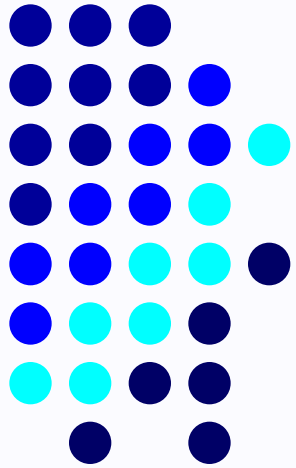
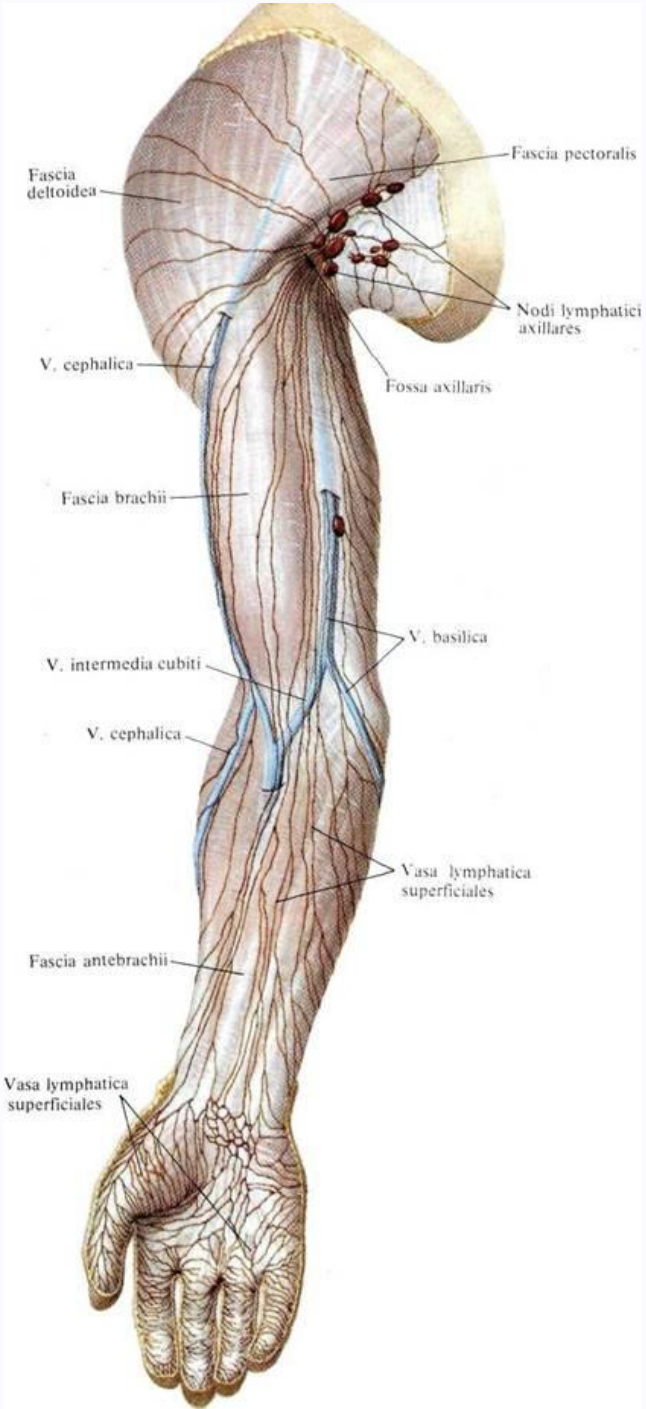
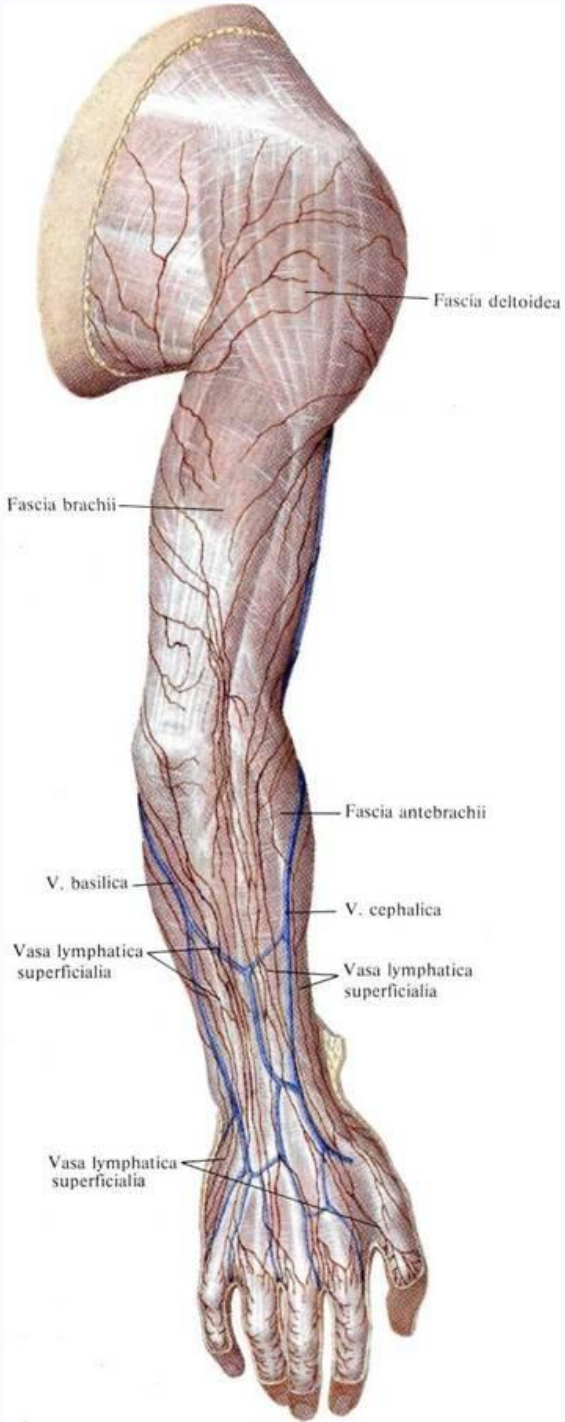
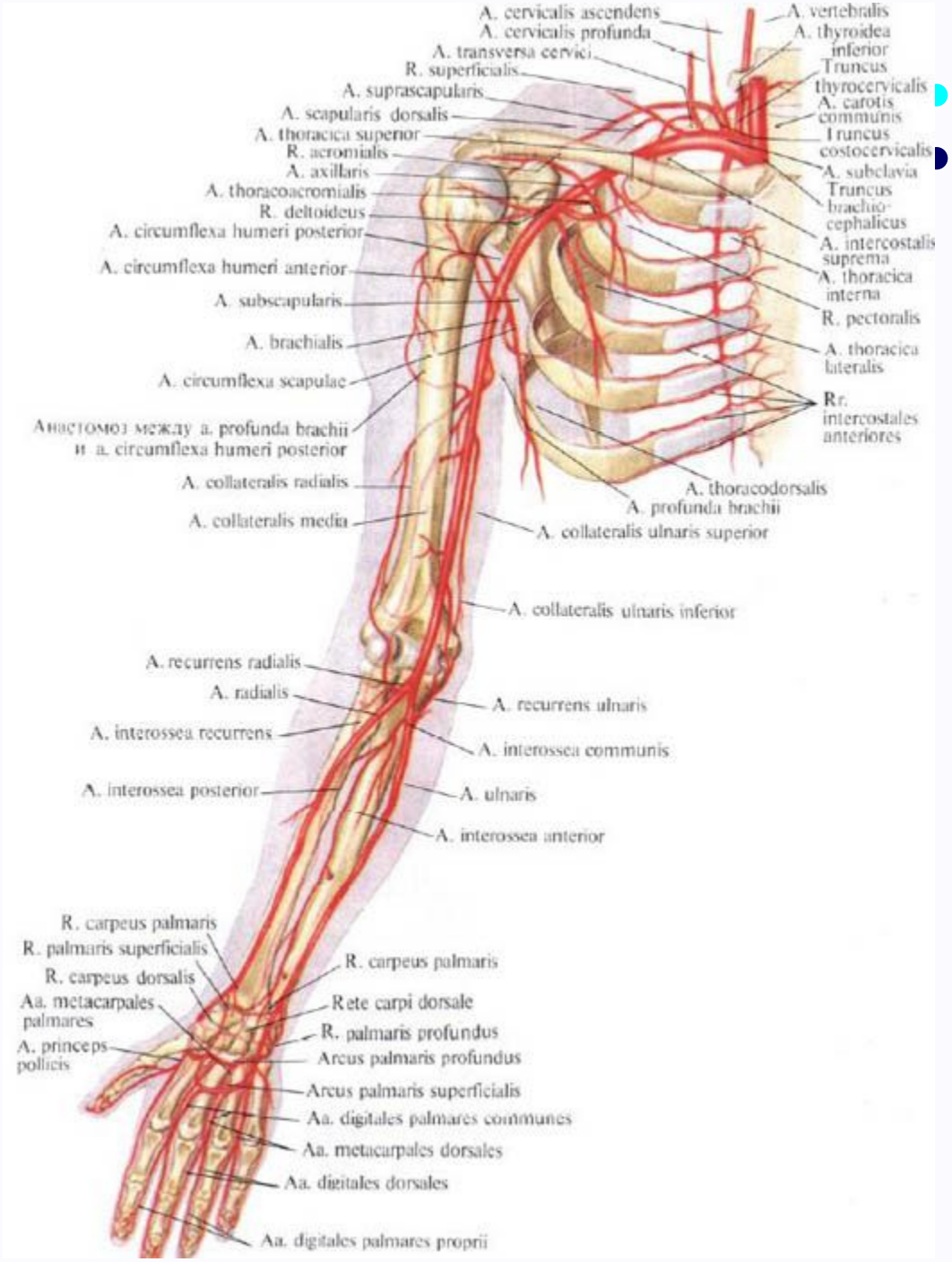
Clinical anatomy of the upper limb



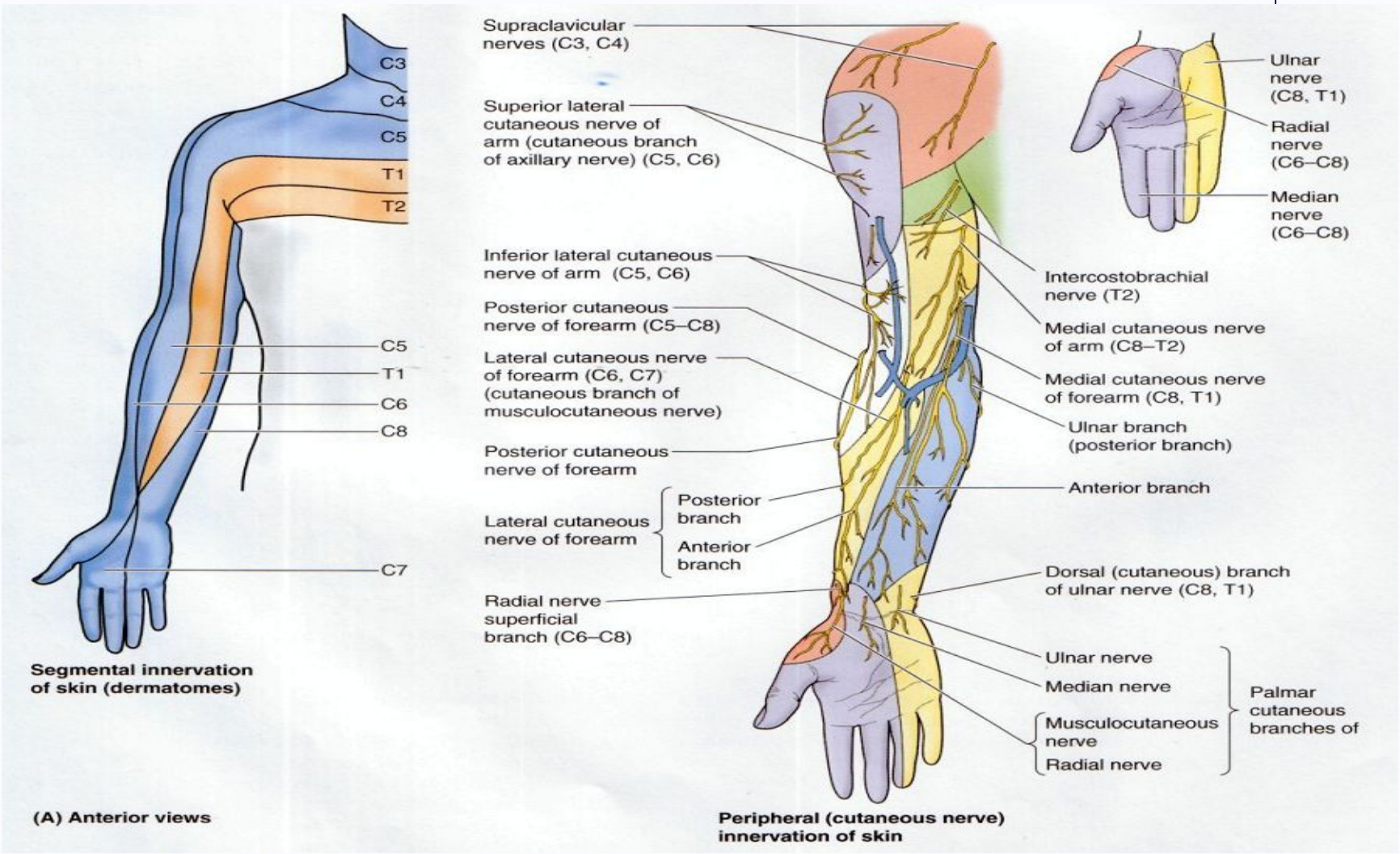

Fascia deltoidea
Fascia pectoralis
Nodi lymphatici axillares
V. cephalica
Fossa axillaris
Fascia brachii
V. basilica
V. intermedia cubiti
V. cephalica
Vasa lymphatica superficiales
Fascia antebrachii
Vasa lymphatica superficiales


Fascia deltoidea
Fascia brachii
Fascia antebrachii
V. basilica
V. cephalica
Vasa lymphatica superficialia
Vasa lymphatica superficialia
Vasa lymphatica superficialia

