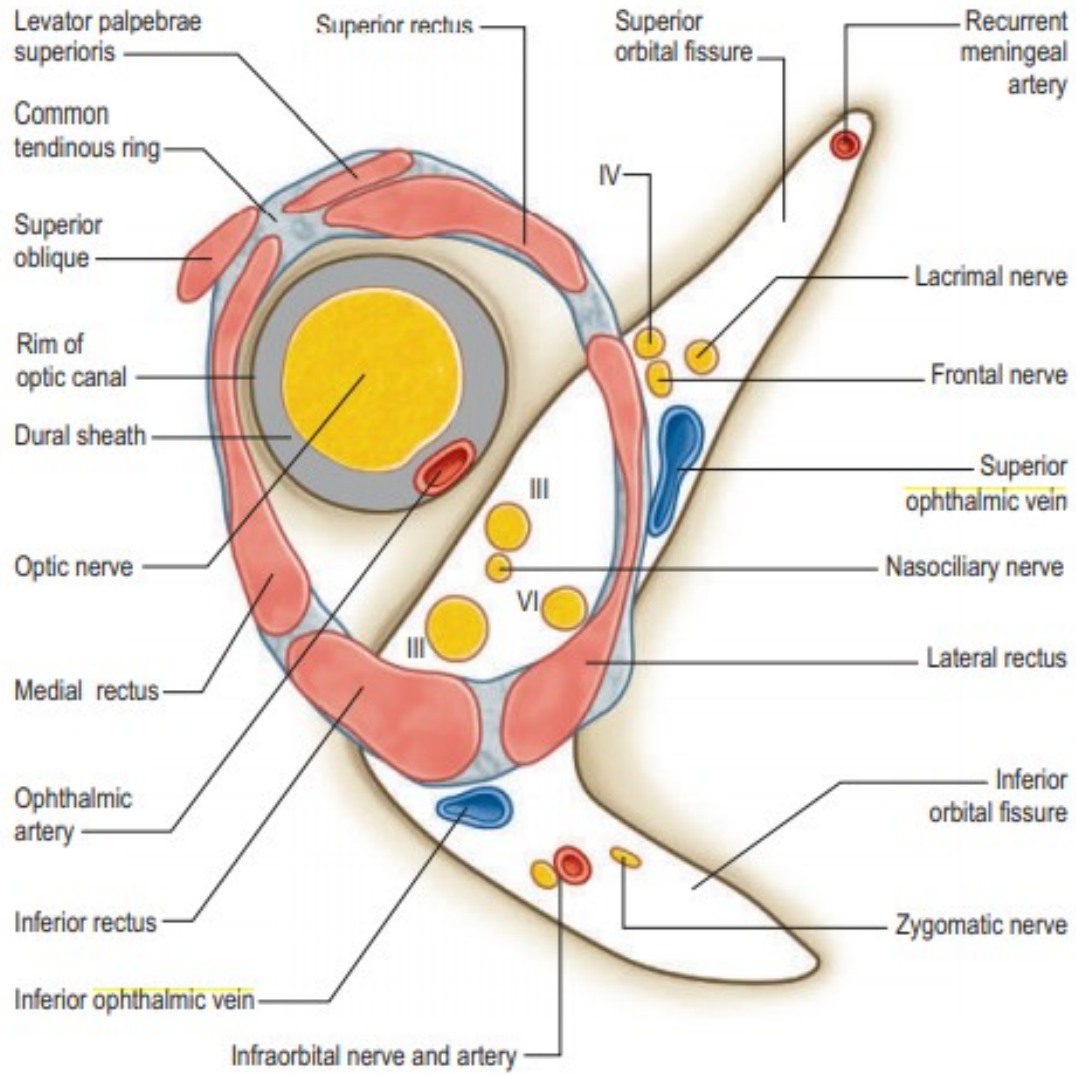

Nasal vein in foramen caecum
Anterior ethmoidal artery and vein
Posterior ethmoidal artery and vein
Sphenopalatine foramen
Sphenopalatine artery and vein
External nasal artery from anterior ethmoidal
Septal branches of sphenopalatine artery and vein
Septal branches of anterior ethmoidal artery and vein
Septal branches of posterior ethmoidal artery and vein
A
B
Maxillary artery
Lateral branches of sphenopalatine artery and vein
Alar branch of lateral nasal artery and vein
Greater palatine artery and vein
Terminal part of greater palatine artery and vein
Septal branches from nasal vessels from superior labial artery and vein

PŘEHLED ŽIL HLAVY A KRKU

1. *vv. cerebri*
2. *vv. meningeae*
3. *sinus durae matris*
4. *vv. diploicae*
5. *vv. labyrinthi*
6. ***vv. emissariae***
7. ***v. retromandibularis***
   - ***v. temporalis superficialis***
   - ***v. temporalis media***
   - ***v. transversa faciei***
   - ***vv. maxillares***
8. ***vv. ophthalmicae***
9. ***vv. pharyngeae***
10. ***v. facialis***
11. ***v. lingualis***
    - ***v. sublingualis***
    - ***v. comitans nervi hypoglossi***
12. *v. thyroidea superior*
13. *v. thyroidea media*
14. ***v. jugularis externa***




Superior rectus
Superior oblique
Superior ophthalmic vein
Supratrochlear vein
Supra-orbital vein
Vorticose veins
Nasofrontal vein
Angular vein
Superior oblique
Cavernous sinus
Lateral rectus
Inferior oblique
Facial vein
Pterygoid plexus of veins
Inferior rectus
Infra-orbital vein
Inferior ophthalmic vein


Levator palpebrae superioris
Superior rectus
Superior orbital fissure
Recurrent meningeal artery
Common tendinous ring
IV
Superior oblique
Lacrimal nerve
Rim of optic canal
Frontal nerve
Dural sheath
Superior ophthalmic vein
III
Optic nerve
Nasociliary nerve
VI
III
Medial rectus
Lateral rectus
Ophthalmic artery
Inferior orbital fissure
Inferior rectus
Zygomatic nerve
Inferior ophthalmic vein
Infraorbital nerve and artery