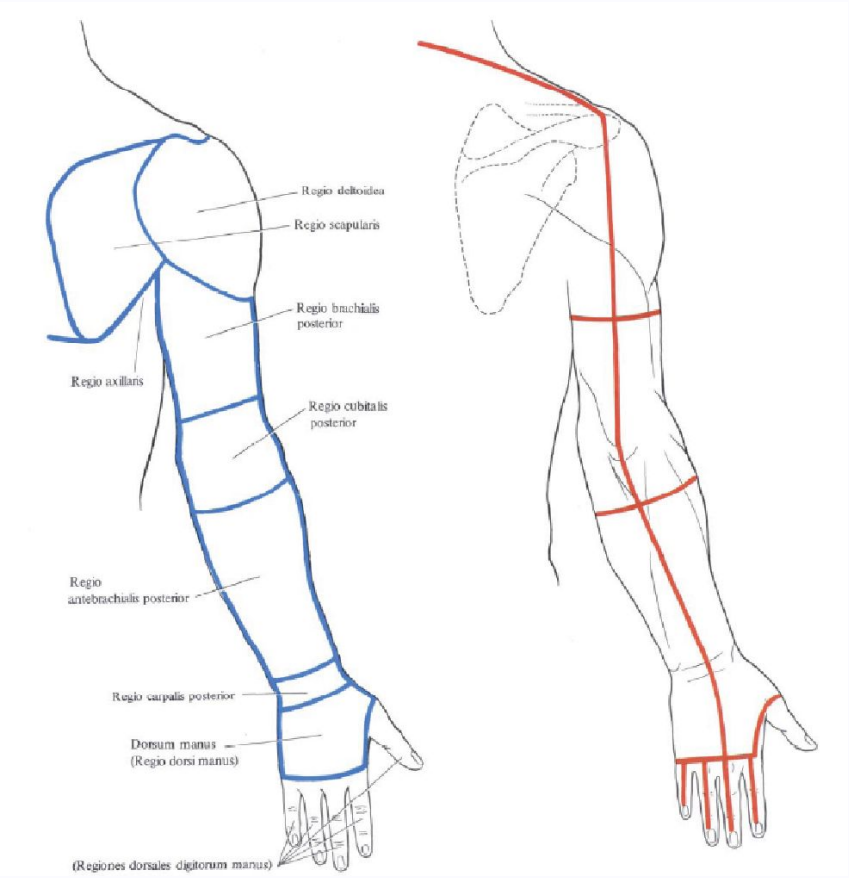
Arteries of the upper limb

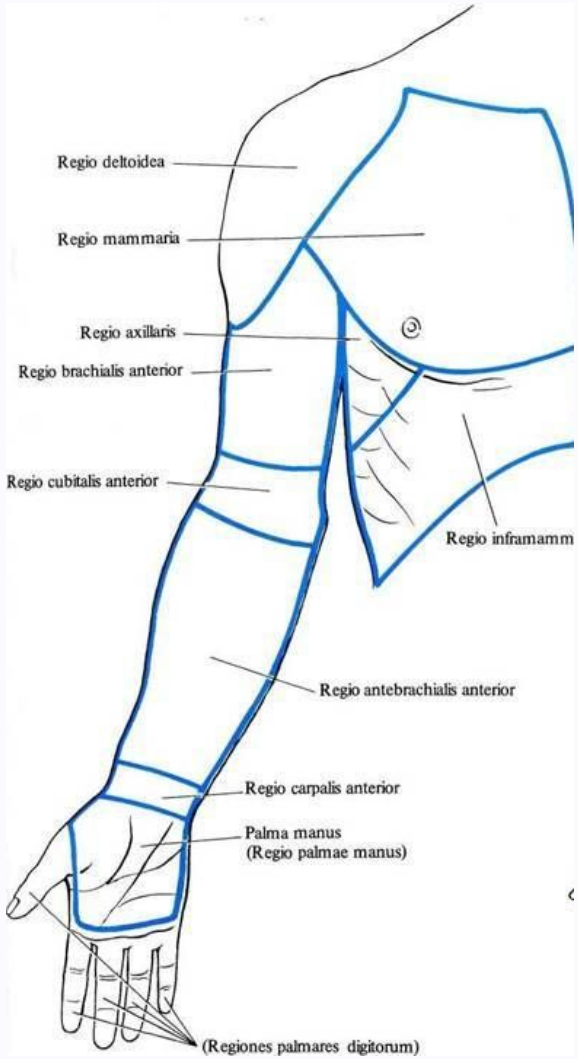


Skin innervations

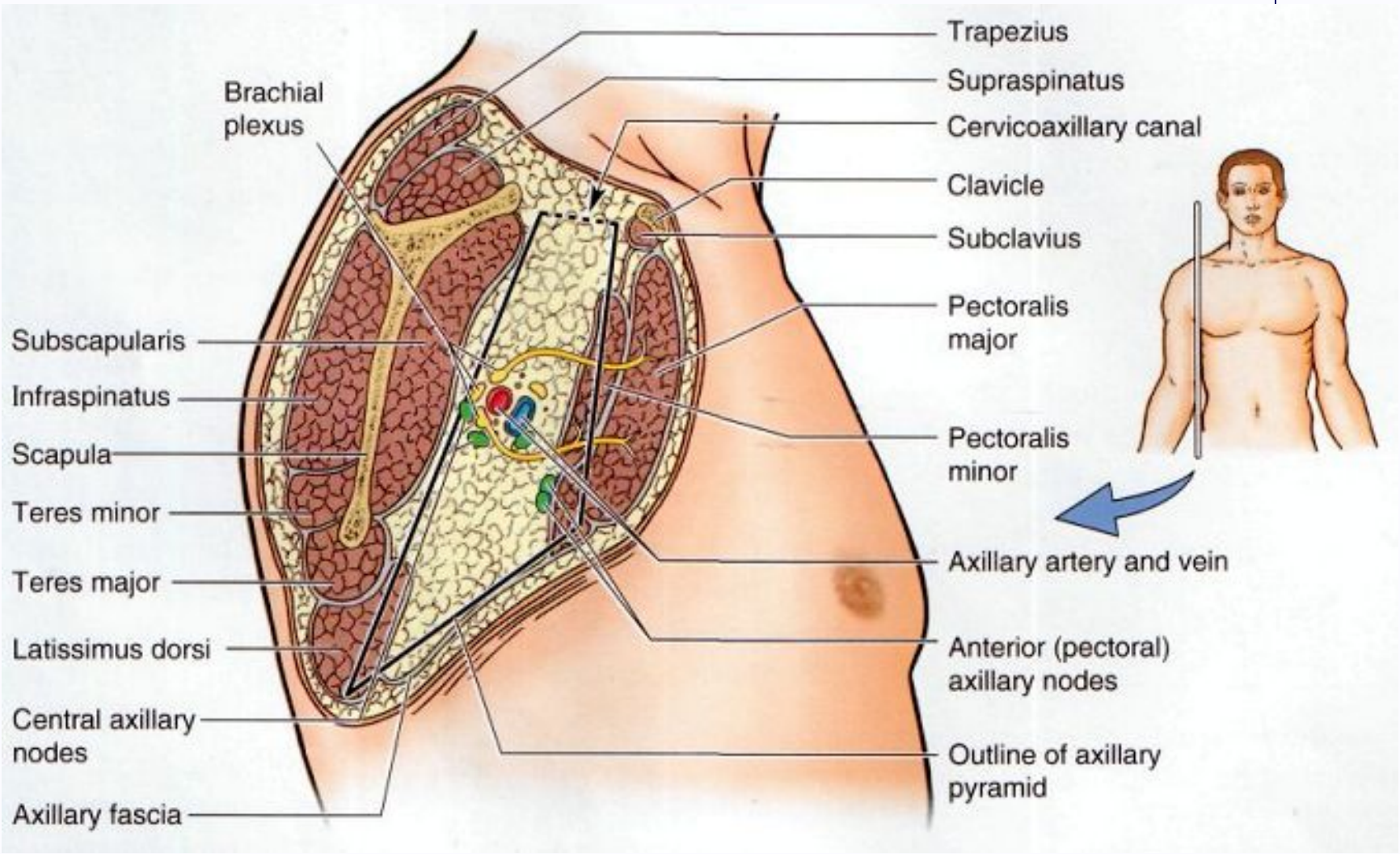


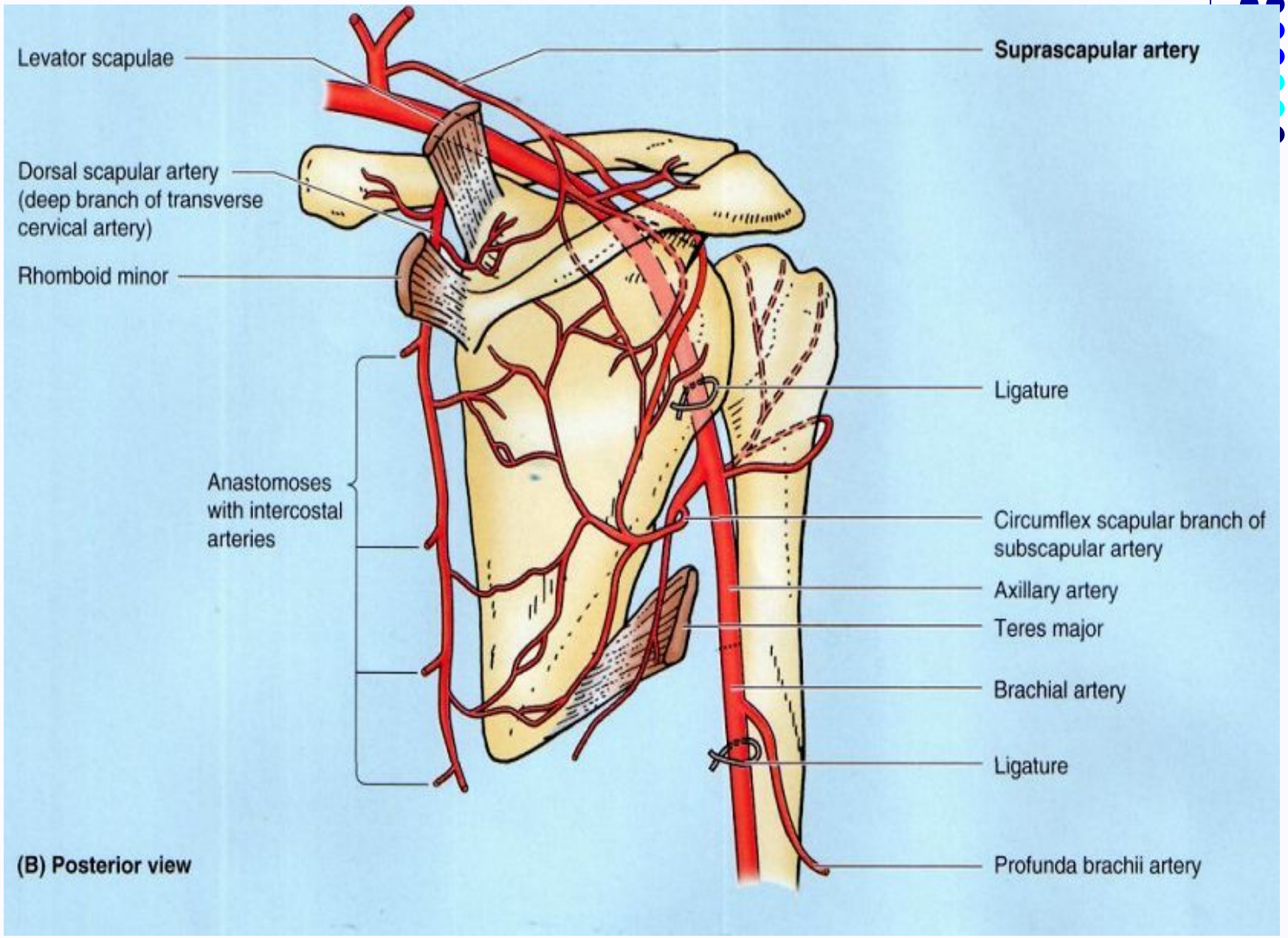
Upper limb

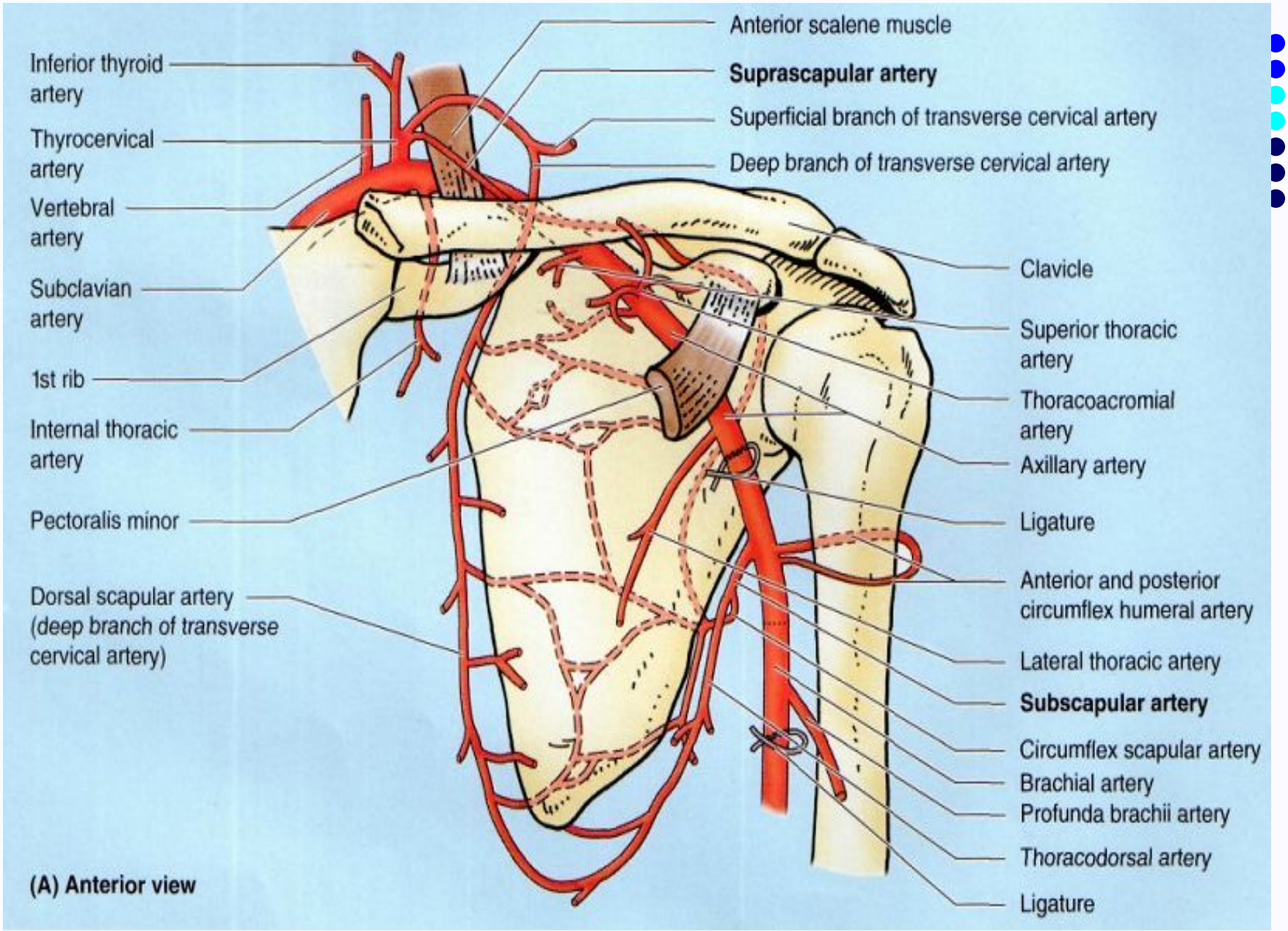

Regio deltoidea
Regio scapularis
Regio brachialis posterior
Regio axillaris
Regio cubitalis posterior
Regio antebrachialis posterior
Regio carpalis posterior
Dorsum manus (Regio dorsi manus)
(Regiones dorsales digitorum manus)


Regio deltoidea
Regio mammaria
Regio axillaris
Regio brachialis anterior
Regio cubitalis anterior
Regio inframamm
Regio antebrachialis anterior
Regio carpalis anterior
Palma manus (Regio palmae manus)
(Regiones palmares digitorum)