OKLUZE V. CENTRALIS RETINEAE

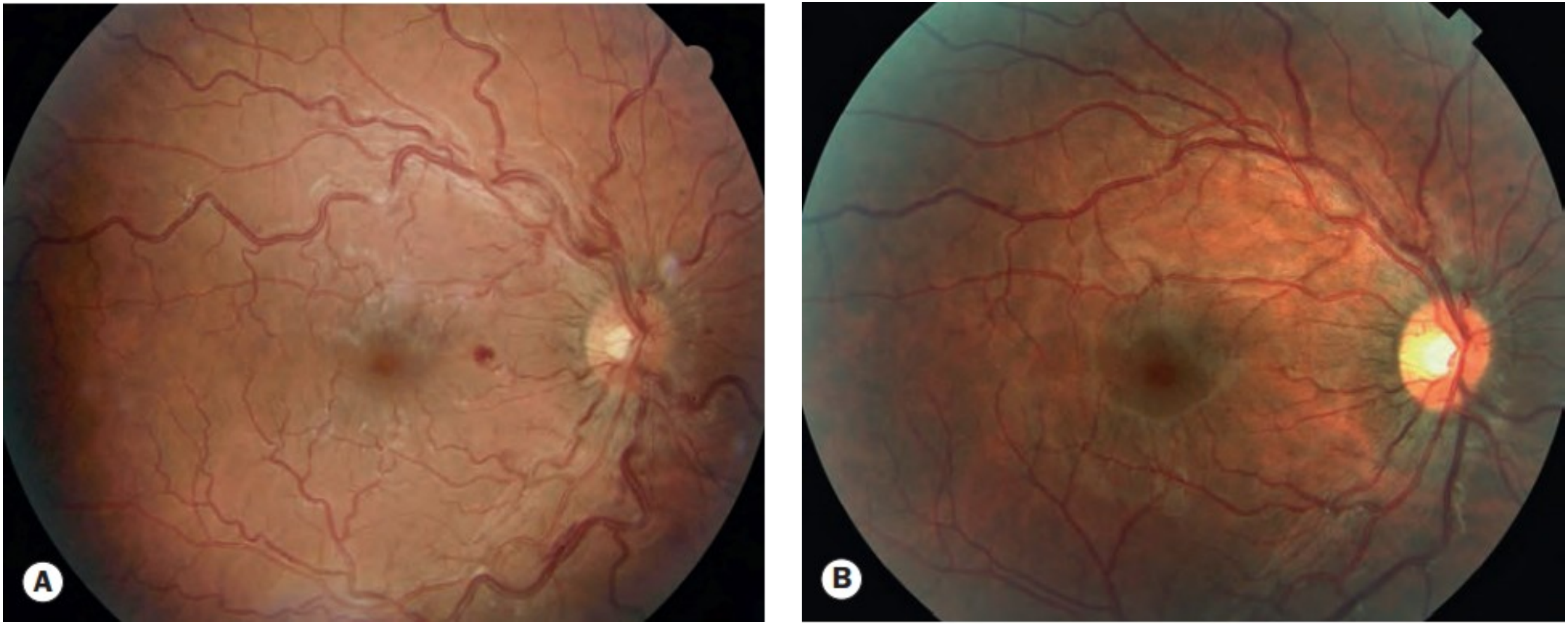
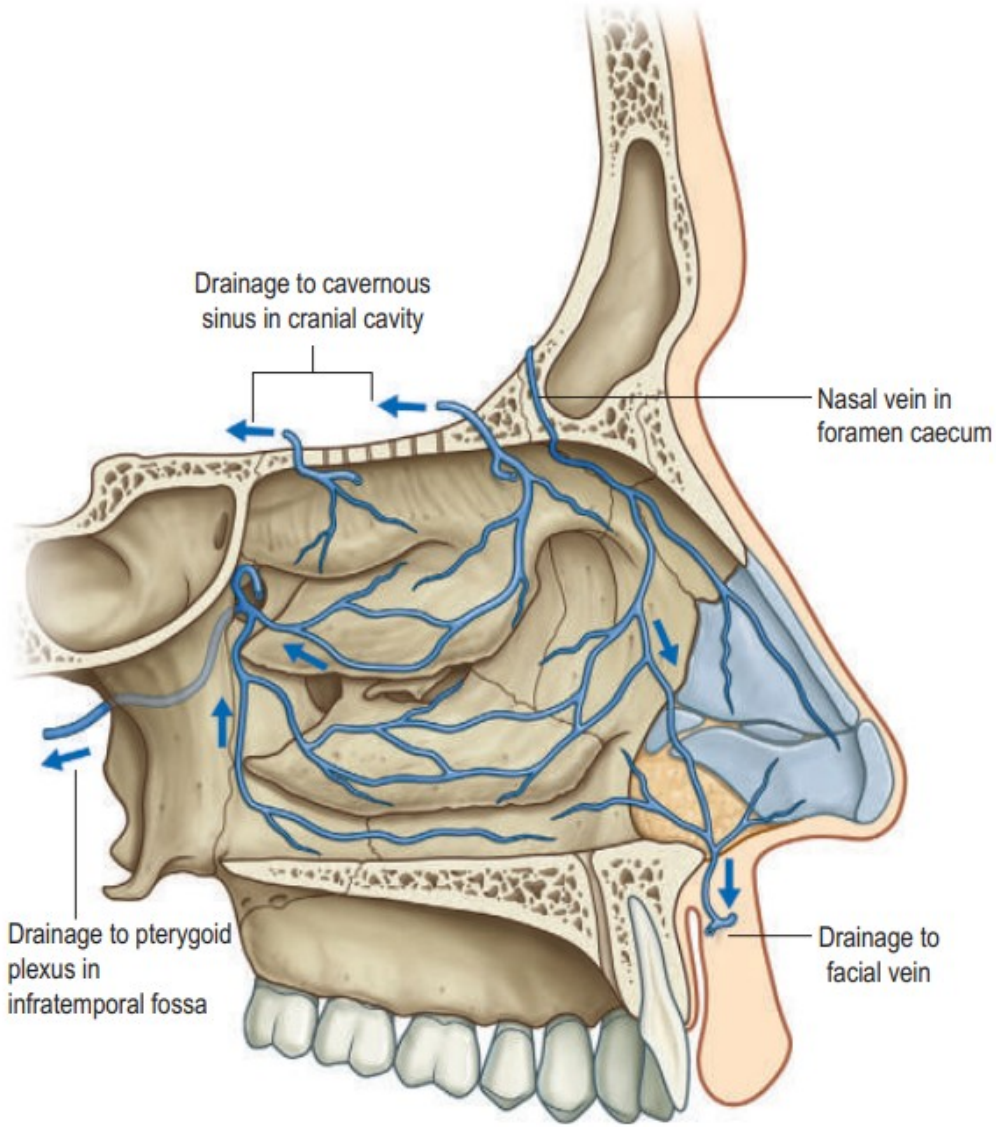
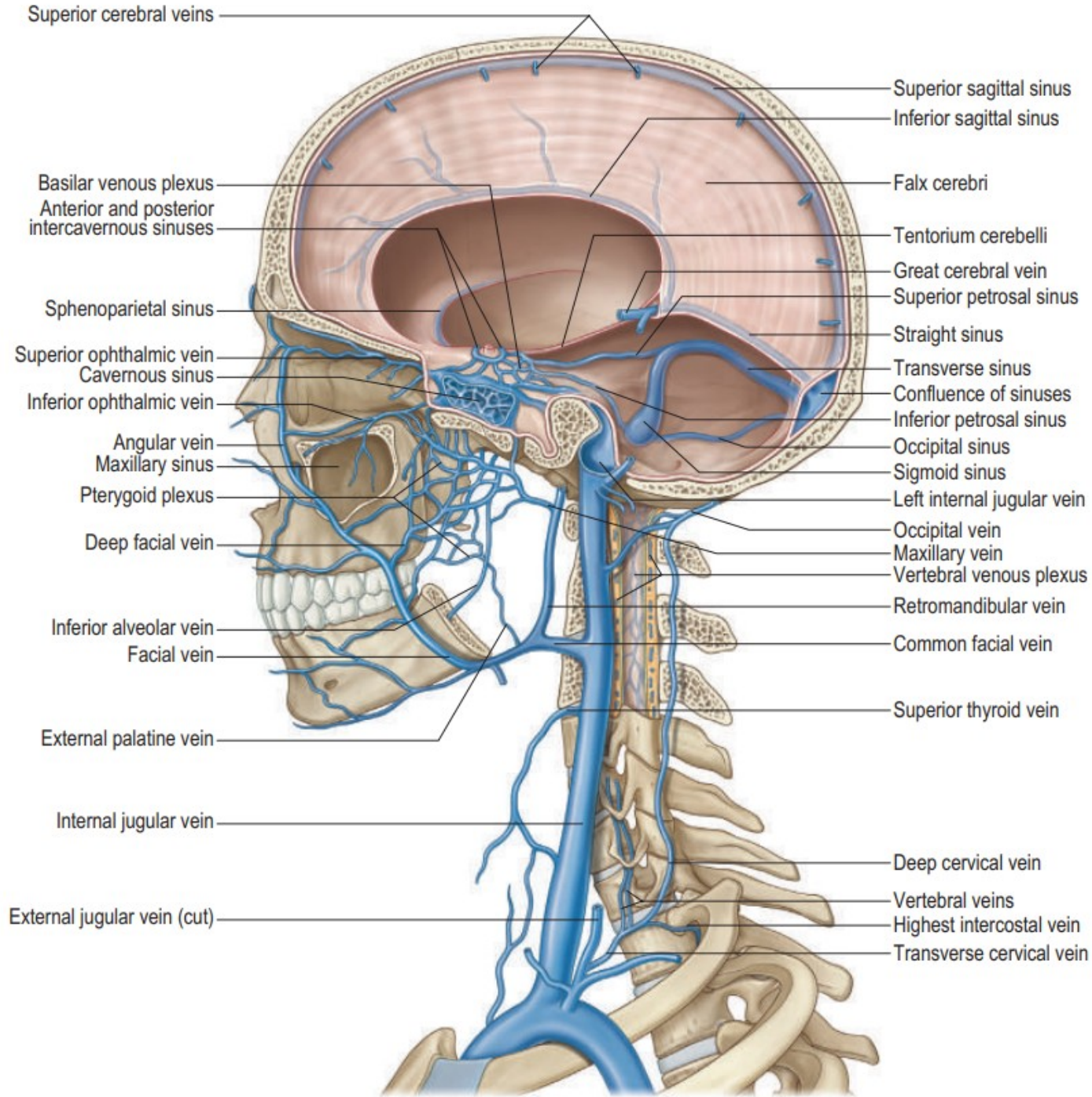


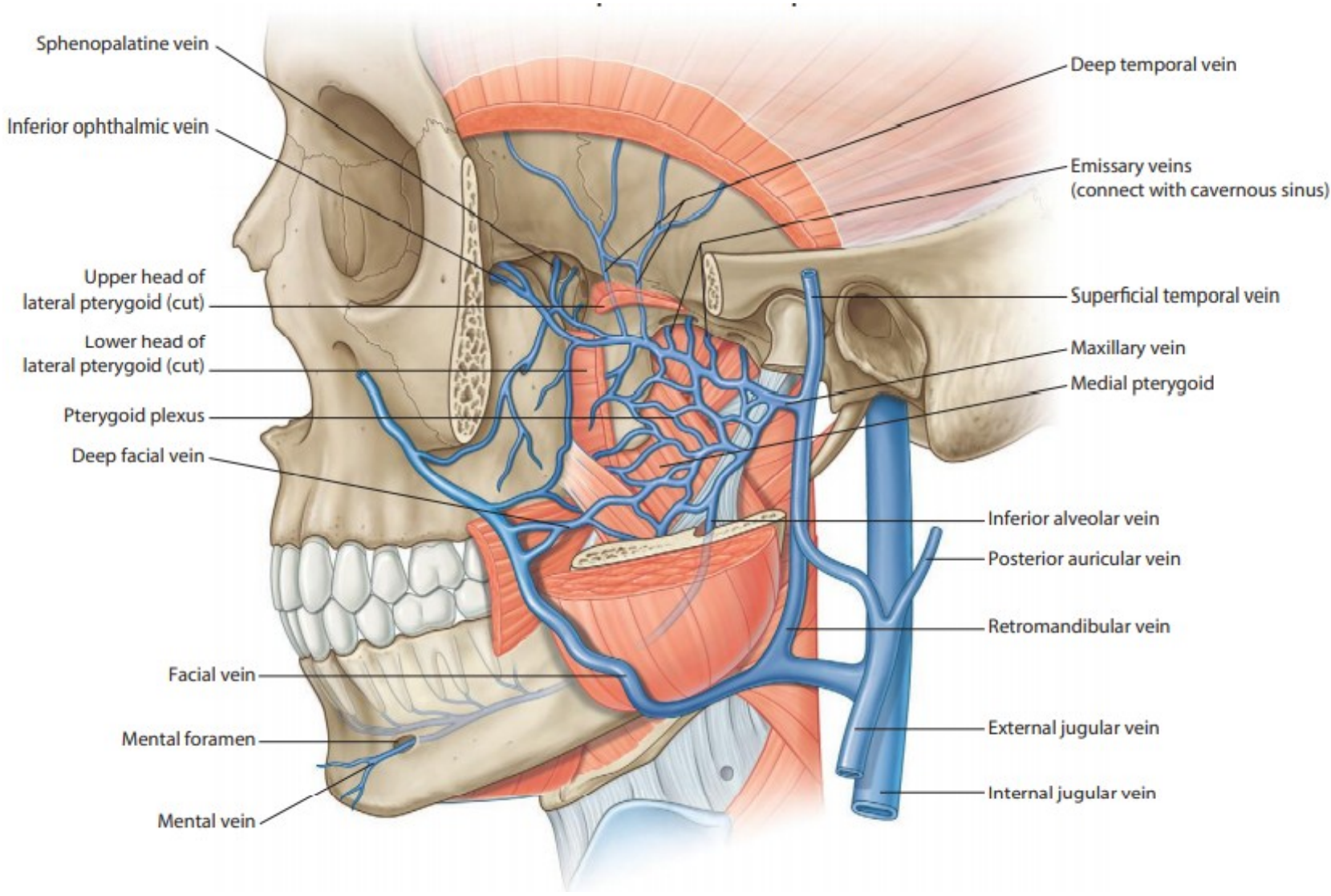
Fig. 13.29 Impending central retinal vein occlusion **(A)** before and **(B)** after spontaneous resolution


Drainage to cavernous sinus in cranial cavity
Nasal vein in foramen caecum
Drainage to pterygoid plexus in infratemporal fossa
Drainage to facial vein