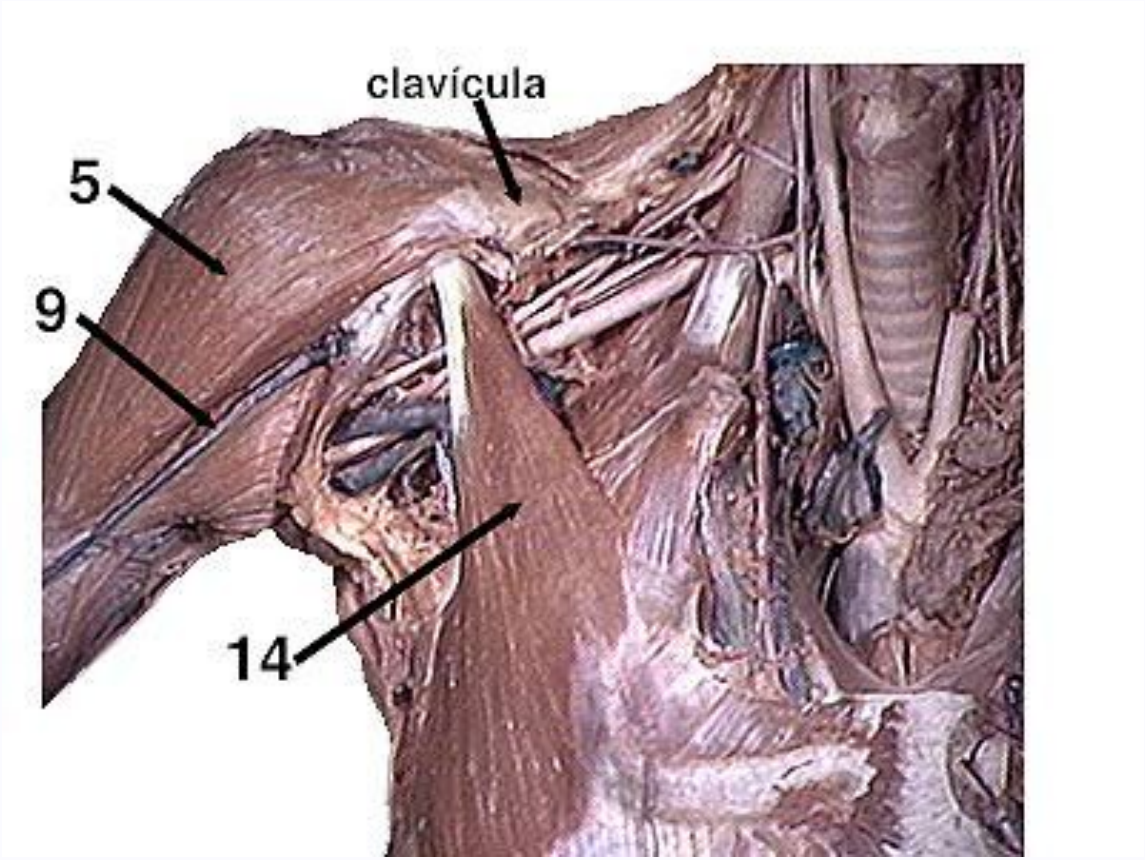
Regio scapularis

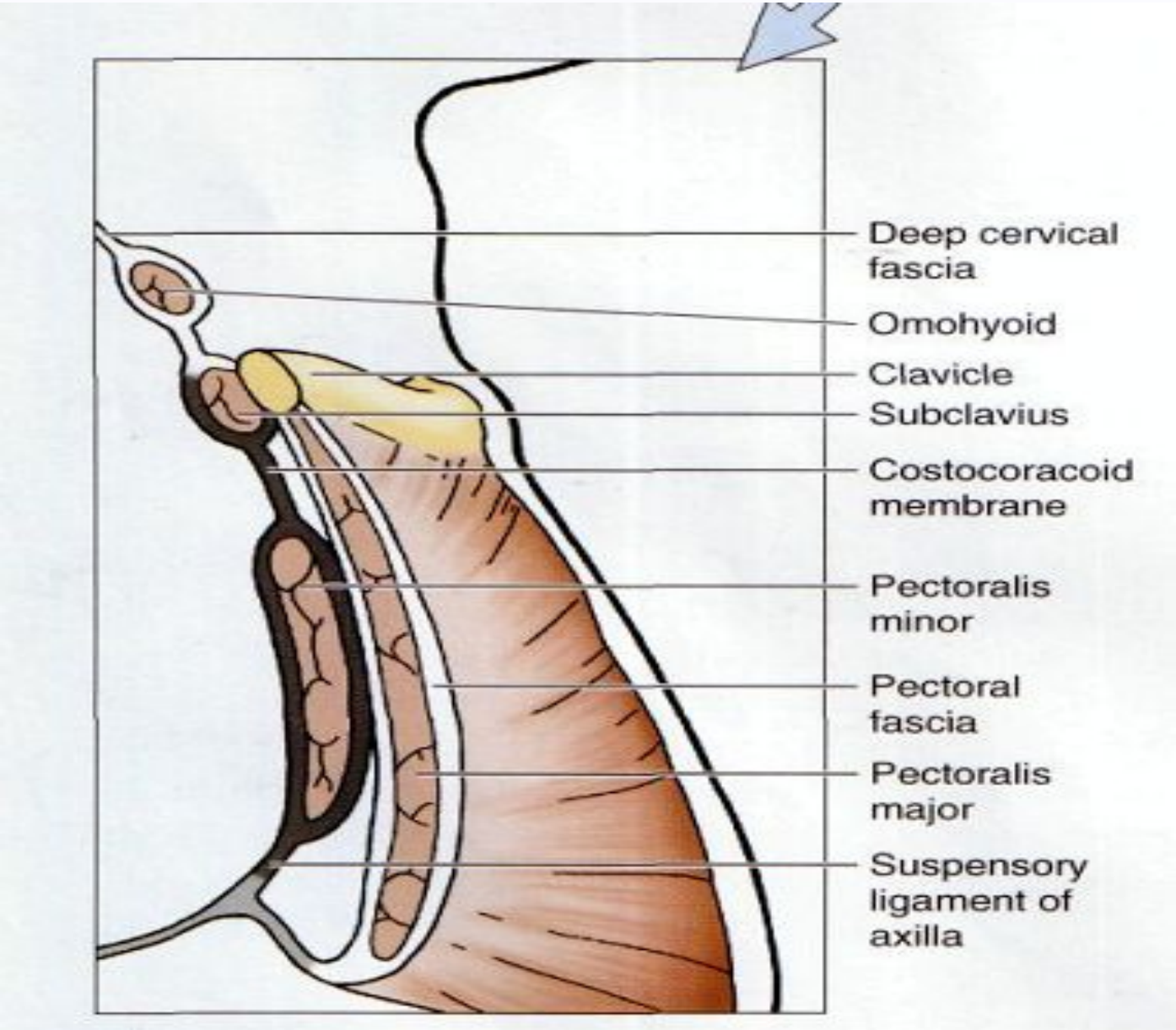


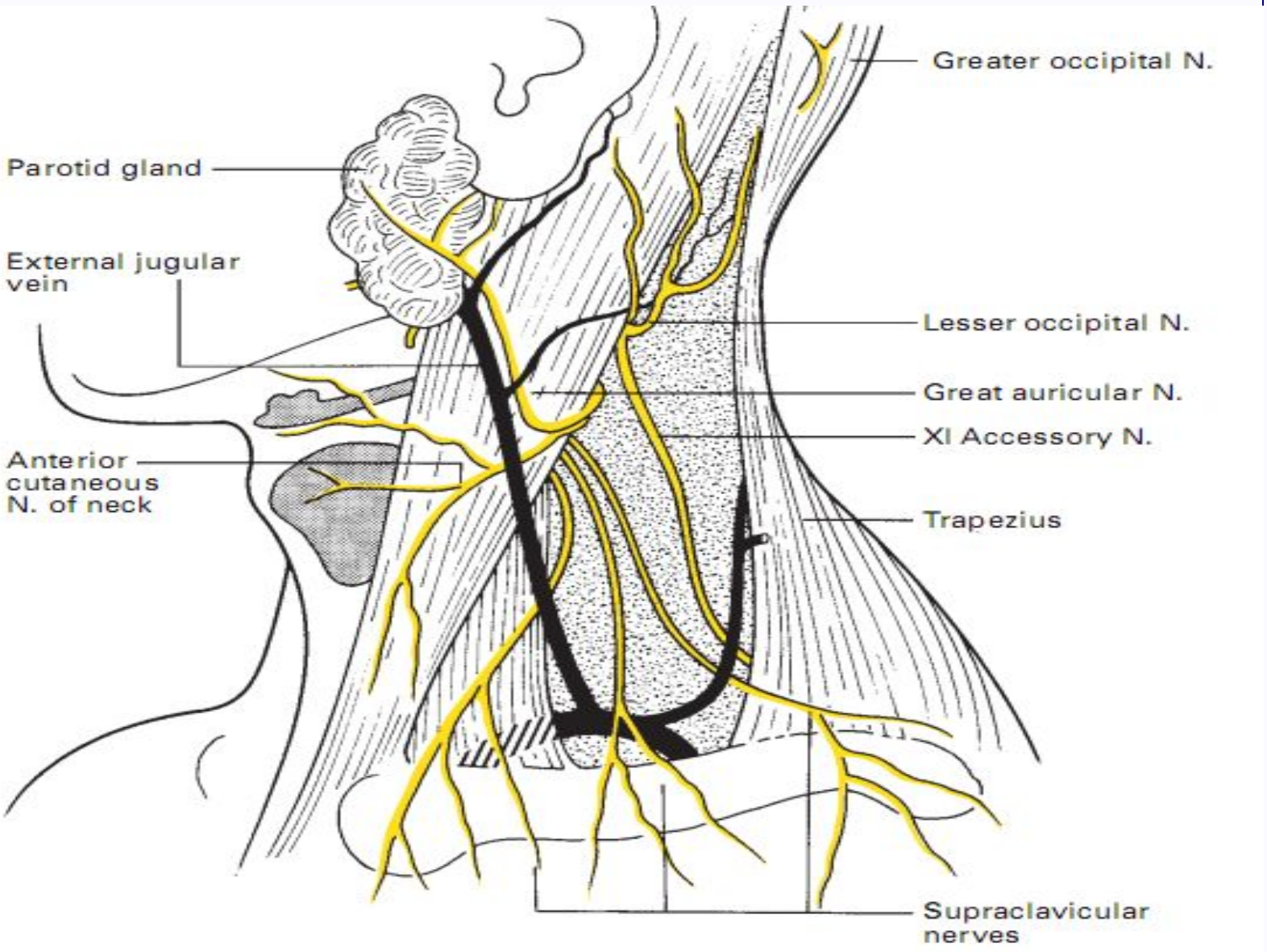

Levator scapulae
Suprascapular artery
Dorsal scapular artery
(deep branch of transverse
cervical artery)
Rhomboid minor
Ligature
Anastomoses
with intercostal
arteries
Circumflex scapular branch of
subscapular artery
Axillary artery
Teres major
Brachial artery
Ligature
Profunda brachii artery
(B) Posterior view


Anterior scalene muscle
Inferior thyroid artery
Suprascapular artery
Superficial branch of transverse cervical artery
Thyrocervical artery
Deep branch of transverse cervical artery
Vertebral artery
Clavicle
Subclavian artery
Superior thoracic artery
1st rib
Thoracoacromial artery
Internal thoracic artery
Axillary artery
Pectoralis minor
Ligature
Anterior and posterior circumflex humeral artery
Dorsal scapular artery (deep branch of transverse cervical artery)
Lateral thoracic artery
Subscapular artery
Circumflex scapular artery
Brachial artery
Profunda brachii artery
Thoracodorsal artery
Ligature
(A) Anterior view

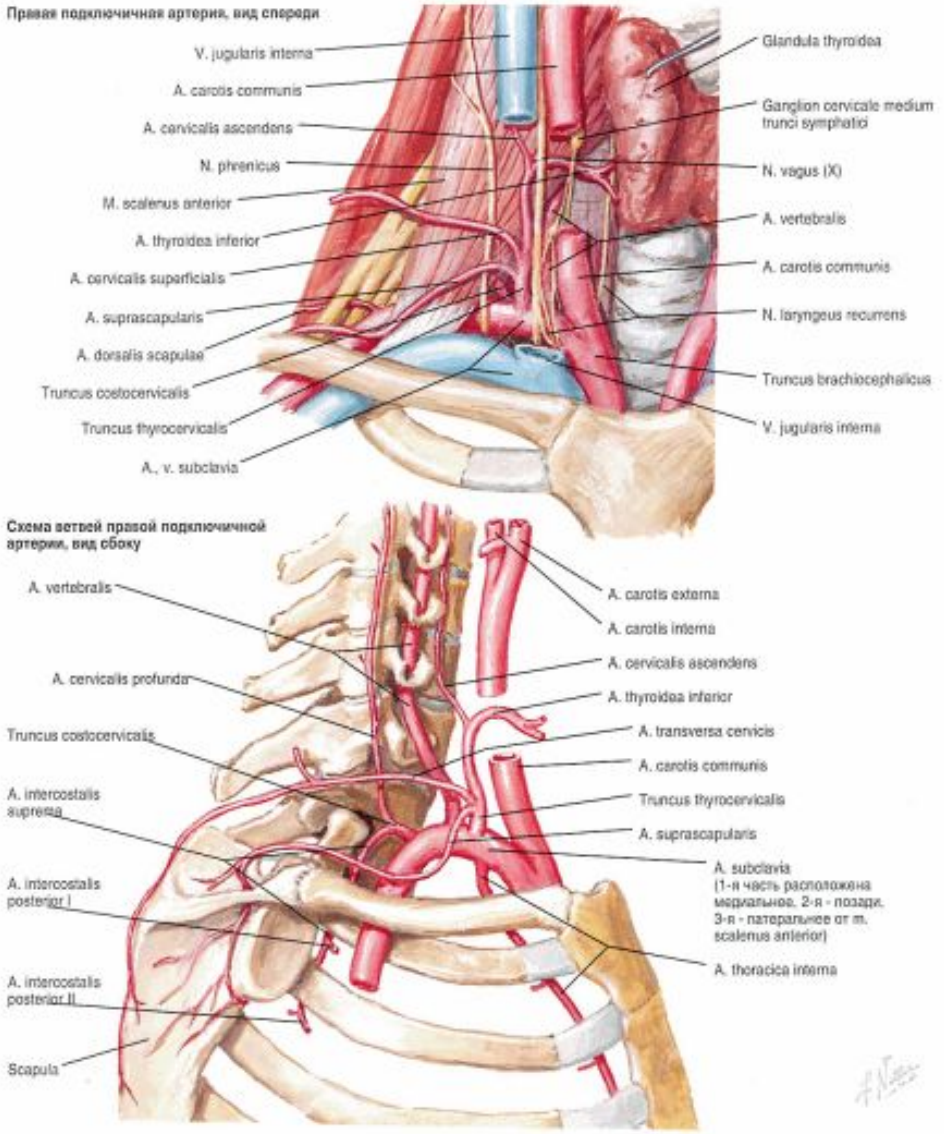
Regio infraclavicularis




Deep cervical fascia
Omohyoid
Clavicle
Subclavius
Costocoracoid membrane
Pectoralis minor
Pectoral fascia
Pectoralis major
Suspensory ligament of axilla


Greater occipital N.
Parotid gland
External jugular vein
Lesser occipital N.
Great auricular N.
XI Accessory N.
Anterior cutaneous N. of neck
Trapezius
Supraclavicular nerves

a. subclavia:


Правая подключичная артерия, вид спереди
V. jugularis interna
A. carotis communis
A. cervicalis ascendens
N. phrenicus
M. scalenus anterior
A. thyroidea inferior
A. cervicalis superficialis
A. suprascapularis
A. dorsalis scapulae
Truncus costocervicalis
Truncus thyrocervicalis
A., v. subclavia
Glandula thyroidea
Ganglion cervicale medium trunci sympathici
N. vagus (X)
A. vertebralis
A. carotis communis
N. laryngeus recurrens
Truncus brachiocephalicus
V. jugularis interna
Схема ветвей правой подключичной артерии, вид сбоку
A. vertebralis
A. cervicalis profunda
Truncus costocervicalis
A. intercostalis suprema
A. intercostalis posterior I
A. intercostalis posterior II
Scapula
A. carotis externa
A. carotis interna
A. cervicalis ascendens
A. thyroidea inferior
A. transversa cervicis
A. carotis communis
Truncus thyrocervicalis
A. suprascapularis
A. subclavia (1-я часть расположена медиальнее, 2-я - позади, 3-я - латеральнее от m. scalenus anterior)
A. thoracica interna

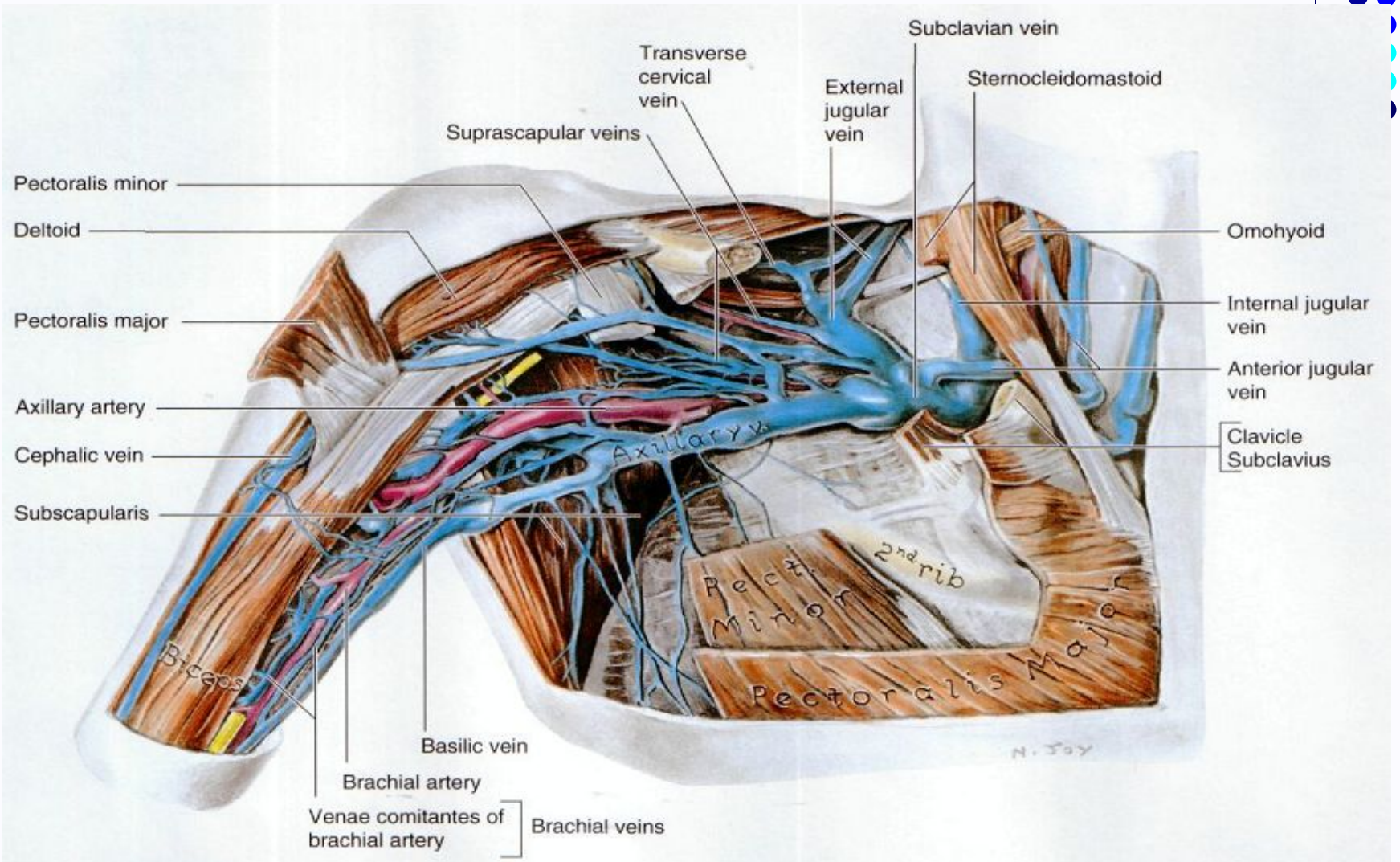
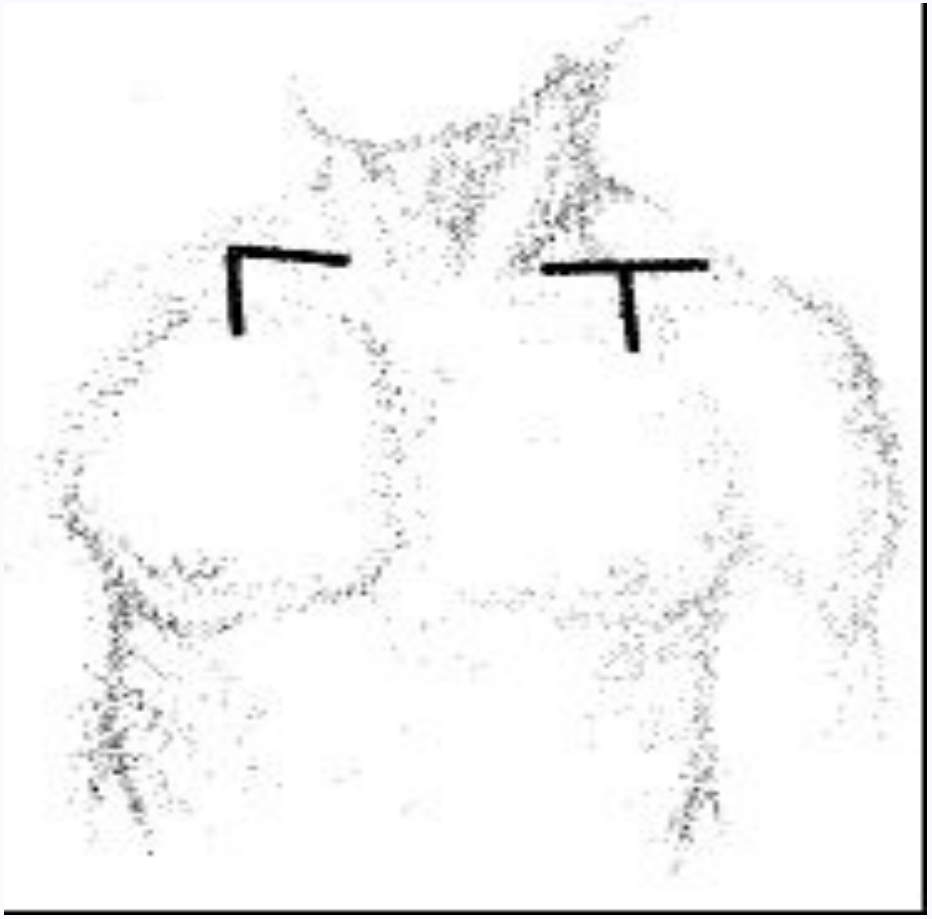


Figure 6.26. Veins of the axilla. Anterior view. Observe that the basilic vein parallels the brachial artery to the axilla, where it merges with the accompanying veins (L. venae comitantes) of the axillary artery to form the axillary vein. Notice also the large number of highly variable veins in the axilla, which are also tributaries of the axillary vein.