Superior cerebral veins
Superior sagittal sinus
Inferior sagittal sinus
Basilar venous plexus
Falx cerebri
Anterior and posterior intercavernous sinuses
Tentorium cerebelli
Great cerebral vein
Sphenoparietal sinus
Superior petrosal sinus
Straight sinus
Superior ophthalmic vein
Transverse sinus
Cavernous sinus
Confluence of sinuses
Inferior ophthalmic vein
Inferior petrosal sinus
Angular vein
Occipital sinus
Maxillary sinus
Sigmoid sinus
Pterygoid plexus
Left internal jugular vein
Occipital vein
Deep facial vein
Maxillary vein
Vertebral venous plexus
Retromandibular vein
Inferior alveolar vein
Common facial vein
Facial vein
Superior thyroid vein
External palatine vein
Internal jugular vein
Deep cervical vein
Vertebral veins
External jugular vein (cut)
Highest intercostal vein
Transverse cervical vein

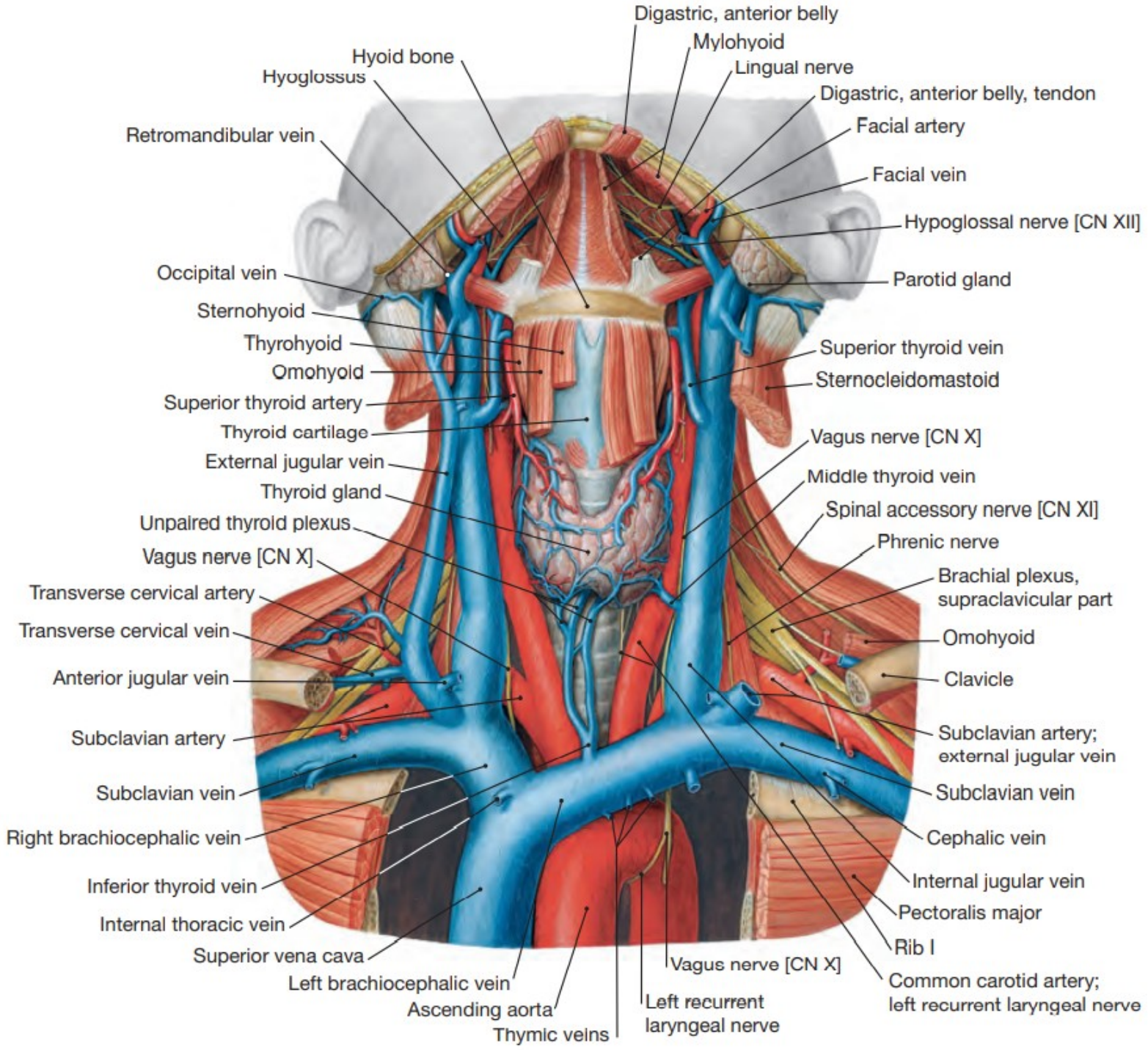
PLEXUS PTERYGOIDEUS

- *vv. meningeae mediae*
- *plexus venosus foraminis ovalis*
- *plexus venosus caroticus internus*
- venózní spojka přes *foramen rotundum*
- *vv. temporales profundae*
- *v. canalis pterygoidei*
- *vv. auriculares anteriores*
- *vv. articulares*
- *vv. tympaniceae*
- *v. stylomastoidea*
- *vv. parotideae*
- *vv. pharyngeae*
- *v. sphenopalatina*
- *v. ophthalmica inferior*
- *v. infraorbitalis*
- *v. profunda faciei*
- *v. palatina descendens*
- *vv. alveolares superiores posteriores*
- *v. alveolaris inferior*

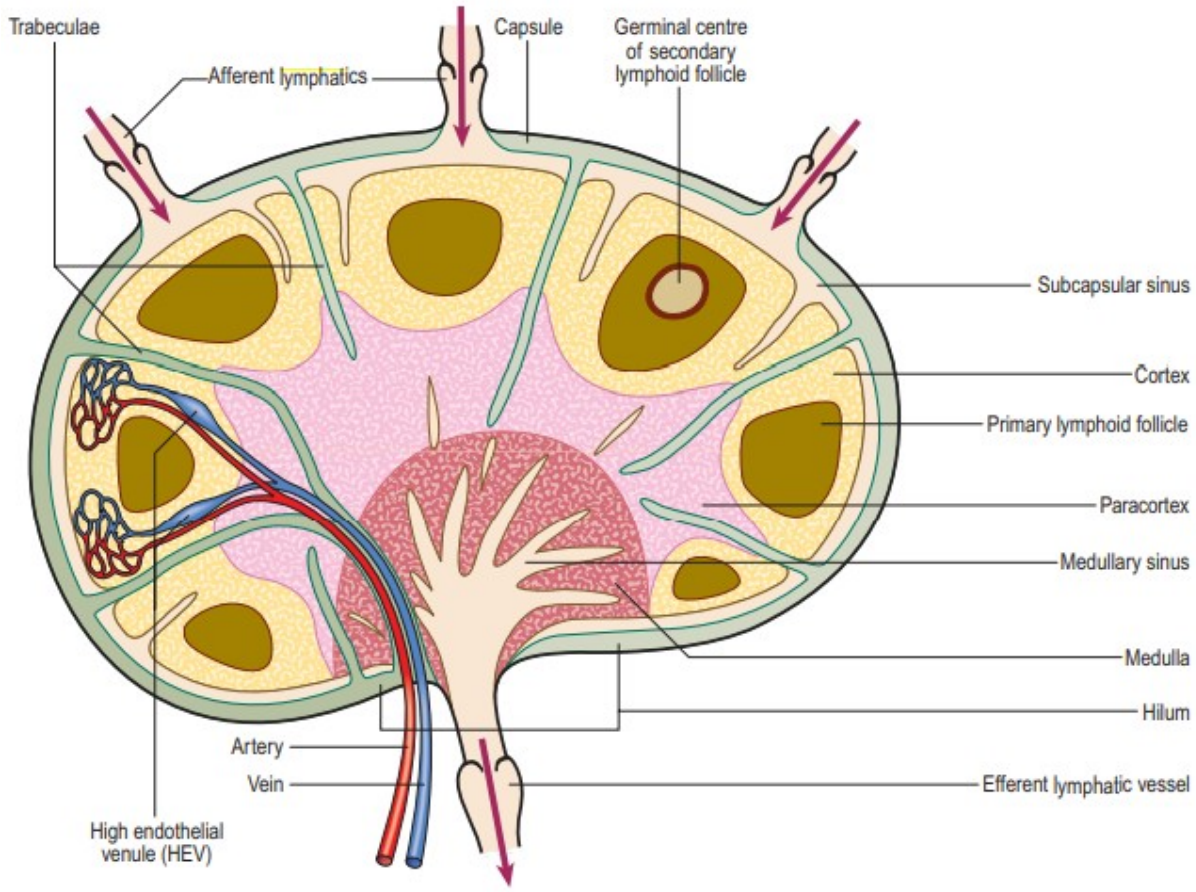


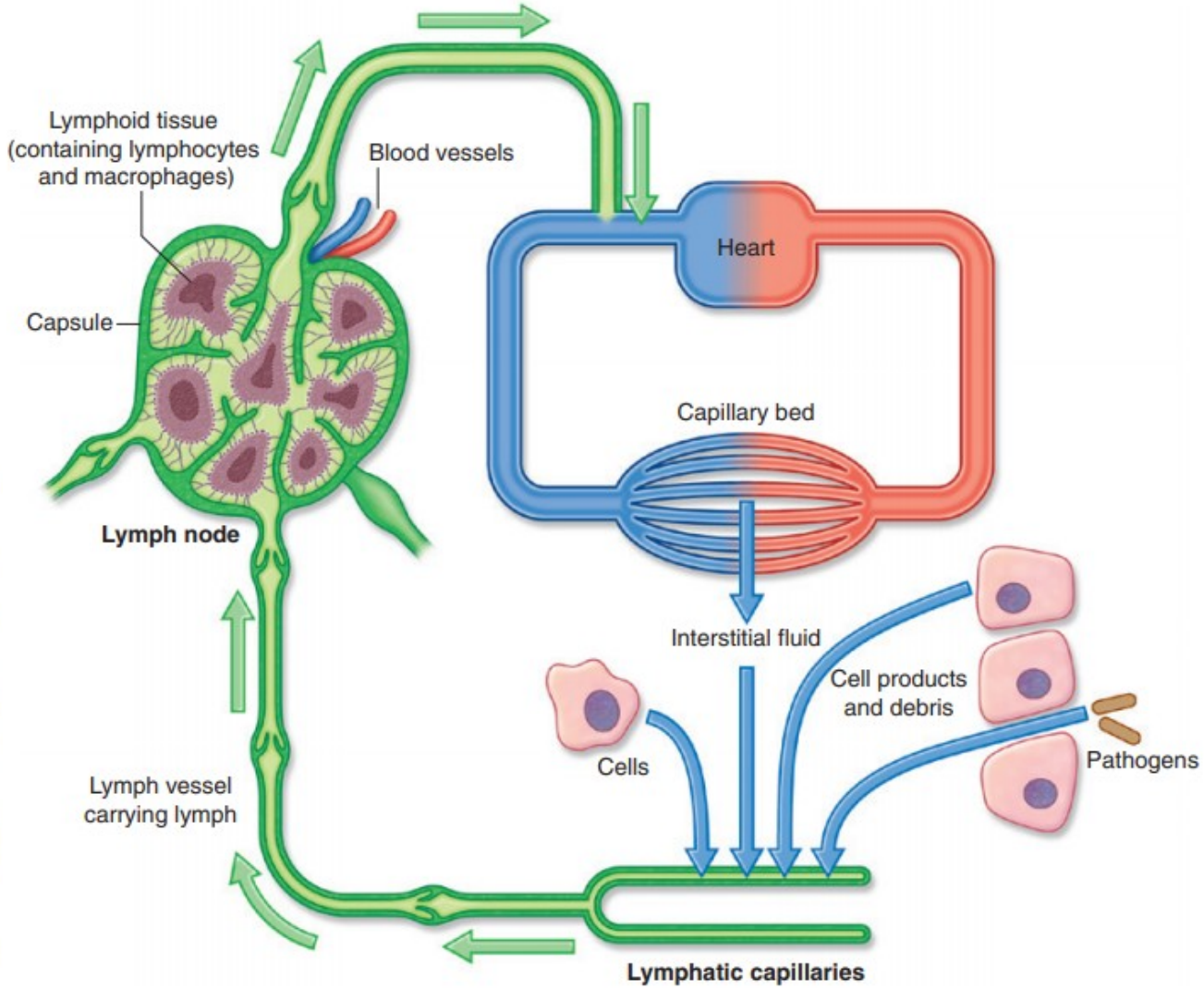
VENA JUGULARIS INTERNA

- ***sinus sigmoideus + sinus petrosus inferior***
- ***vv. pharyngeae (plexus pharyngeus)***
- ***v. retromandibularis***
- ***v. facialis***
- ***v. lingualis***
  - *v. sublingualis*
  - *v. comitans nervi hypoglossi*
- ***v. thyroidea superior***
  - *v. laryngea superior*
  - *v. sternocleidomastoidea*
- ***v. thyroidea media* (nekonstantní)**
- ***v. jugularis externa***
  - *v. jugularis anterior*