- **SURGICAL APPROACHES TO A.SUBCLAVIA**
- After Dzhanelidze
- After Petrovsky



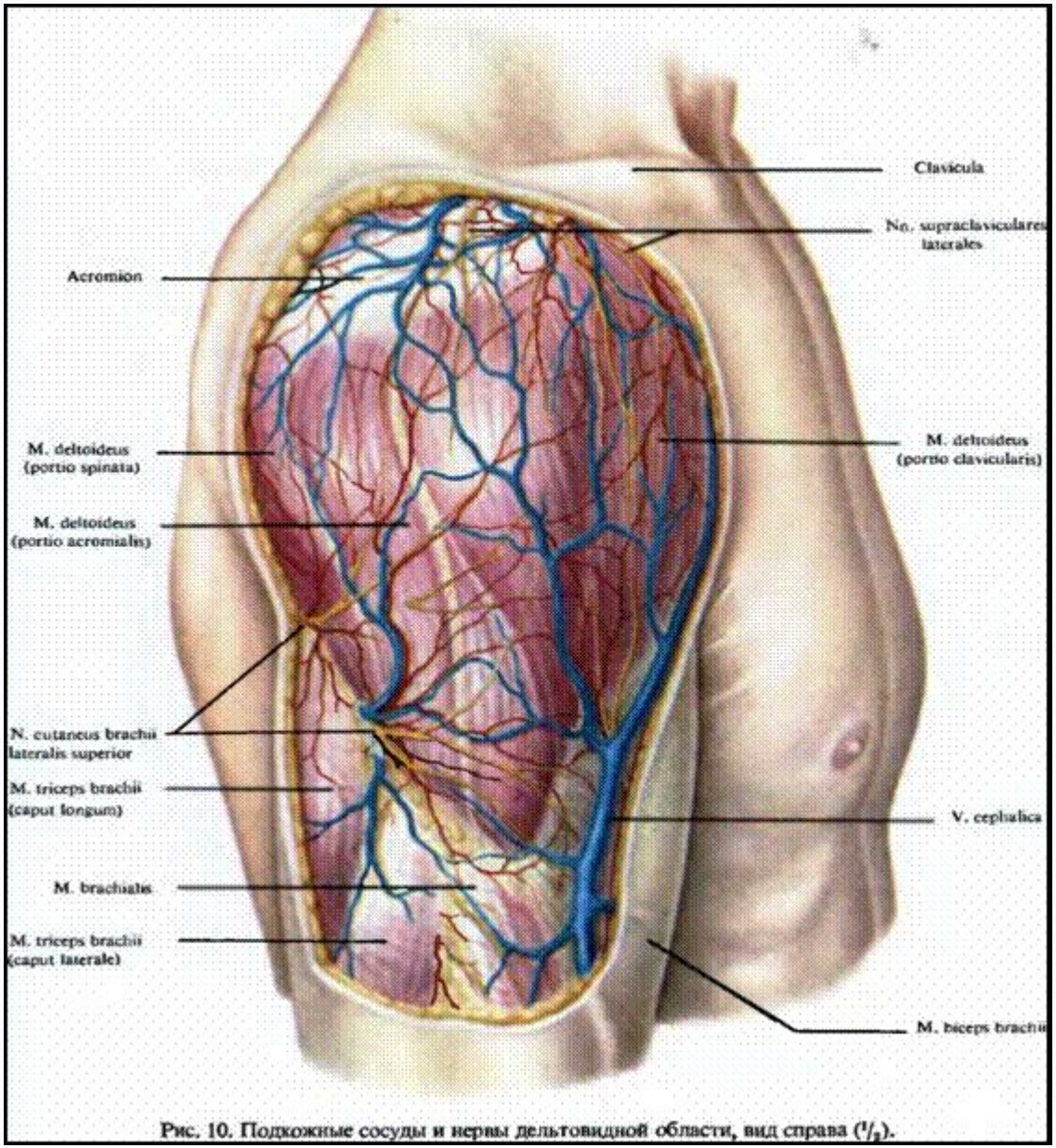
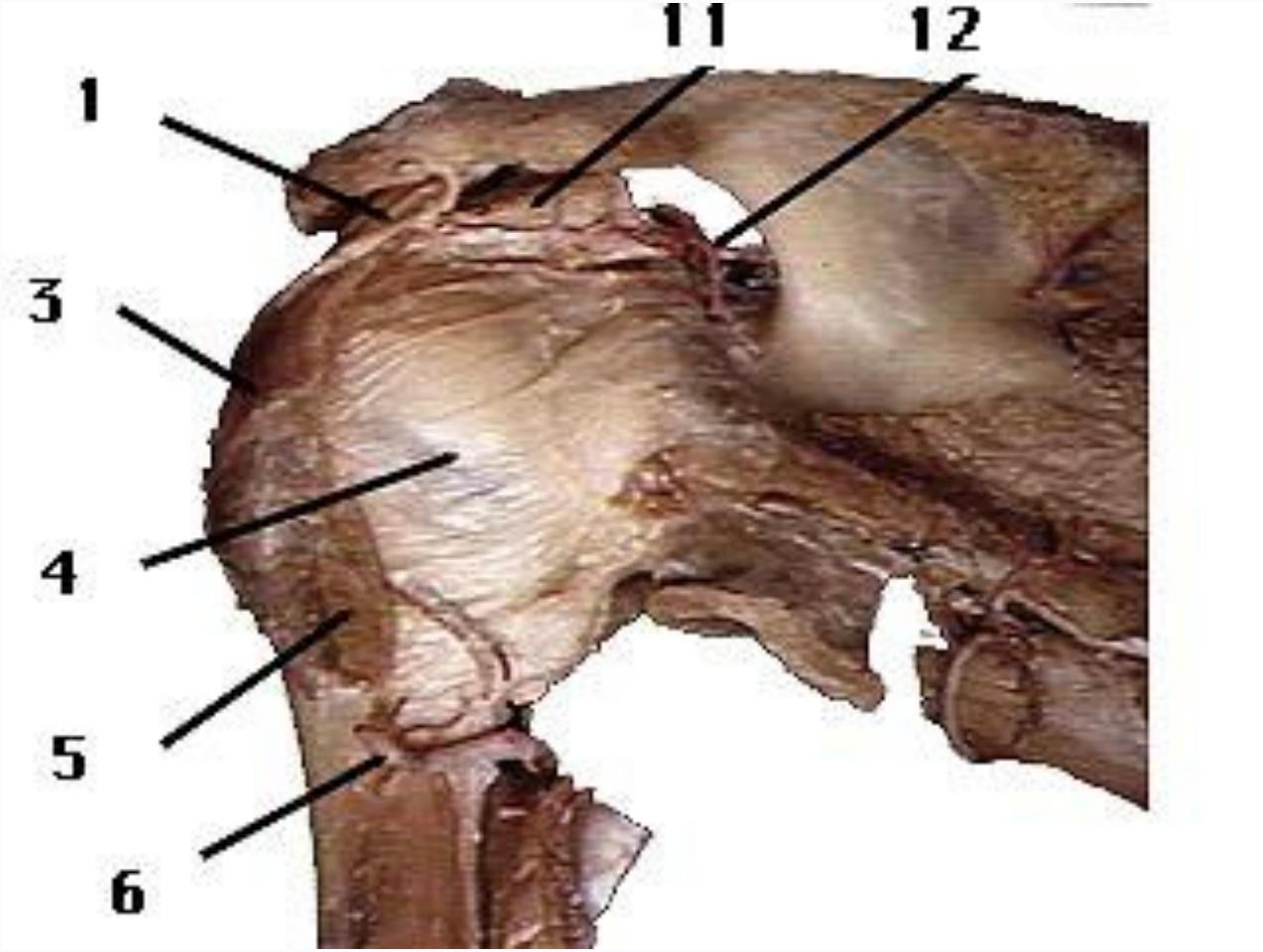


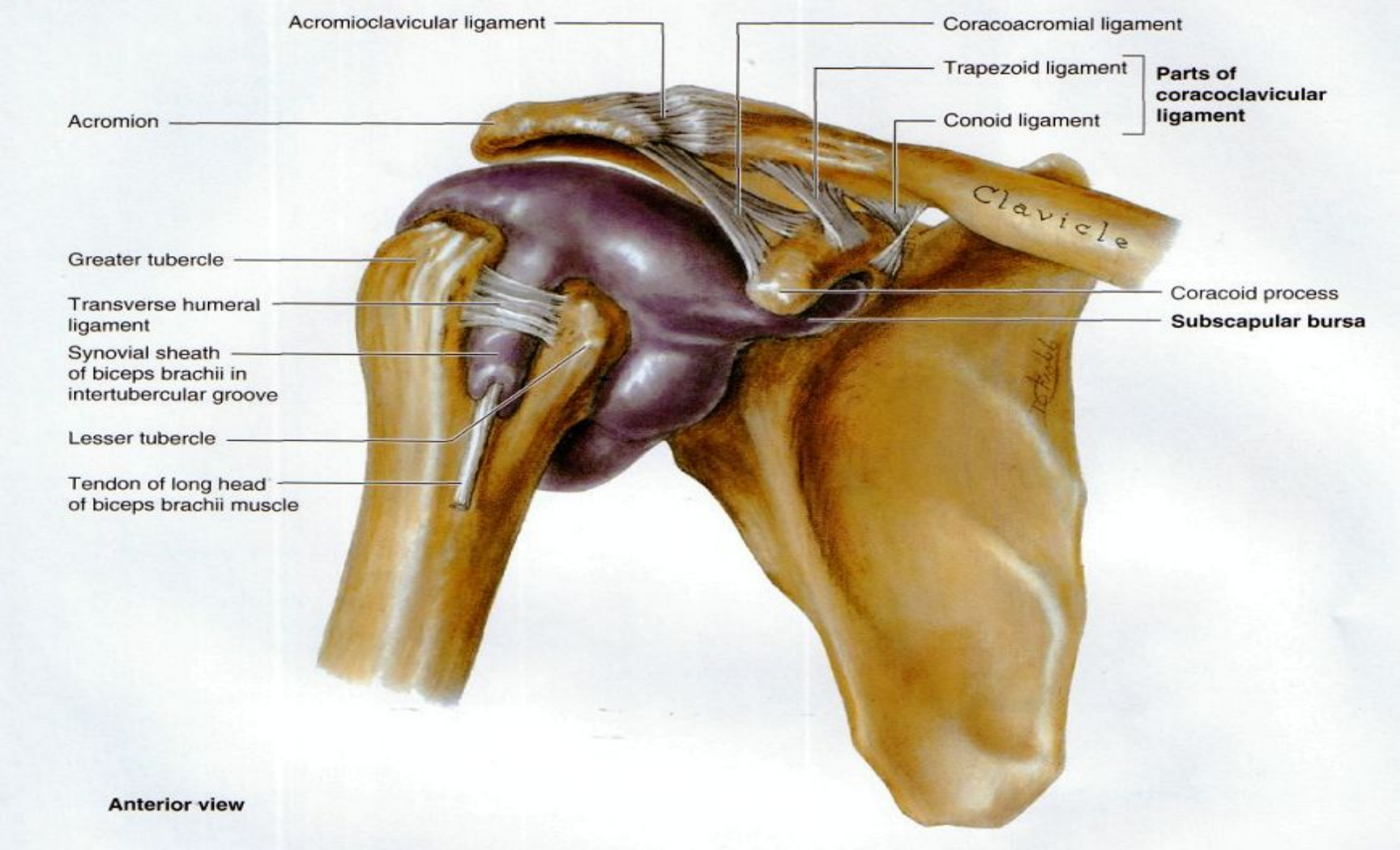
Рис. 10. Подкожные сосуды и нервы дельтовидной области, вид справа ($^1/_2$).