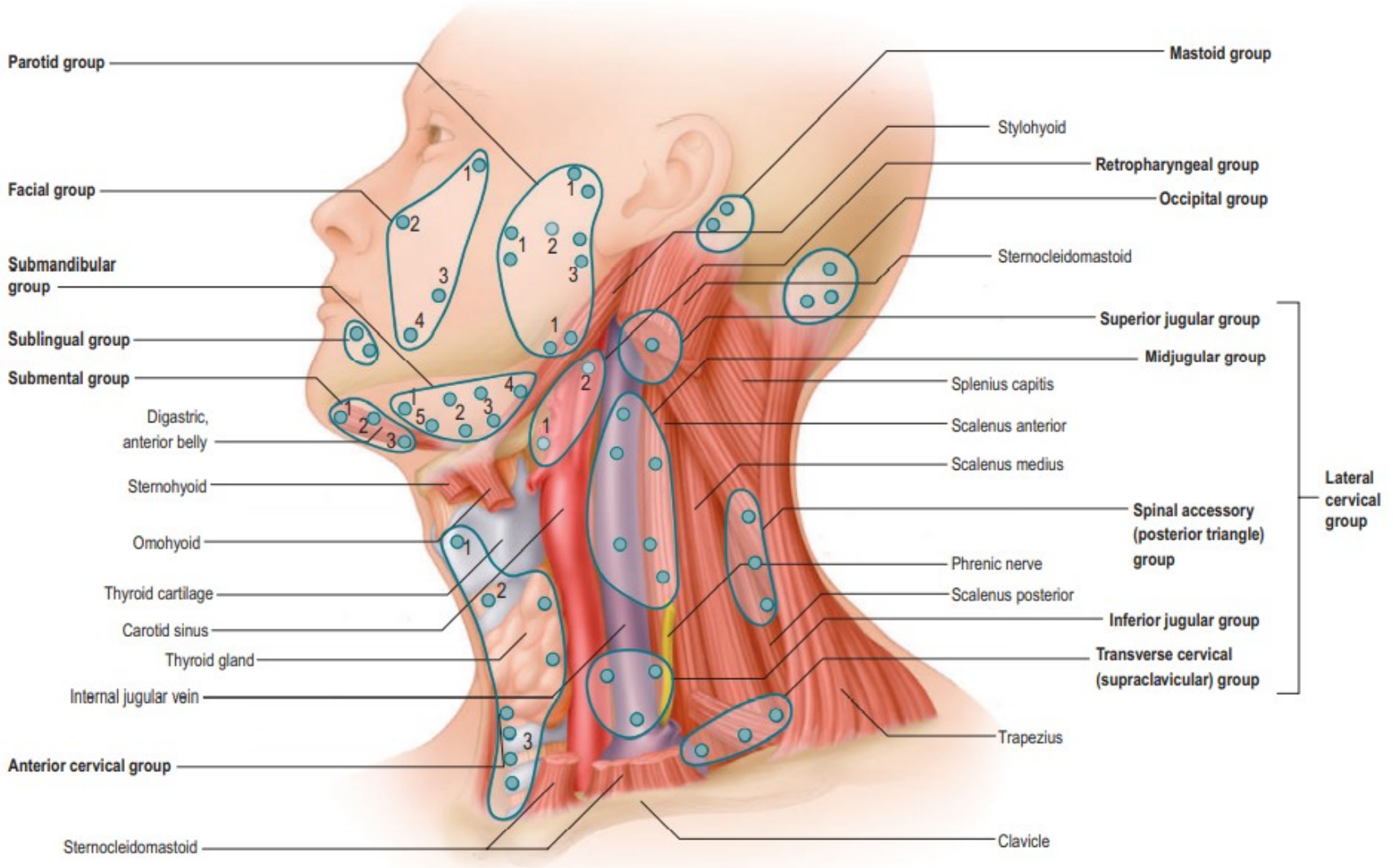


LYMFATICKÝ SYSTÉM - SOUHRN





PŘEHLED LYMFATICKÝCH UZLIN HLAVY A KRKU



Facial group	1. Malar 2. Infraorbital 3. Buccinator 4. Inferior maxillary	**Submandibular group**	1. Preglandular 2. Prevascular 3. Retrovascular 4. Retroglandular 5. Intracapsular	**Retropharyngeal group**	1. Lateral 2. Medial
Parotid group	1. Subfacial, extraglandular 2. Deep intraglandular 3. Suprafacial	**Submental group**	1. Anterior 2. Middle 3. Posterior	**Anterior cervical group**	1. Superficial anterior jugular chain 2. Prelaryngeal 3. Pretracheal

PŘEHLED LYMFATICKÝCH UZLIN HLAVY

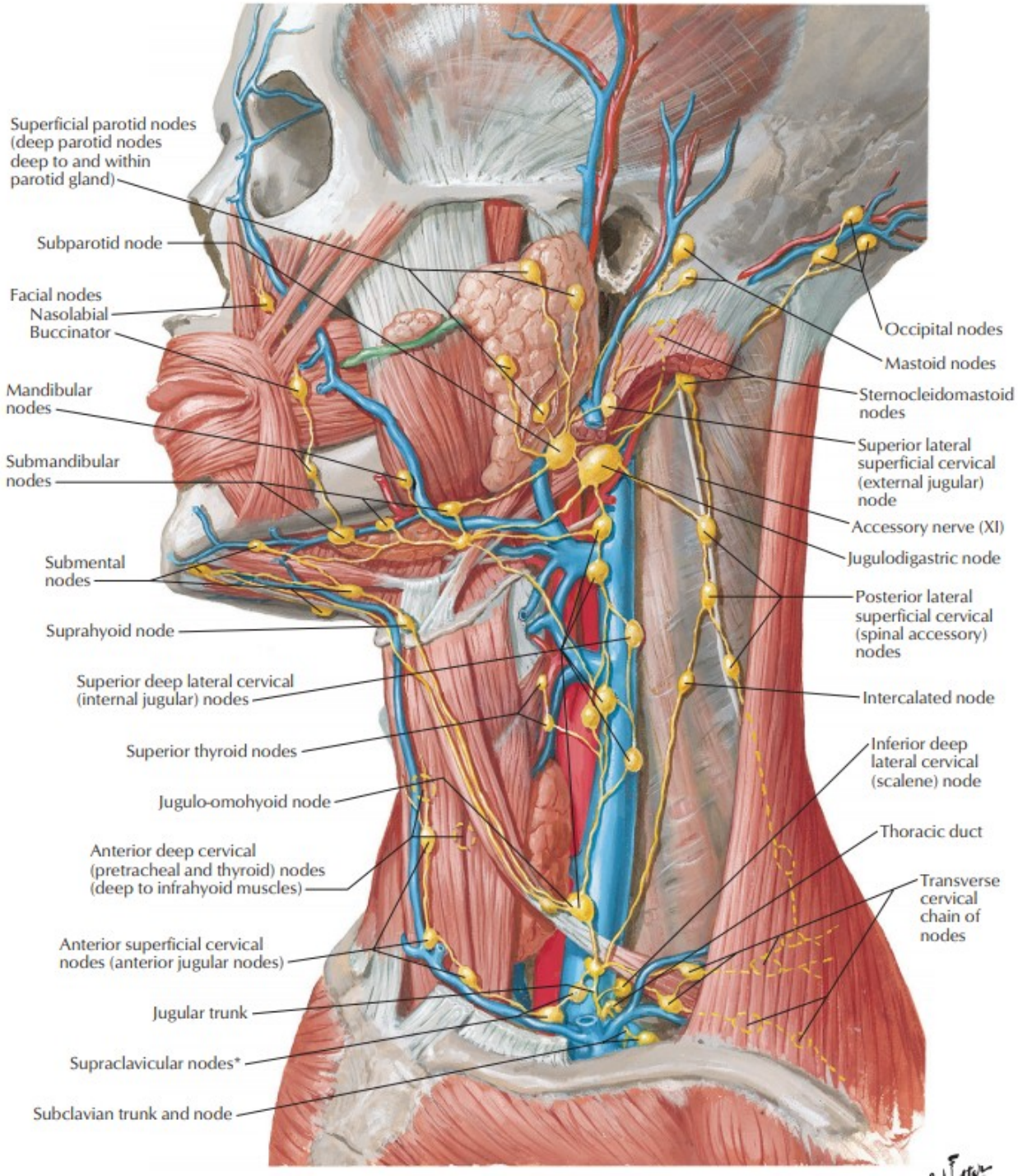
Nodi occipitales
- oblast: měkké pokrývky lebeční v týlní krajině
- odtok: *nodi cervicales superficiales* a *nodi cervicales profundi*