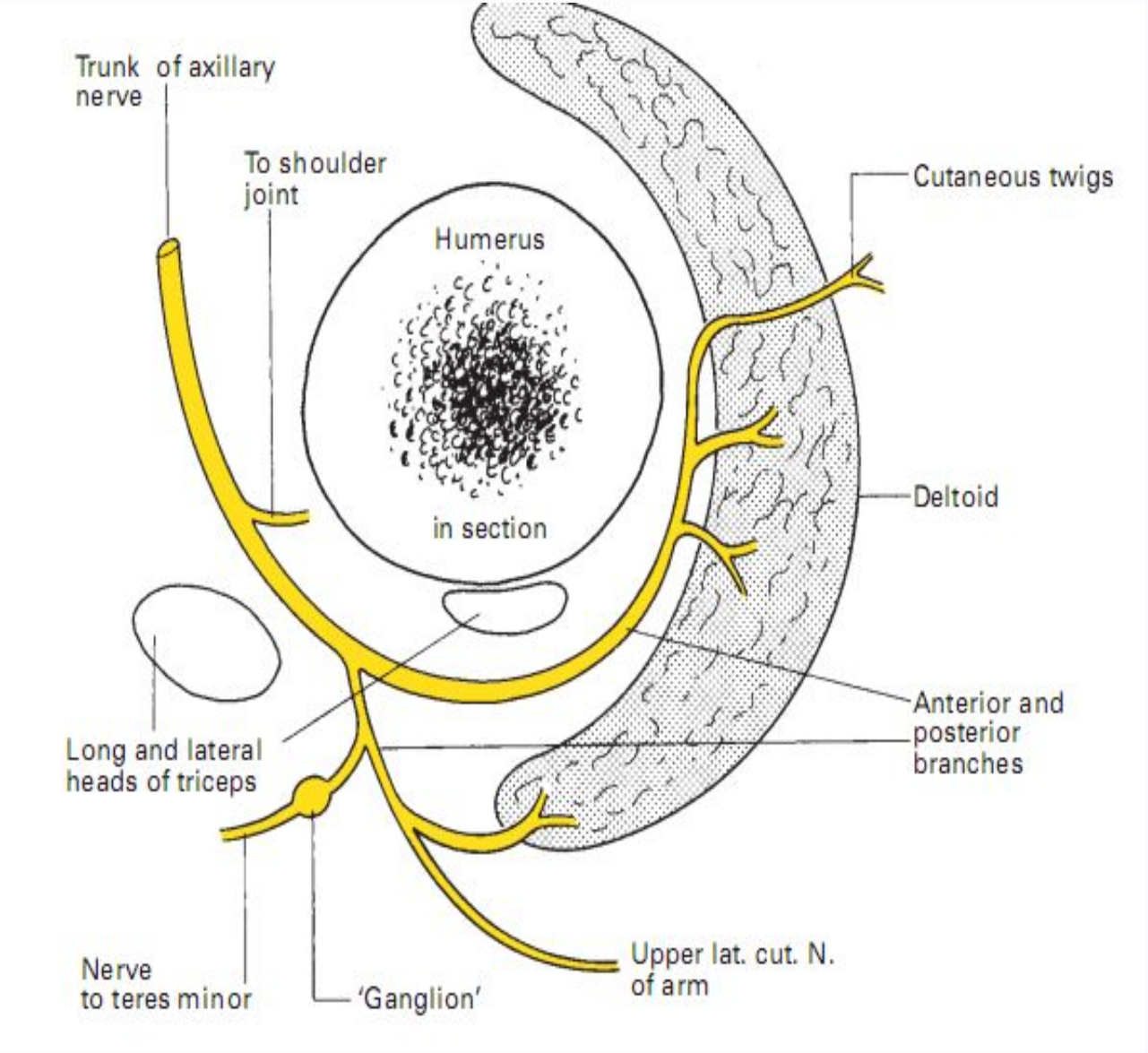
Regio deltoidea

Shoulder joint



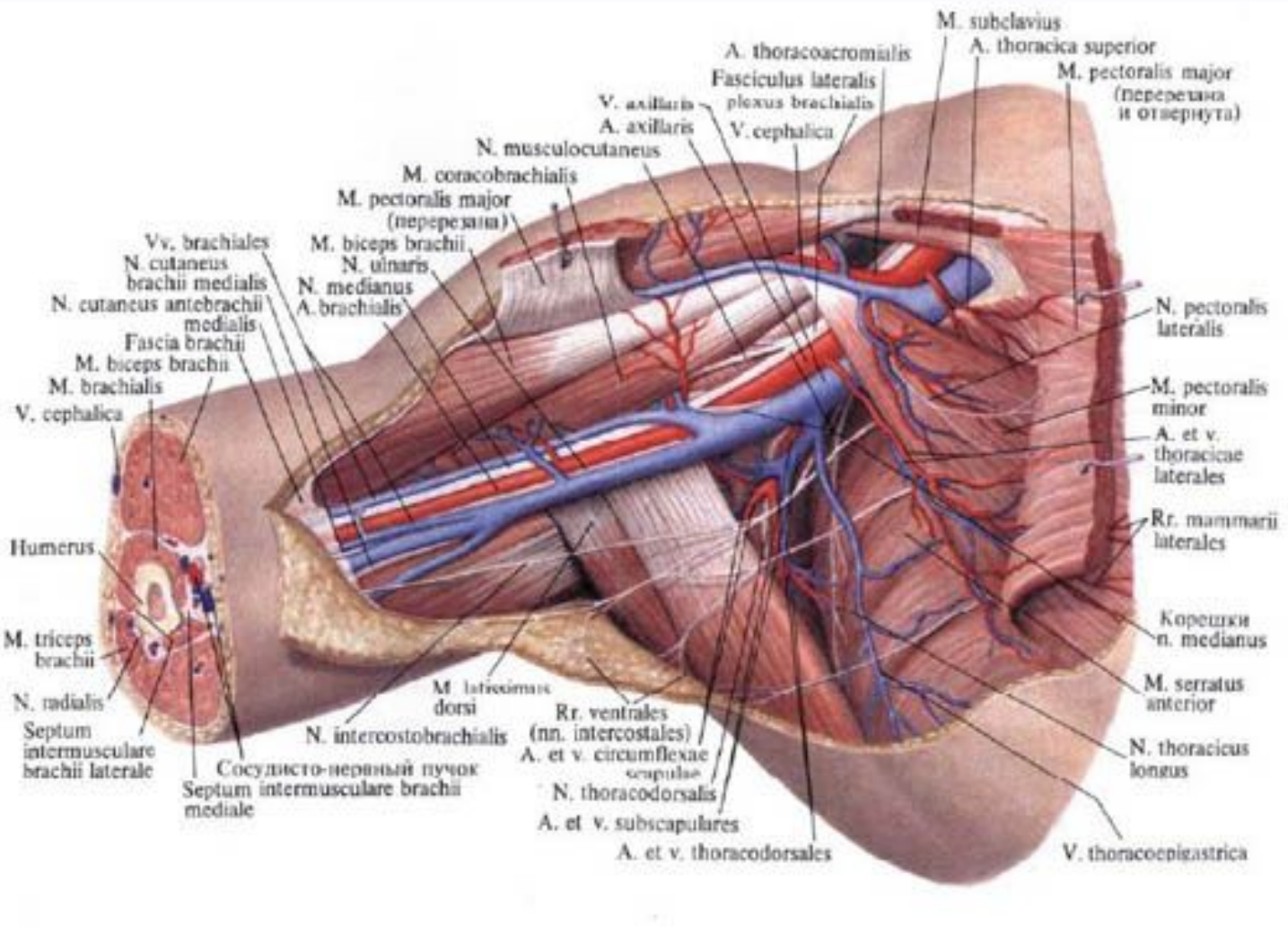
Shoulder joint

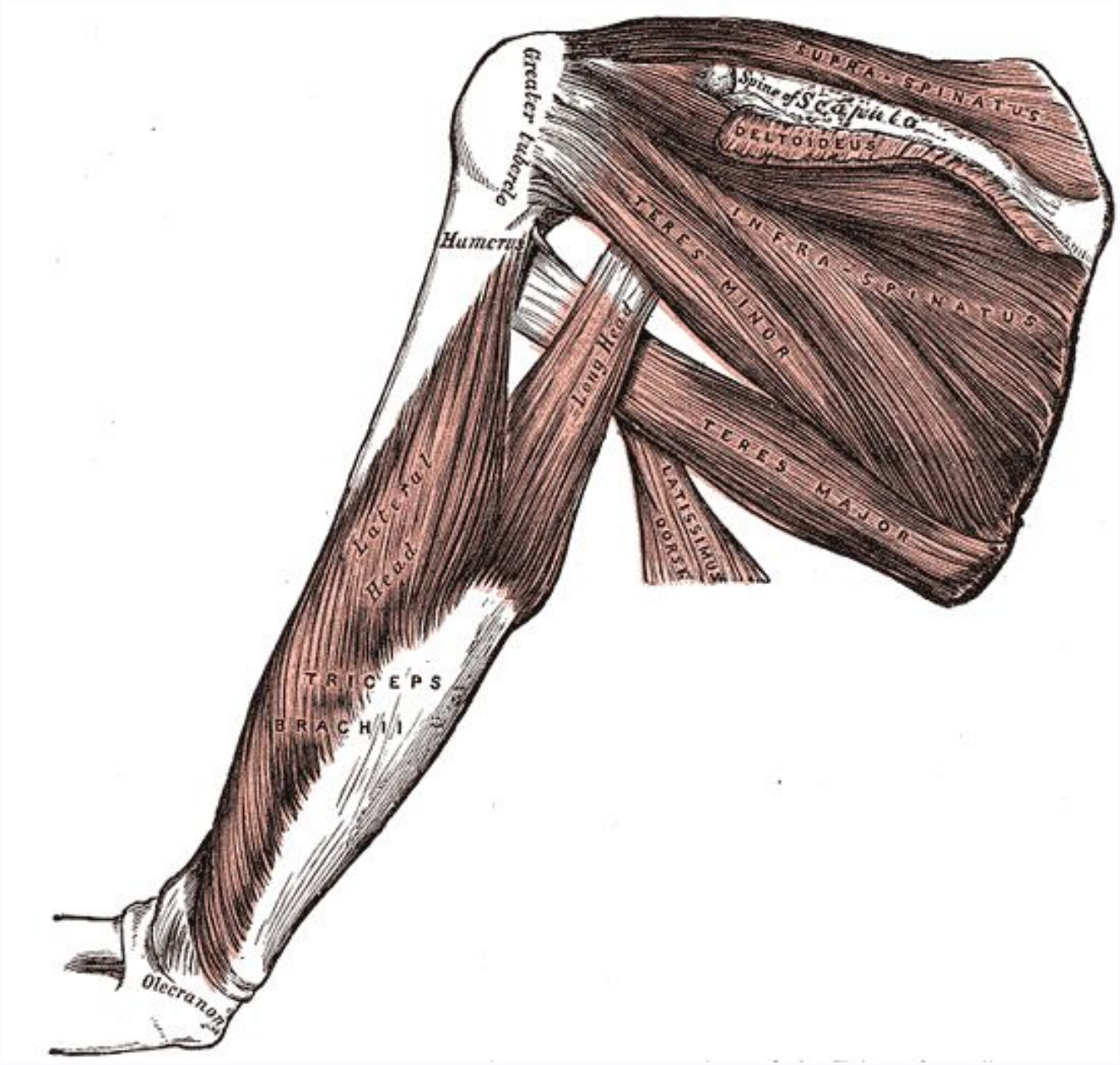


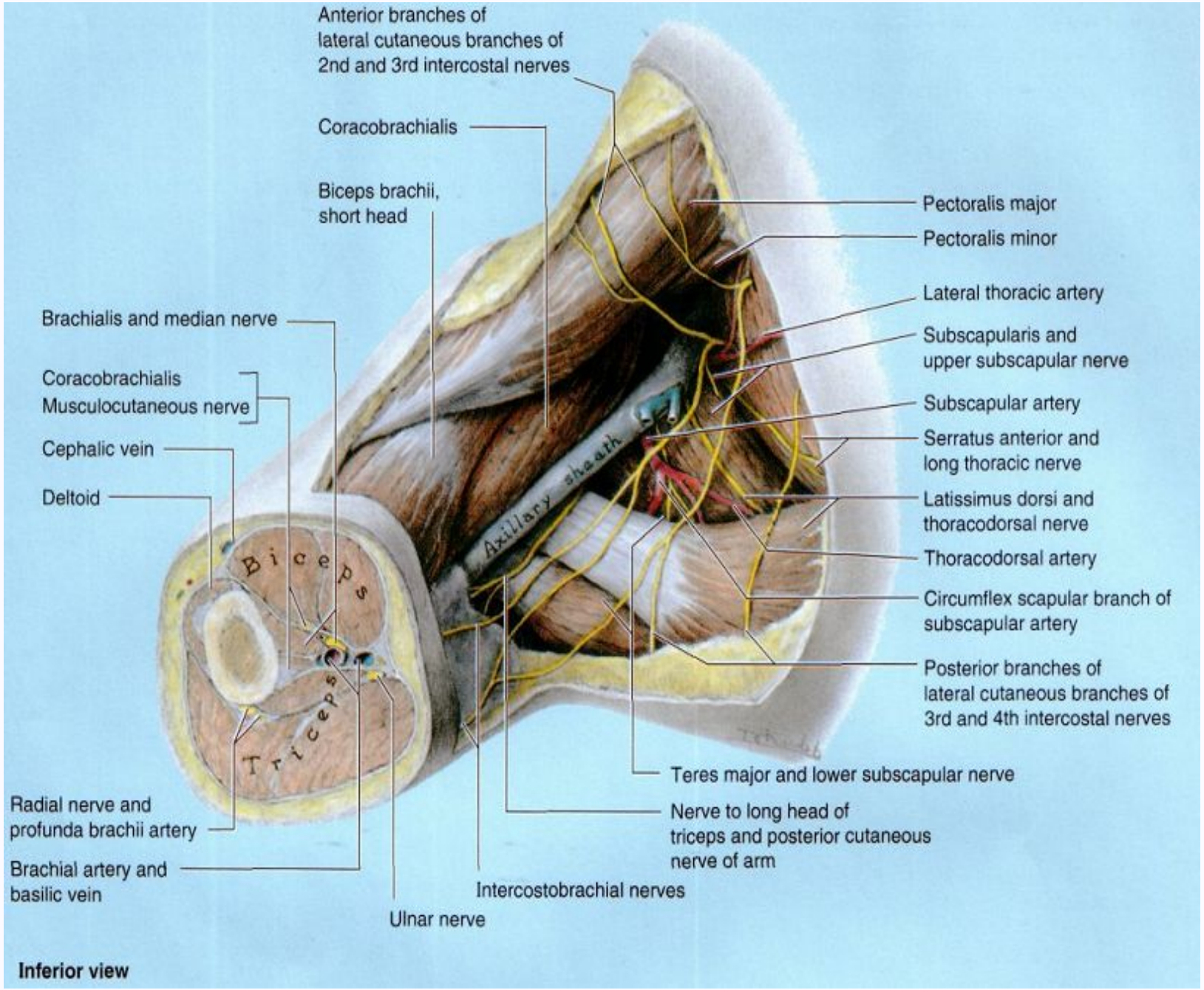


Scheme of axillary nerve

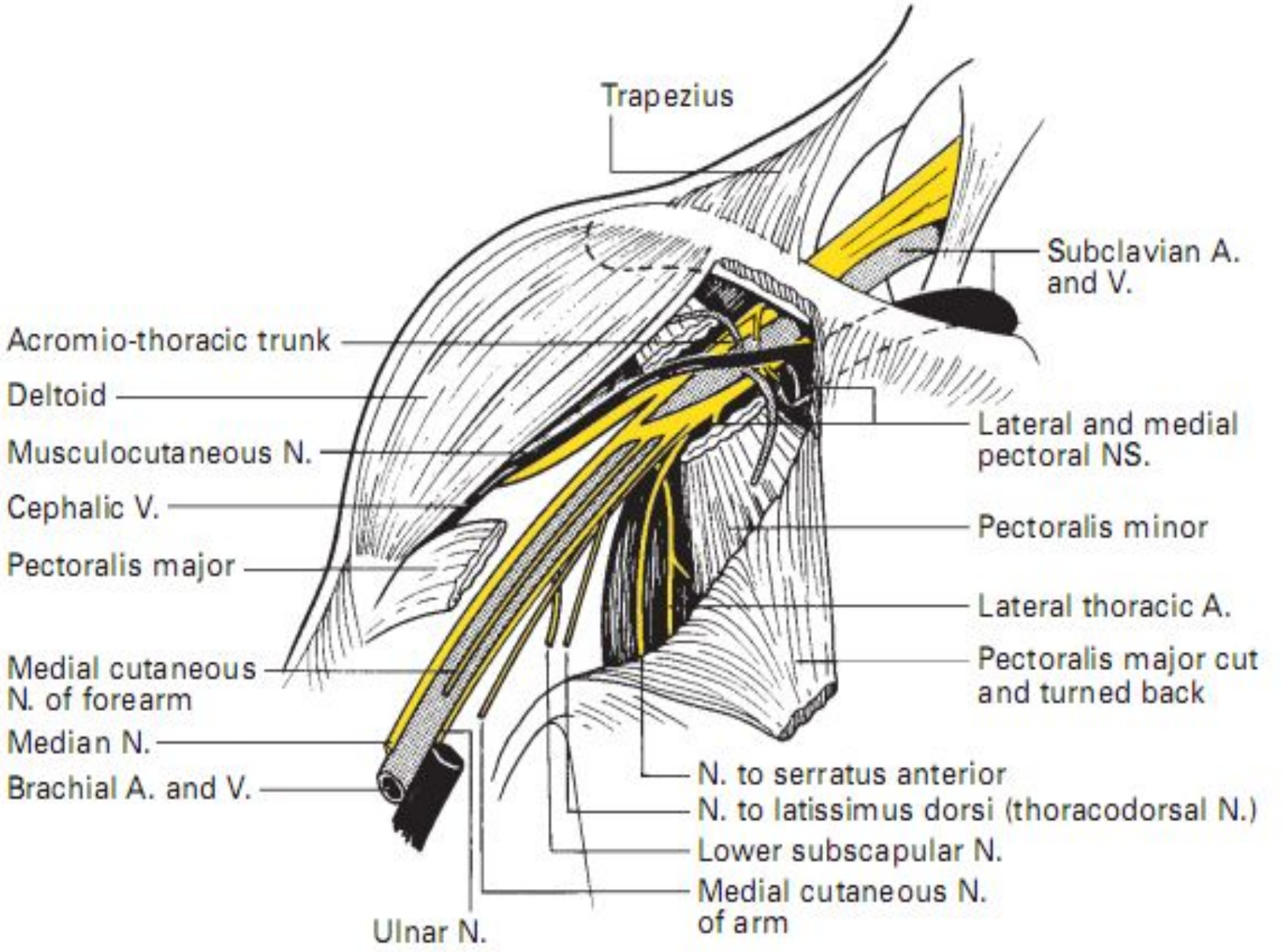
Regio axillaris




Greater tubercle
Humerus
SUPRA-SPINATUS
Spine of Scapula
DELTOIDEUS
INFRA-SPINATUS
TERES MINOR
Long Head
TERES MAJOR
LATISSIMUS DORSI
Lateral Head
TRICEPS BRACHII
Olecranon

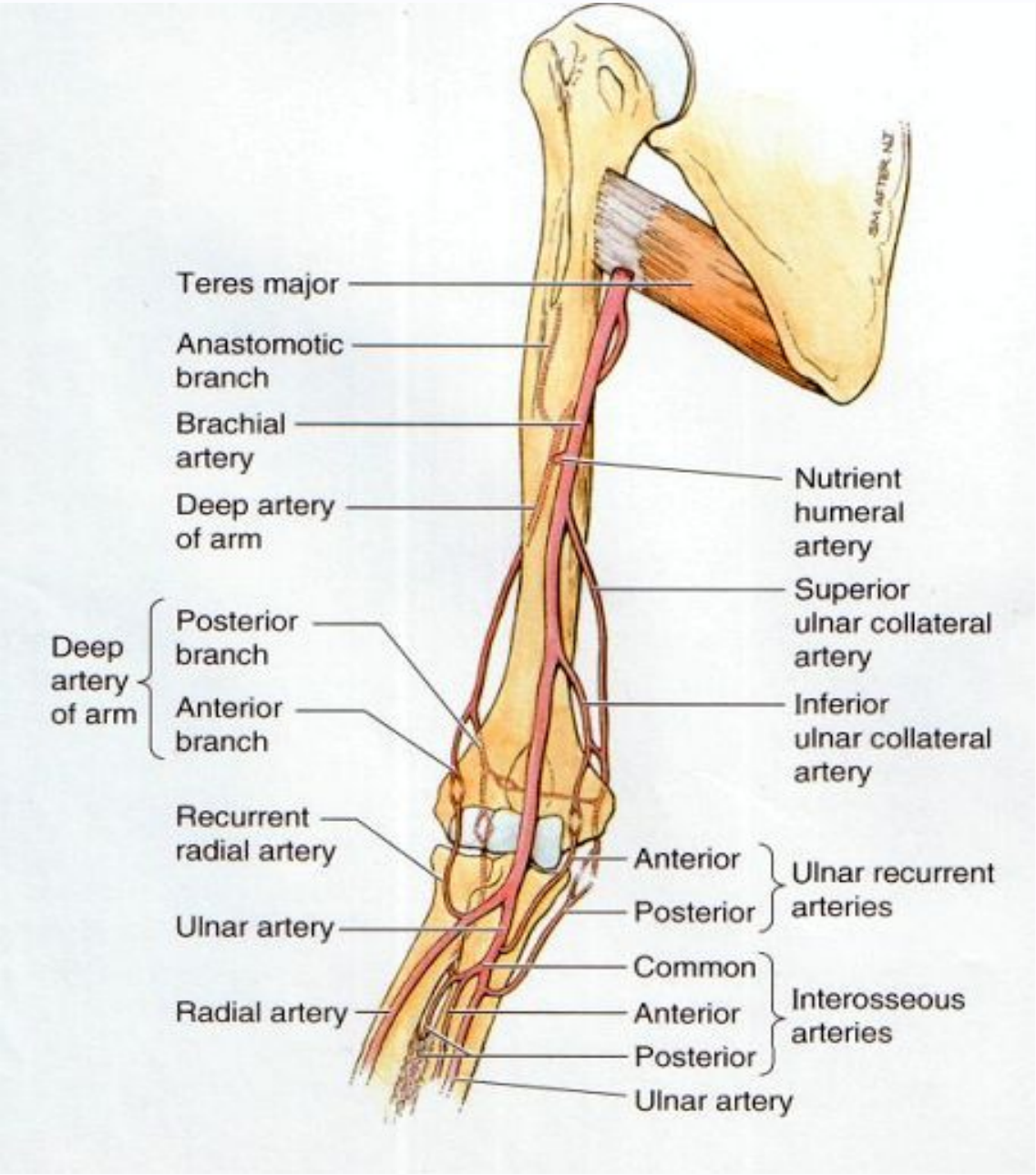


Inferior view

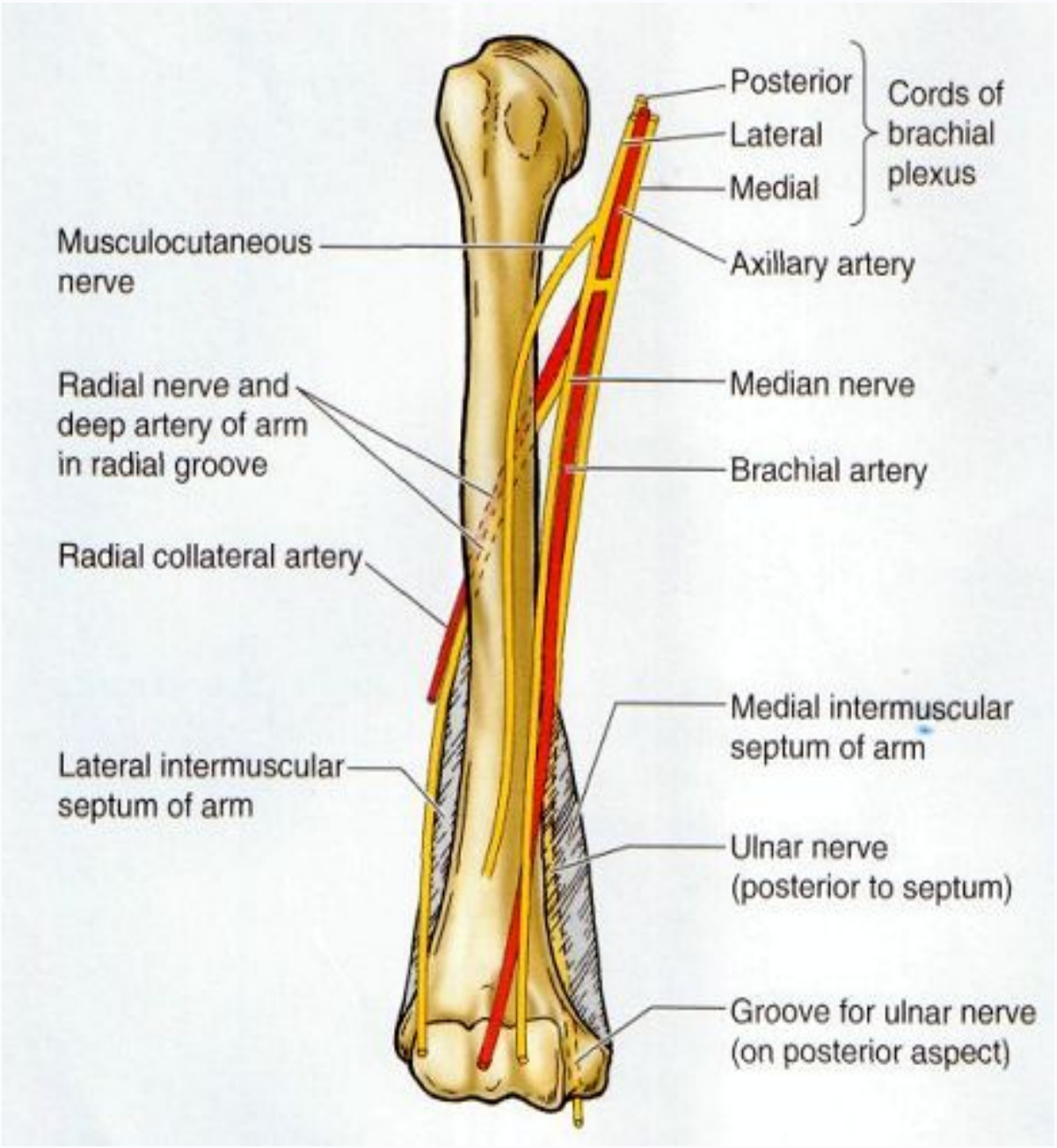

Trapezius
Subclavian A. and V.
Acromio-thoracic trunk
Deltoid
Musculocutaneous N.
Cephalic V.
Pectoralis major
Lateral and medial pectoral NS.
Pectoralis minor
Lateral thoracic A.
Pectoralis major cut and turned back
Medial cutaneous N. of forearm
Median N.
Brachial A. and V.
N. to serratus anterior
N. to latissimus dorsi (thoracodorsal N.)
Lower subscapular N.
Medial cutaneous N. of arm
Ulnar N.

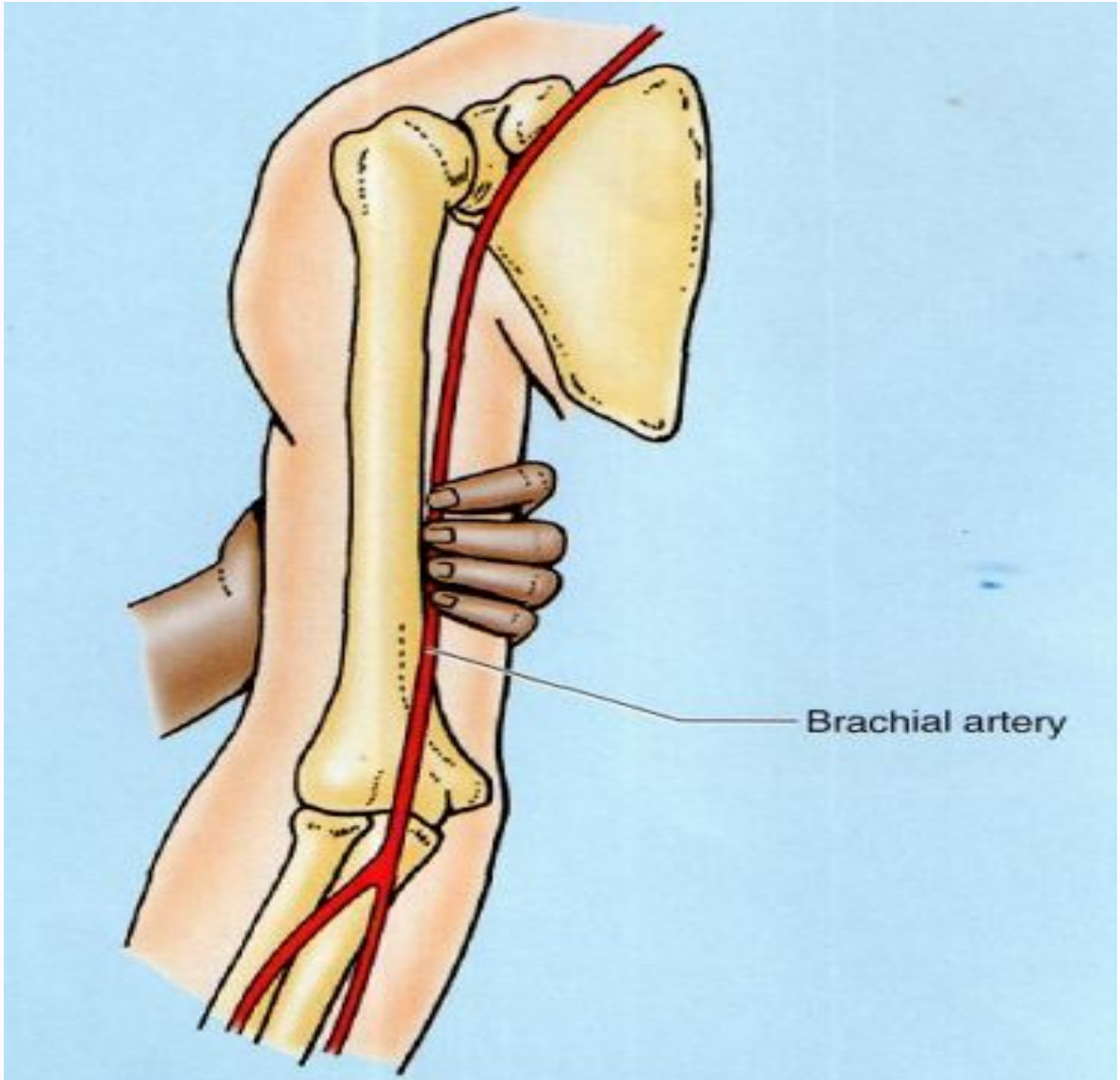
- 1 - a. axillaris, 2 - n. suprascapularis, 3 - n. subscapularis, 4 - fasciculus post., 5 - fasciculus lat., 6 - fasciculus med., 7 - v. axillaris, 8 - n. axillaris, 9 - a. subscapularis, 10 - odstup a. circumflexa humeri post., 11 - m. teres major + m. latissimus dorsi, 12 - n. musculocutaneus, 13 - a. brachialis, 14 - v. brachialis, 15 - n. radialis, 16 - n. medianus, 17 - n. cutaneus antebrachii med., 18 - n. ulnaris, 19 - m. triceps brachii, 20 - m. biceps brachii

Regio brachii posterior



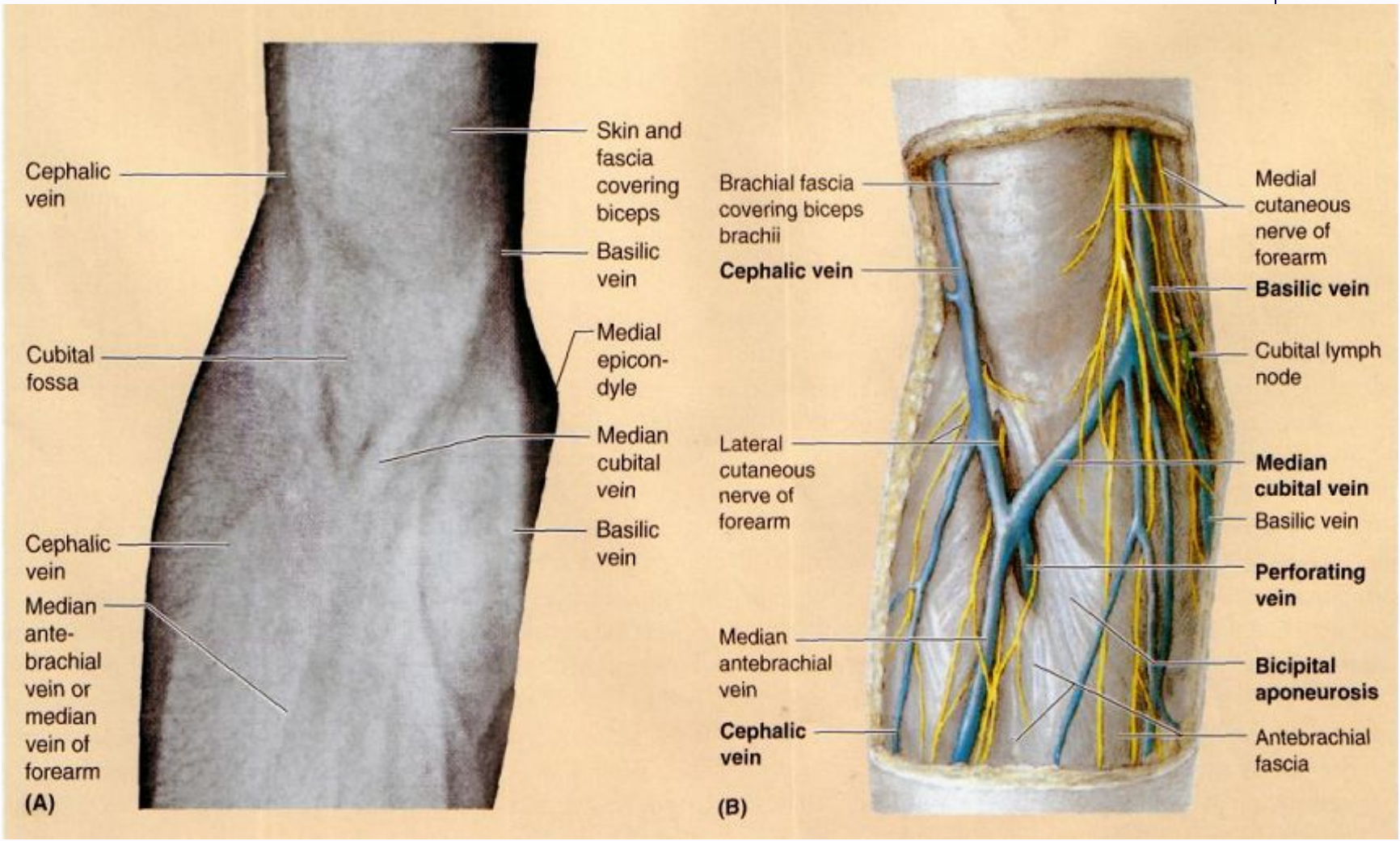
Arteries of the arm


Posterior
Lateral
Medial
Cords of brachial plexus
Musculocutaneous nerve
Axillary artery
Radial nerve and deep artery of arm in radial groove
Median nerve
Brachial artery
Radial collateral artery
Medial intermuscular septum of arm
Lateral intermuscular septum of arm
Ulnar nerve (posterior to septum)
Groove for ulnar nerve (on posterior aspect)



Compression of brachial artery

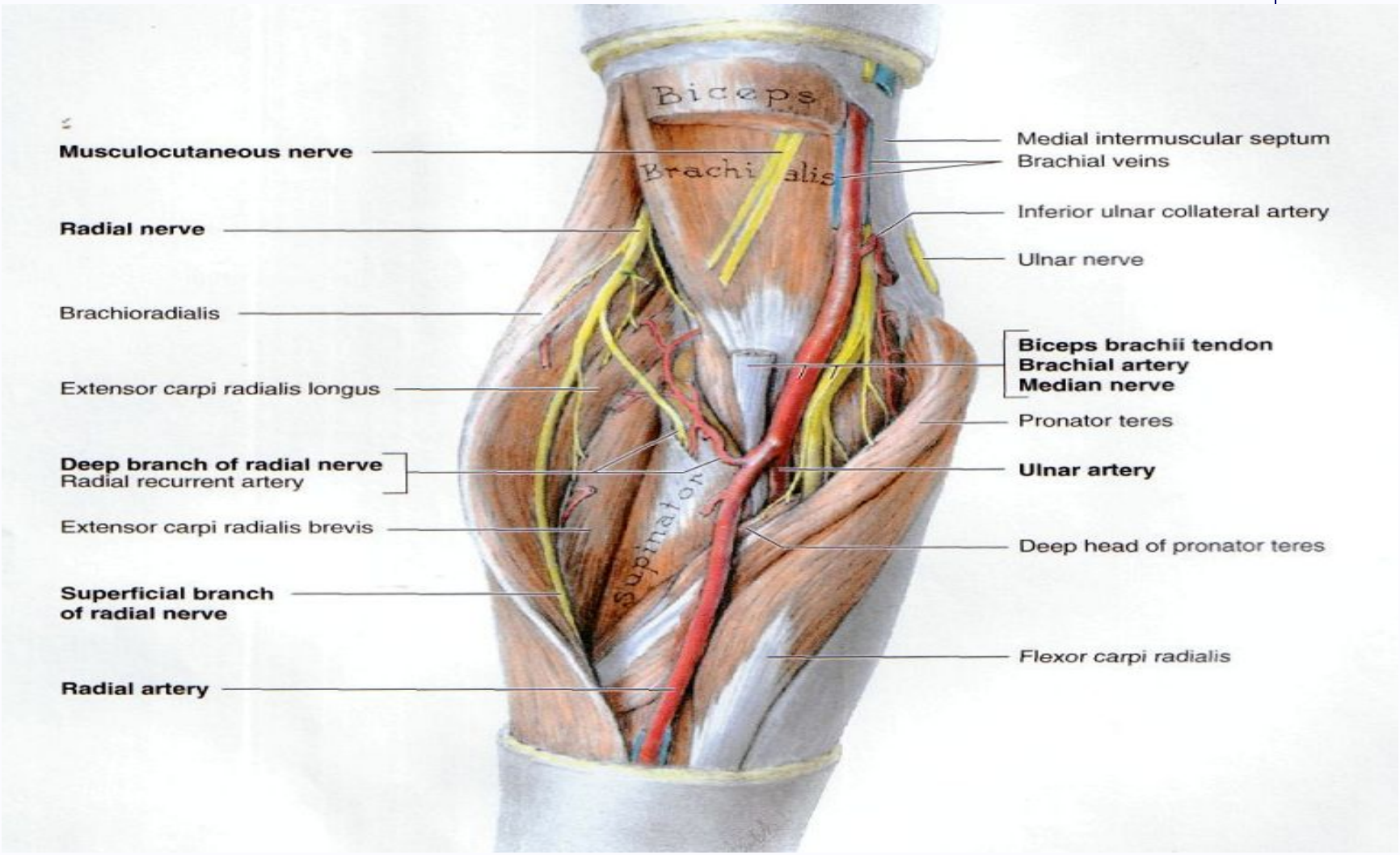
Regio cubiti anterior



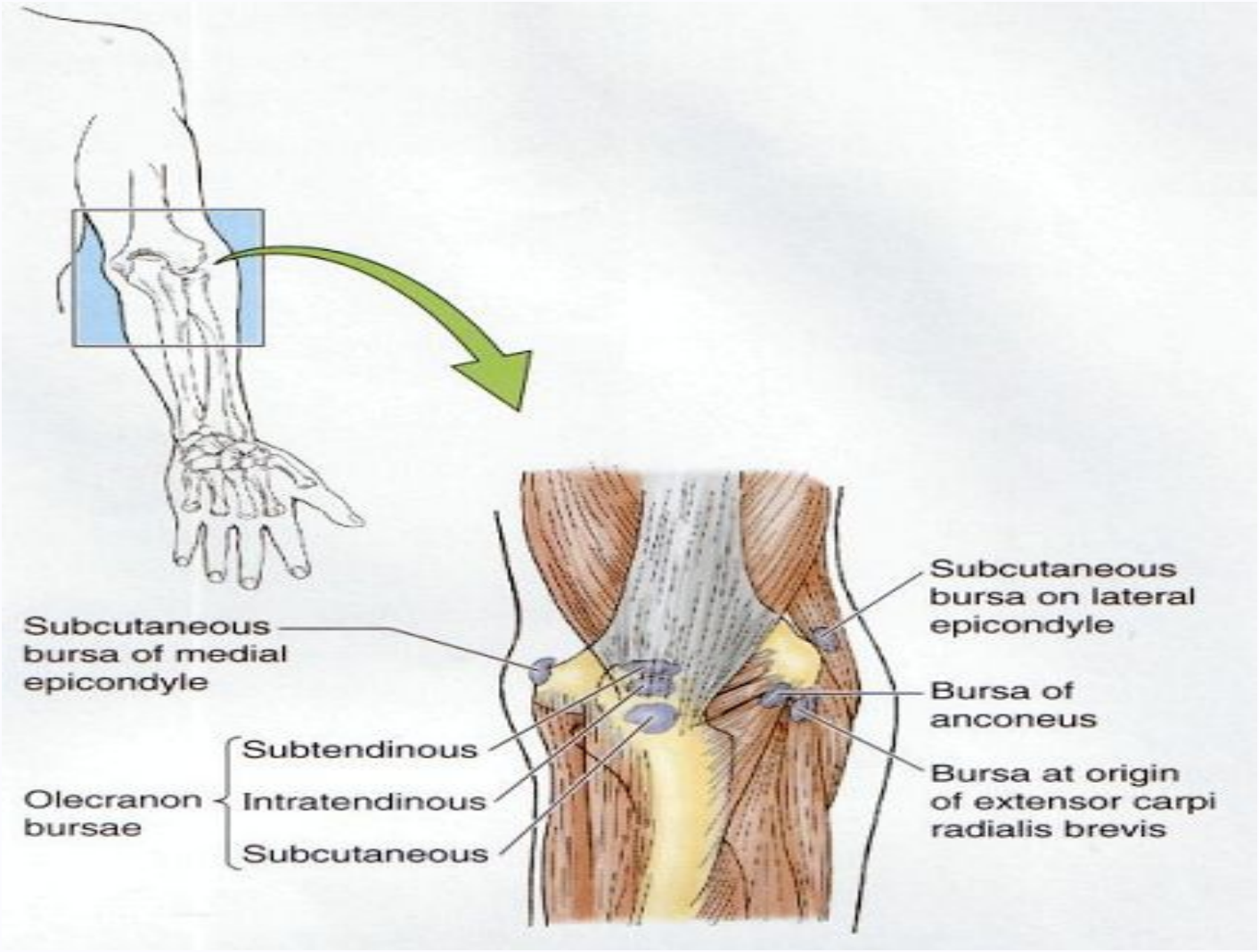
Regio cubiti

- 1 - m. biceps brachii, 2 - úponová šlacha m. biceps brachii, 3 - lacertus fibrosus, 4 - m. brachioradialis, 5 - svaly mediálního epikondylu, 6 - v. basilica, 7 - n. medianus, 8 - a. brachialis, 9 - v. mediana cubiti, 10 - n. cutaneus antebrachii lat.