Nodi mastoidei
- oblast: měkké pokrývky lebeční za boltcem, zadní strana boltce
- odtok: *nodi cervicales superficiales* a *nodi cervicales profundi*

Nodi parotidei superficiales et profundi
- oblast: měkké pokrývky lebeční spánkové a čelní krajiny, zevní část očních víček, přední strana boltce a zevního zvukovodu, *gl. parotis* a přilehlá část tváře
- odtok: *nodi cervicales superficiales* a *nodi cervicales profundi*

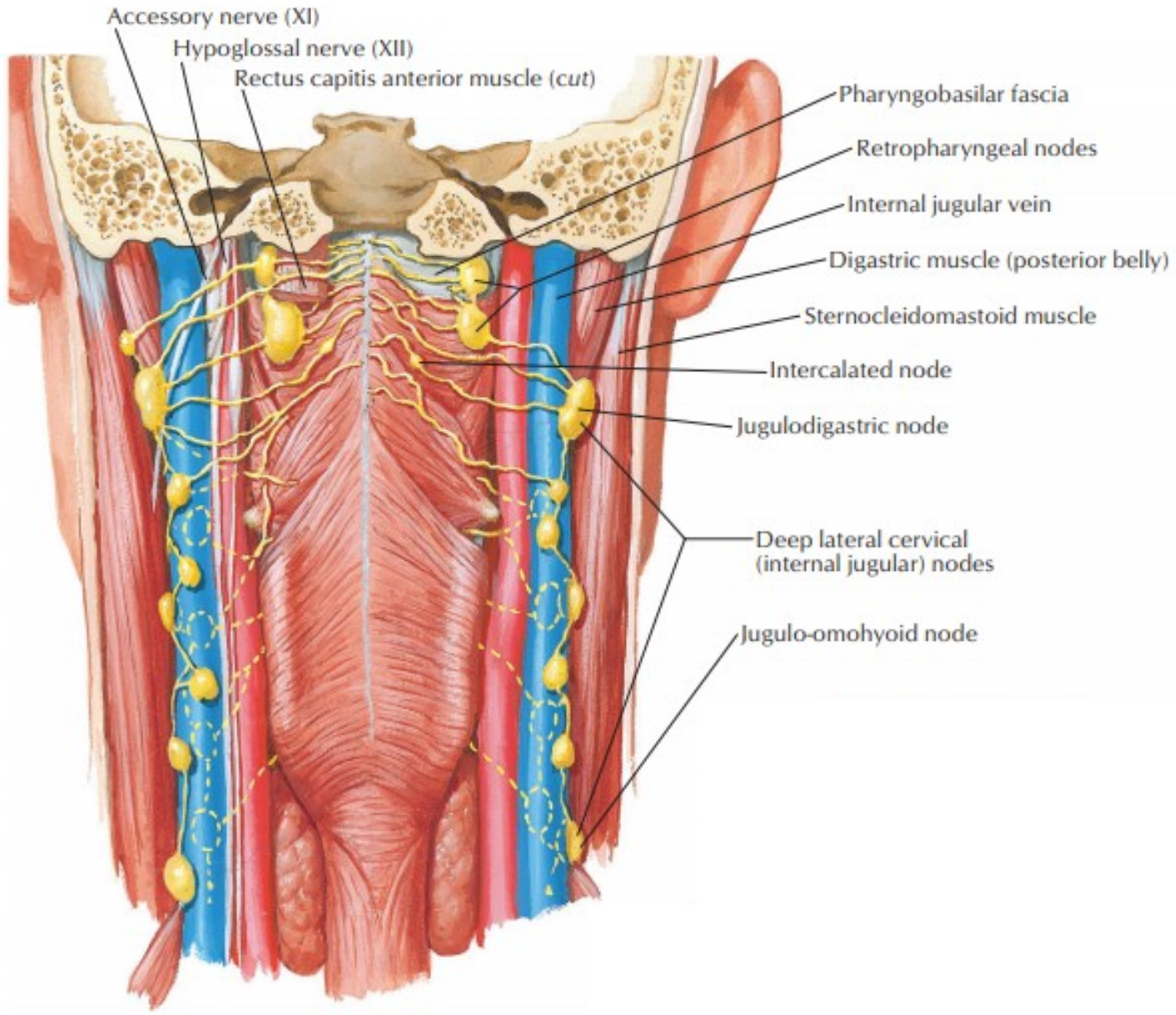
Nodi submandibulares
- oblast: dolní víčka, nos, rty, tváře, paralinguální oblast, spodina dutiny ústní, zuby (kromě horních i dolních M_3)
- odtok: *nodi cervicales profundi*

Nodi submentales
- oblast: dolní ret, brada, přední část ústní dutiny a mandibuly, přední zuby s dásní, hrot jazyka
- odtok: *nodi submandibulares* a *nodi cervicales profundi*



Nodi retropharyngei

- oblast: hltan, sliznice středního ucha, Eustachova trubice, zadní, horní a čichová oblast nosní sliznice
- odtok: *nodi cervicales profundi*