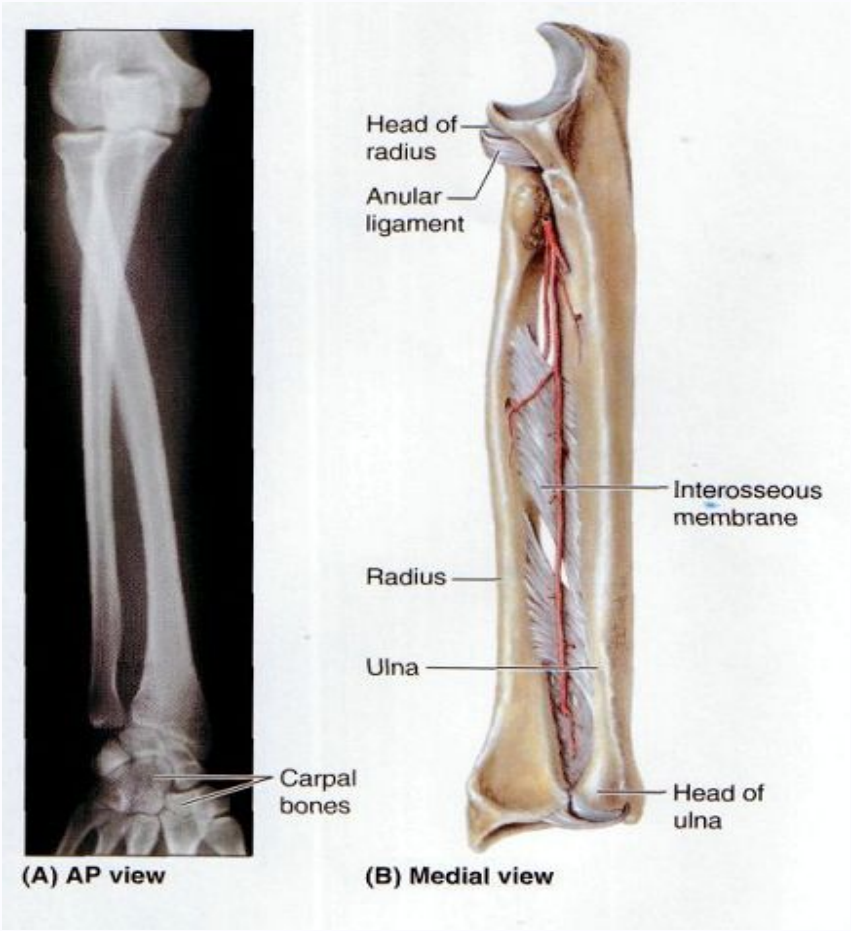
Fossa cubiti

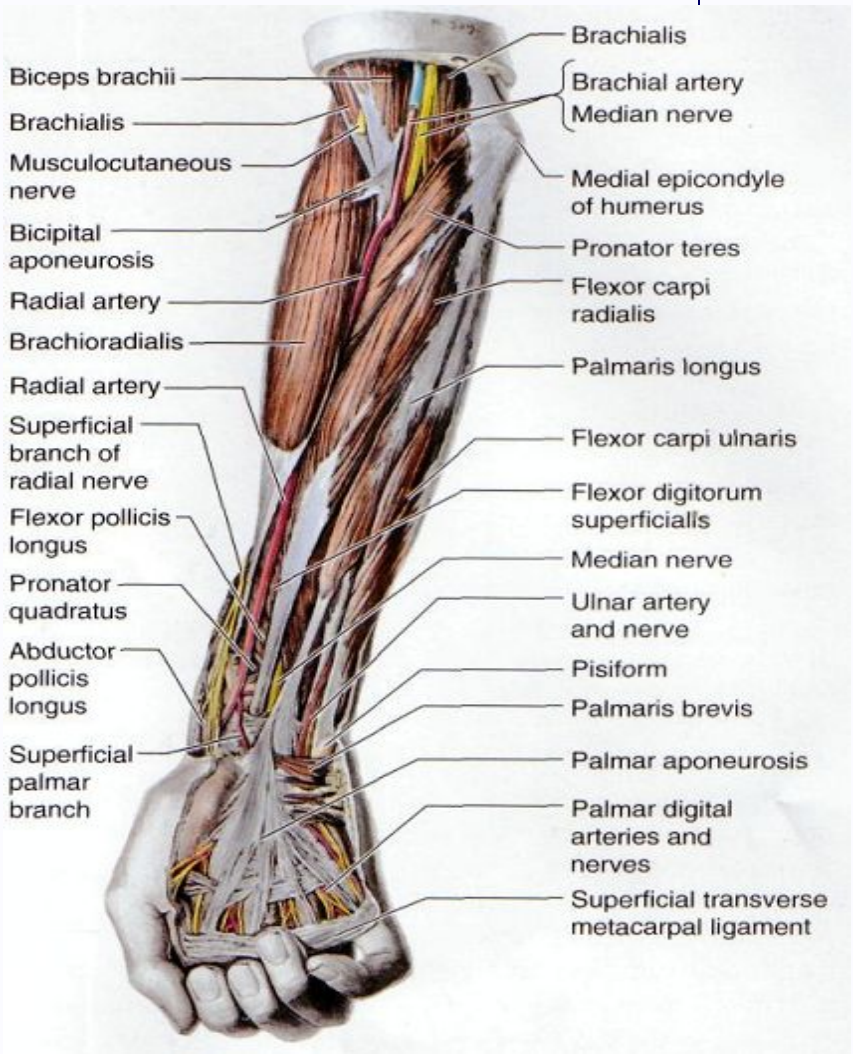


Bursas of the elbow joint



Forearm


Head of radius
Anular ligament
Interosseous membrane
Radius
Ulna
Carpal bones
Head of ulna
(A) AP view
(B) Medial view


Biceps brachii
Brachialis
Musculocutaneous nerve
Bicipital aponeurosis
Radial artery
Brachioradialis
Radial artery
Superficial branch of radial nerve
Flexor pollicis longus
Pronator quadratus
Abductor pollicis longus
Superficial palmar branch
Brachialis
Brachial artery
Median nerve
Medial epicondyle of humerus
Pronator teres
Flexor carpi radialis
Palmaris longus
Flexor carpi ulnaris
Flexor digitorum superficialis
Median nerve
Ulnar artery and nerve
Pisiform
Palmaris brevis
Palmar aponeurosis
Palmar digital arteries and nerves
Superficial transverse metacarpal ligament

Topography of the forearm and hand

Elbow fossa:

laterally – brachioradial m.,

medially – pronator teres m.,

superiorly – brachial m..

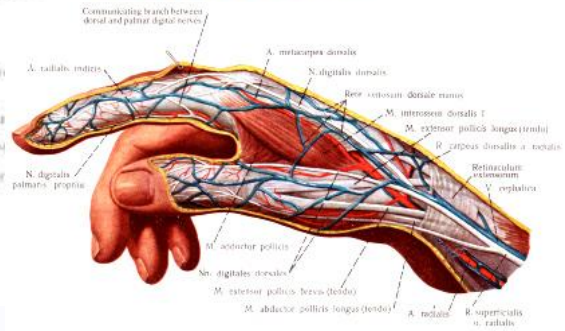
Antebrachial grooves:

Lateral = radial: between brachioradial and flexor carpi radialis mm;

Median: between flexor carpi radialis and flexor digitorum superficialis mm ;

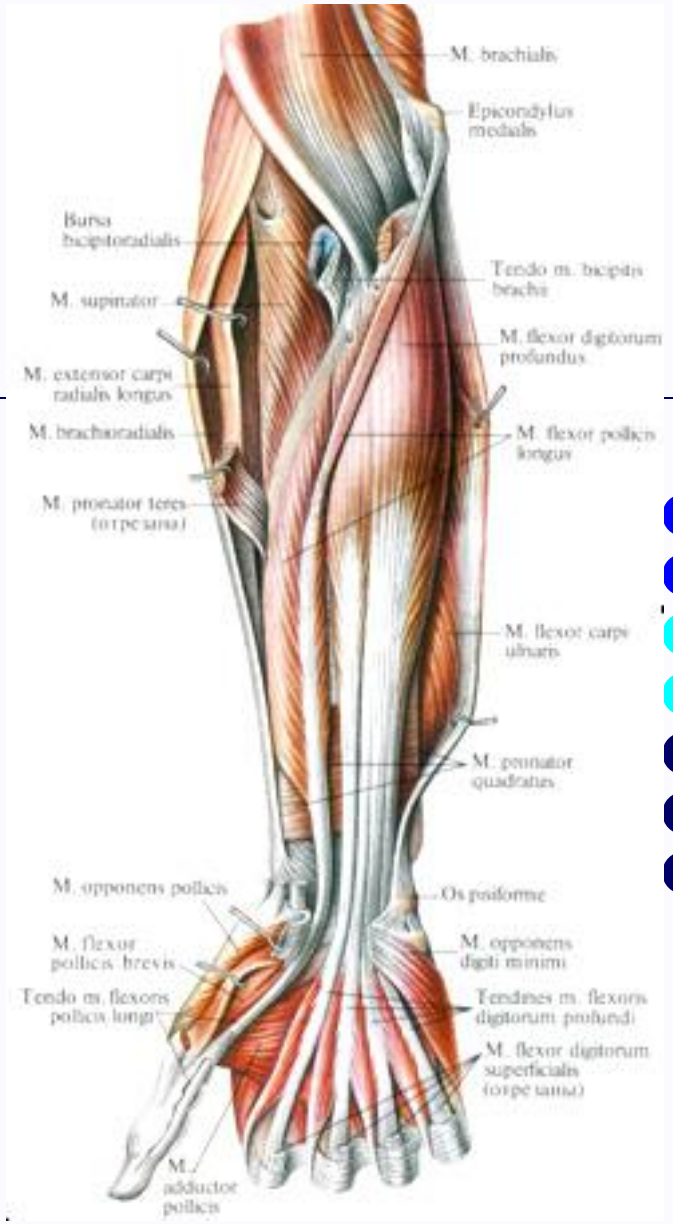
Medial = ulnar: between flexor digitorum superficialis and flexor carpi ulnaris mm .

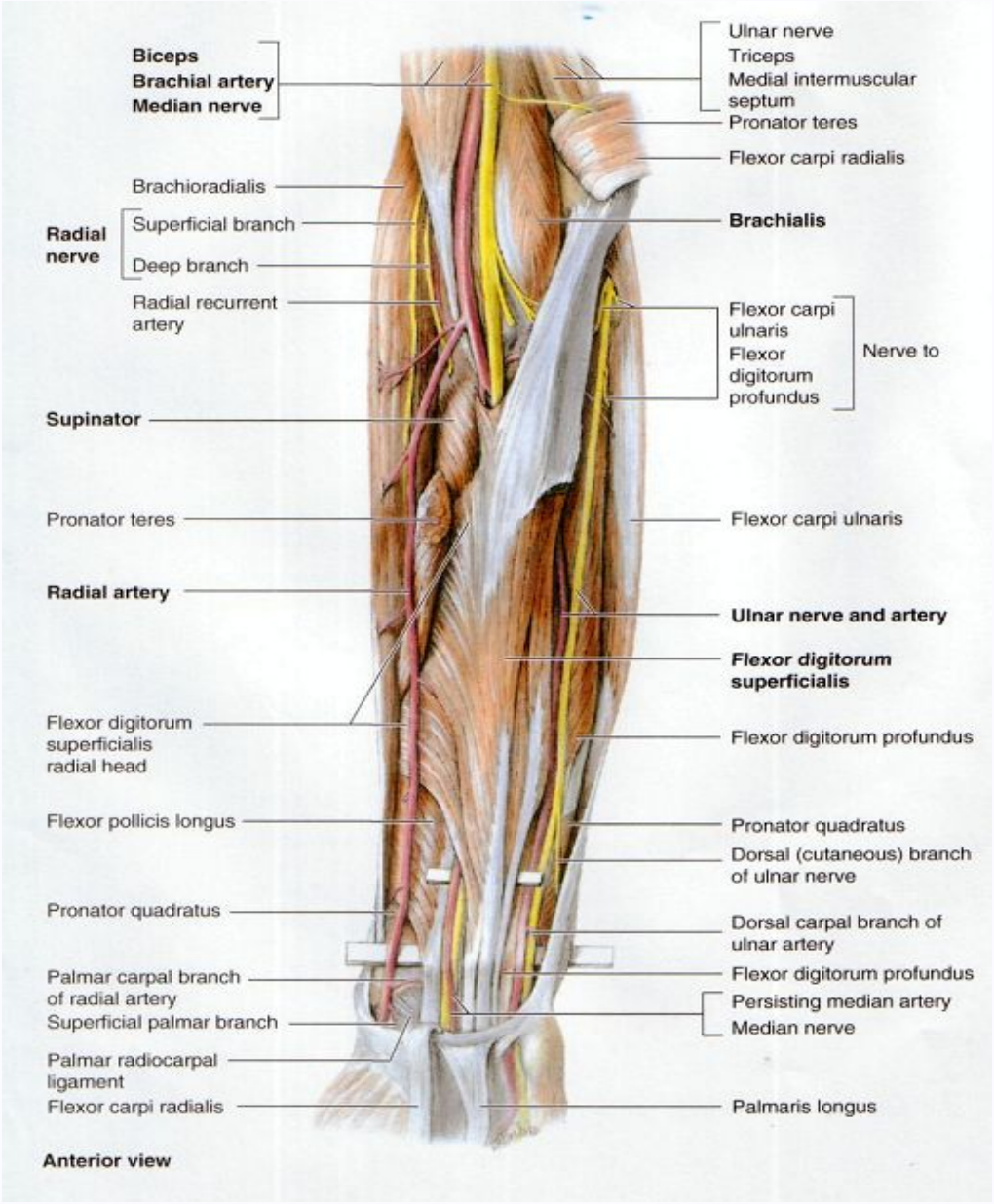
Anatomical snuff-box



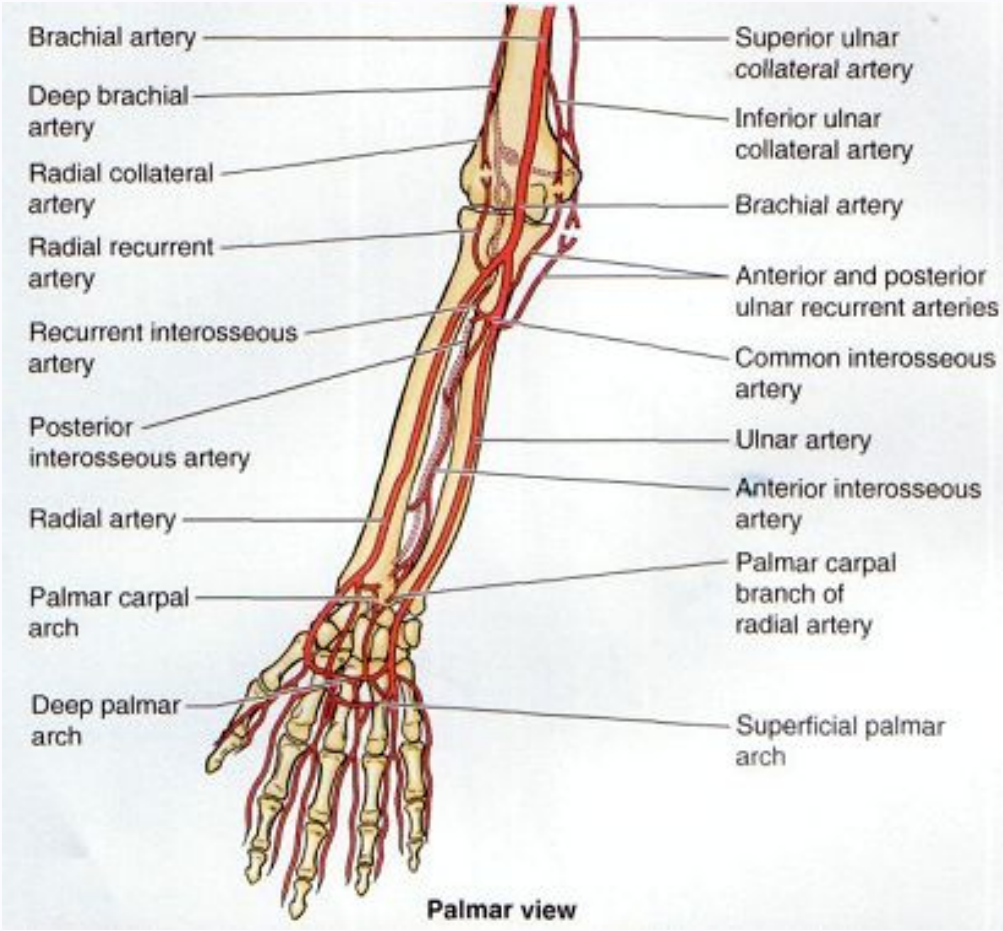
Topography of the forearm

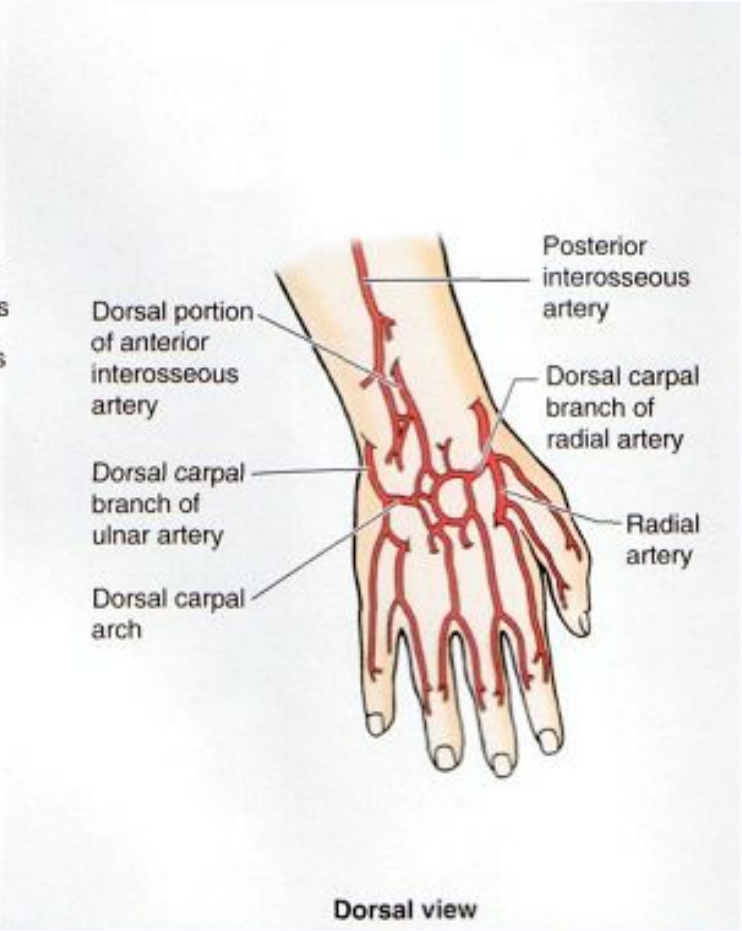
1. **Canal of the ulnar nerve: between the medial epicondyle, proximal ulna and origin of the forearm flexors**
2. **Canalis supinatorius: between the supinatorius muscle and radius**
3. **Pirogov's space: between the third and fourth layers of the forearm muscles at its distal part.**