LYMFA Z JAZYKA

Apikální kolektory
→ *nodi juguloomohyoidei* nebo přes *nodi submentales*

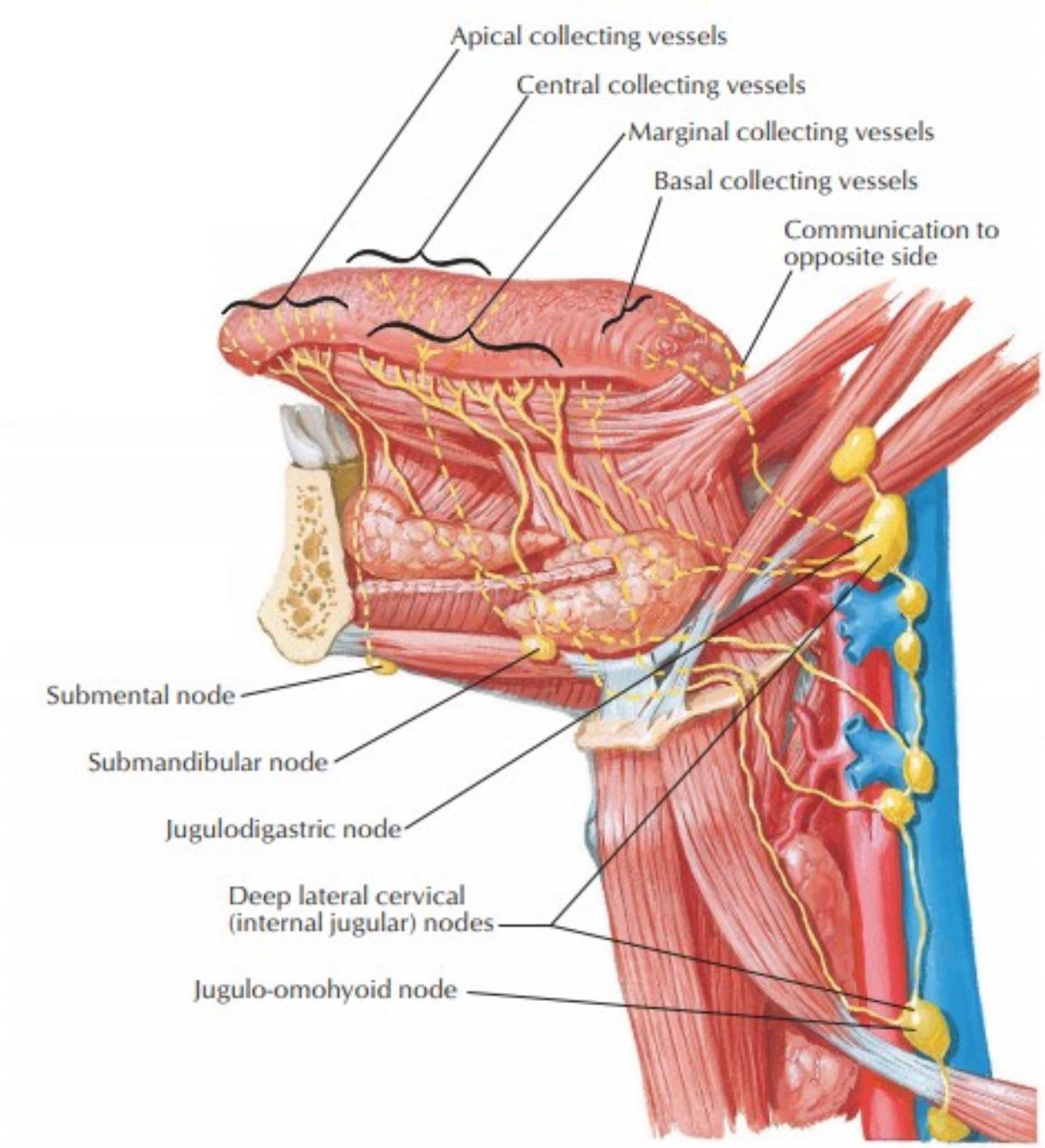
Povrchové marginální kolektory
→ *nodi submentales*

Vnitřní marginální kolektory
→ *nodi jugulares interni* z přední části jazyka
→ *nodus jugulodigastricus* ze zadní části jazyka

Centrální kolektory
→ *nodi submandibulares* a *nodus juguloomohyoideus*

Bazální kolektory
→ *nodi jugulares interni* a *nodus jugulodigastricus*

\+ *nodi linguales* při bázi jazyka



Nodi cervicales laterales superficiales

- podél *v. jugularis externa*

Nodi cervicales laterales profundi

a. nodi jugulares interni

- *nodus tonsillaris* (Woodova uzlina)
- *nodus jugulodigastricus* (Küttnerova uzlina)

b. nodi comitantes n. accesorius

c. nodi supraclaviculares

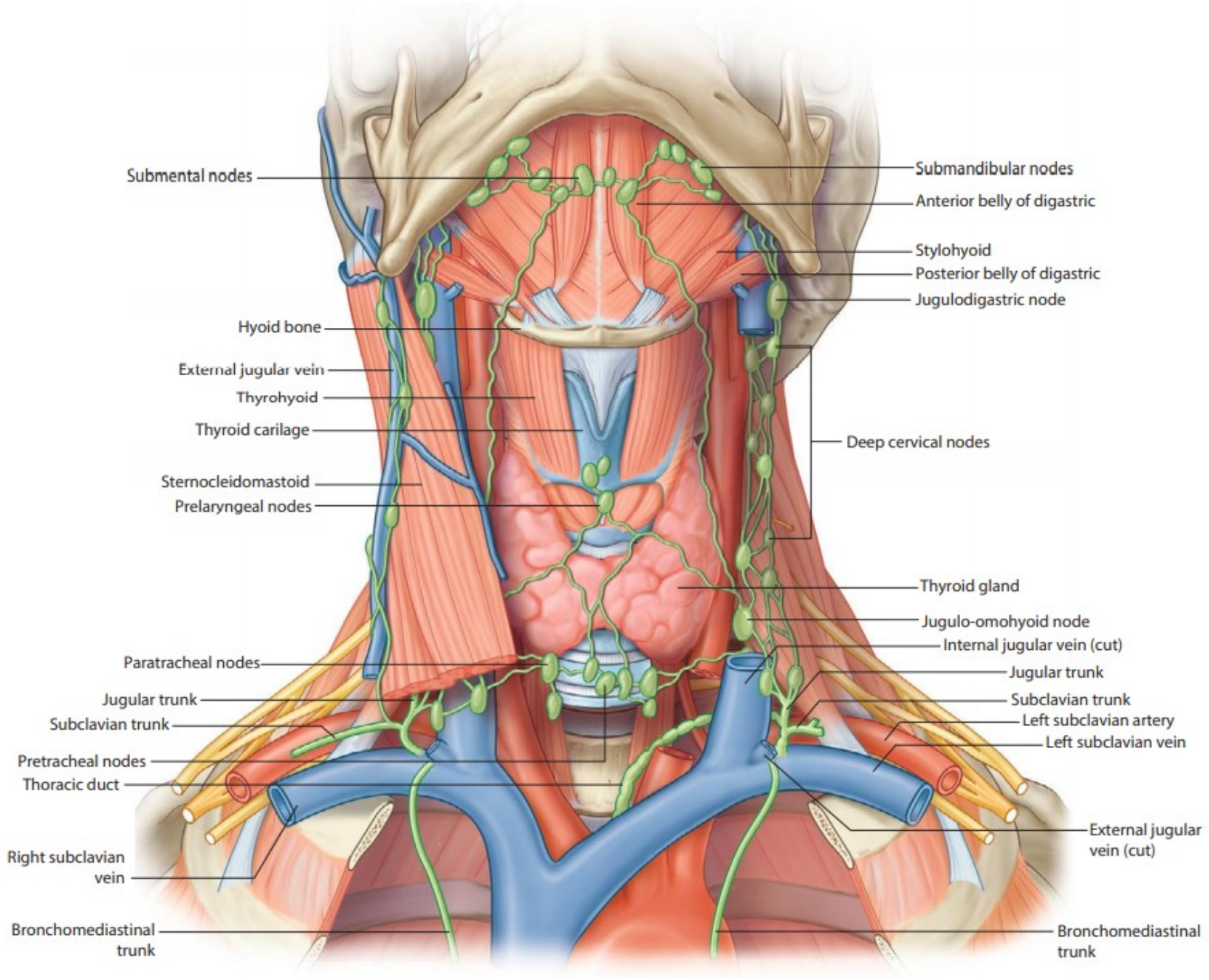
- vlevo Wirchovovy uzliny

Nodi cervicales anteriores superficiales

- ***nodi jugulares anteriores***

Nodi cervicales anteriores profundi

- ***nodi praelaryngei***
- ***nodi thyroidei***
- ***nodi praeglandulares***
- ***nodi praetracheales***
- ***nodi paratracheales***



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