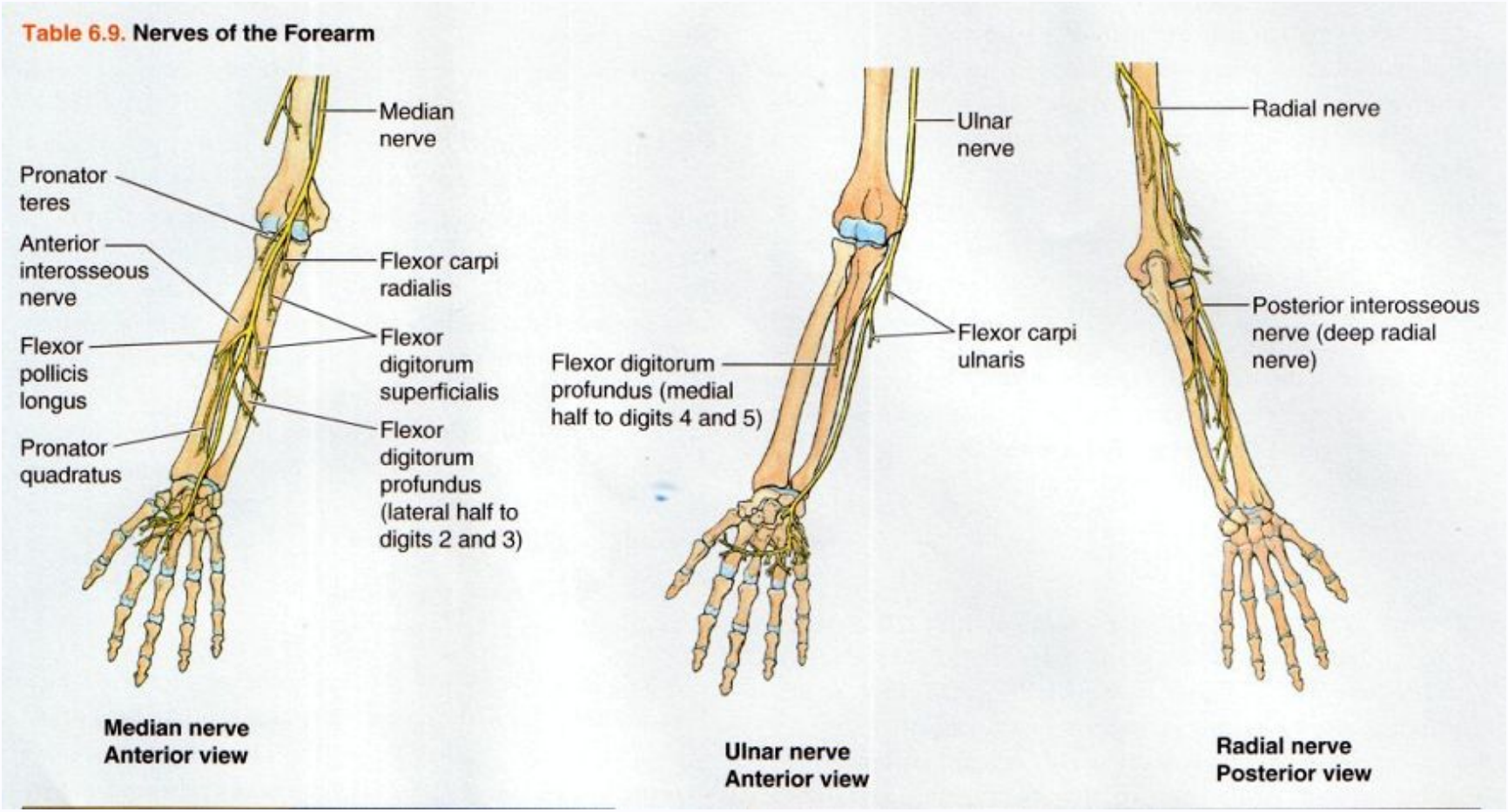


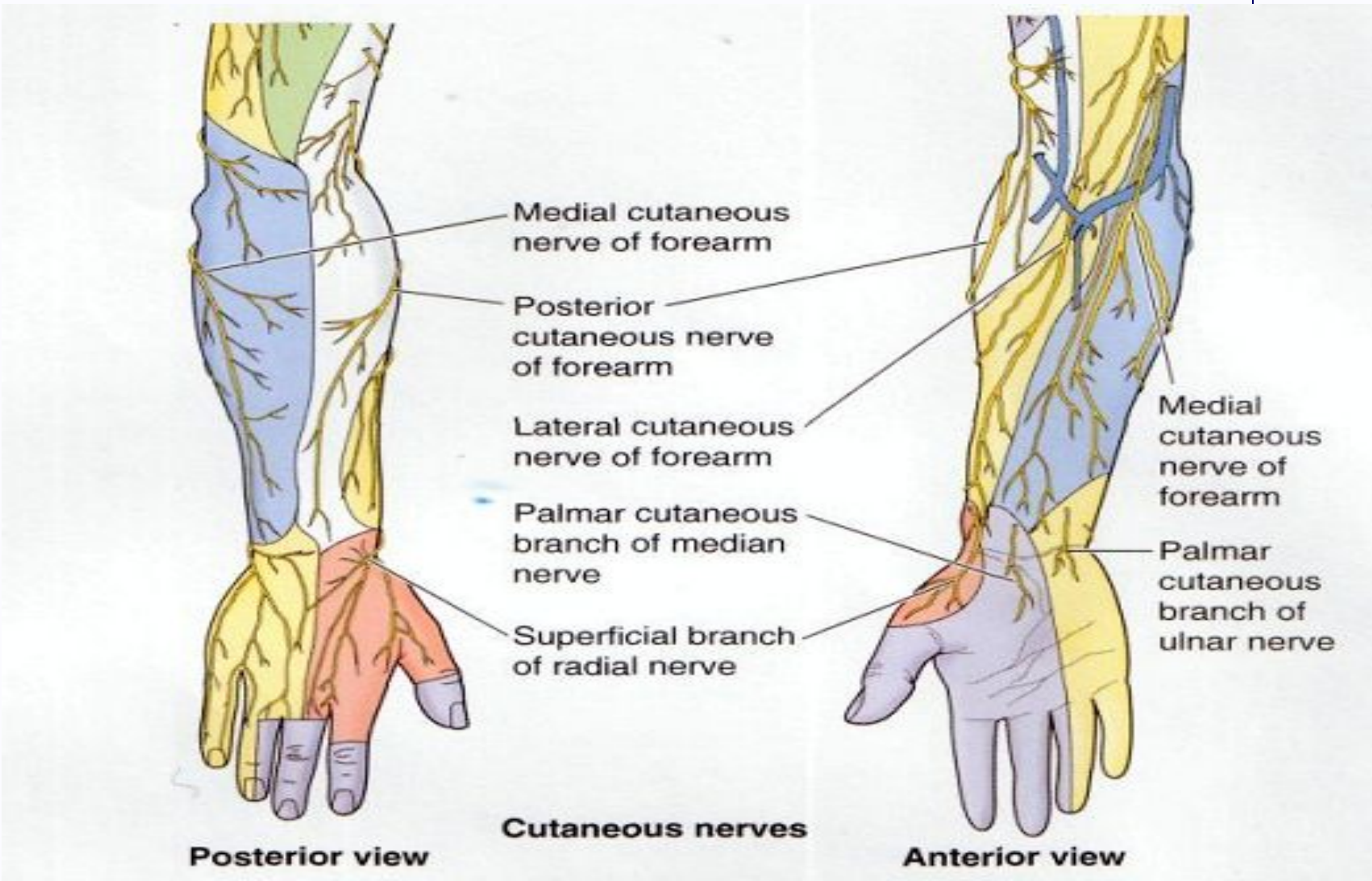
Regio antebrachii anterior

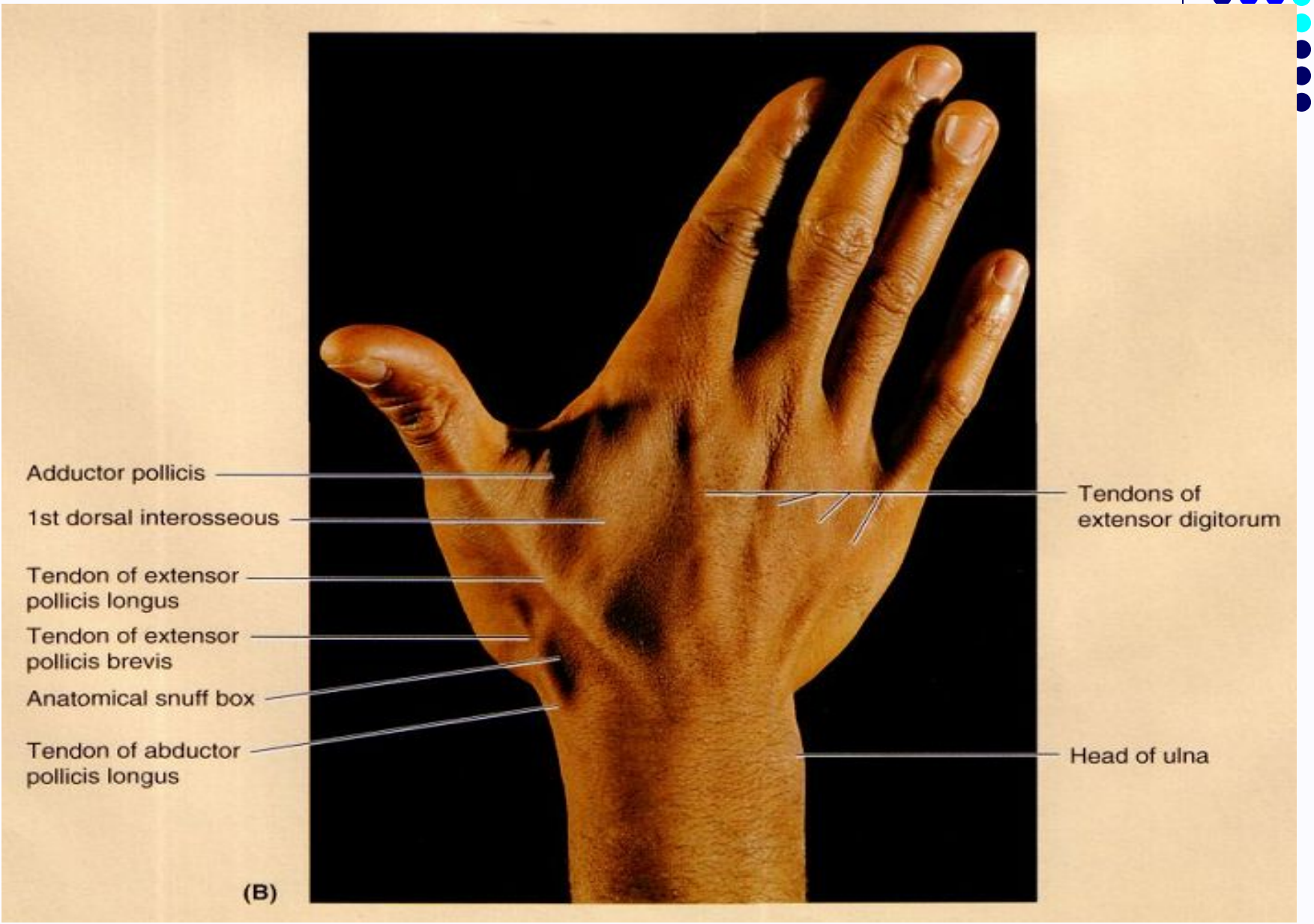

Brachial artery
Deep brachial artery
Radial collateral artery
Radial recurrent artery
Recurrent interosseous artery
Posterior interosseous artery
Radial artery
Palmar carpal arch
Deep palmar arch
Superior ulnar collateral artery
Inferior ulnar collateral artery
Brachial artery
Anterior and posterior ulnar recurrent arteries
Common interosseous artery
Ulnar artery
Anterior interosseous artery
Palmar carpal branch of radial artery
Superficial palmar arch
Palmar view


Posterior interosseous artery
Dorsal portion of anterior interosseous artery
Dorsal carpal branch of radial artery
Dorsal carpal branch of ulnar artery
Radial artery
Dorsal carpal arch
Dorsal view

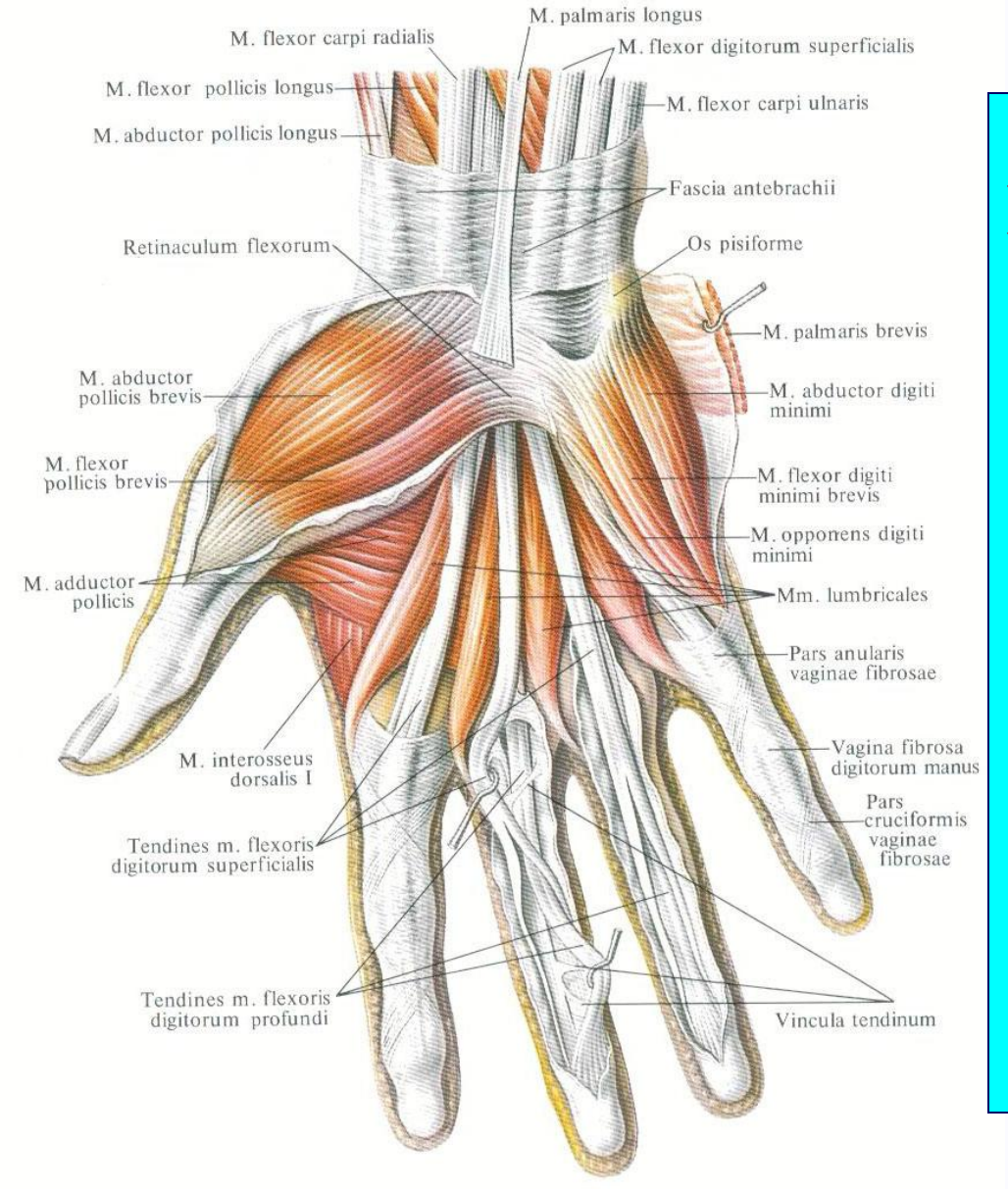
Nerves of the forearm




Medial cutaneous nerve of forearm
Posterior cutaneous nerve of forearm
Lateral cutaneous nerve of forearm
Palmar cutaneous branch of median nerve
Superficial branch of radial nerve
Medial cutaneous nerve of forearm
Palmar cutaneous branch of ulnar nerve
Posterior view
Cutaneous nerves
Anterior view


Adductor pollicis
1st dorsal interosseous
Tendon of extensor pollicis longus
Tendon of extensor pollicis brevis
Anatomical snuff box
Tendon of abductor pollicis longus
Tendons of extensor digitorum
Head of ulna
(B)

Retinaculi of the upper limb



Retinaculum flexorum

Canalis carpi radialis:

- tendon m. flexor carpi radialis.

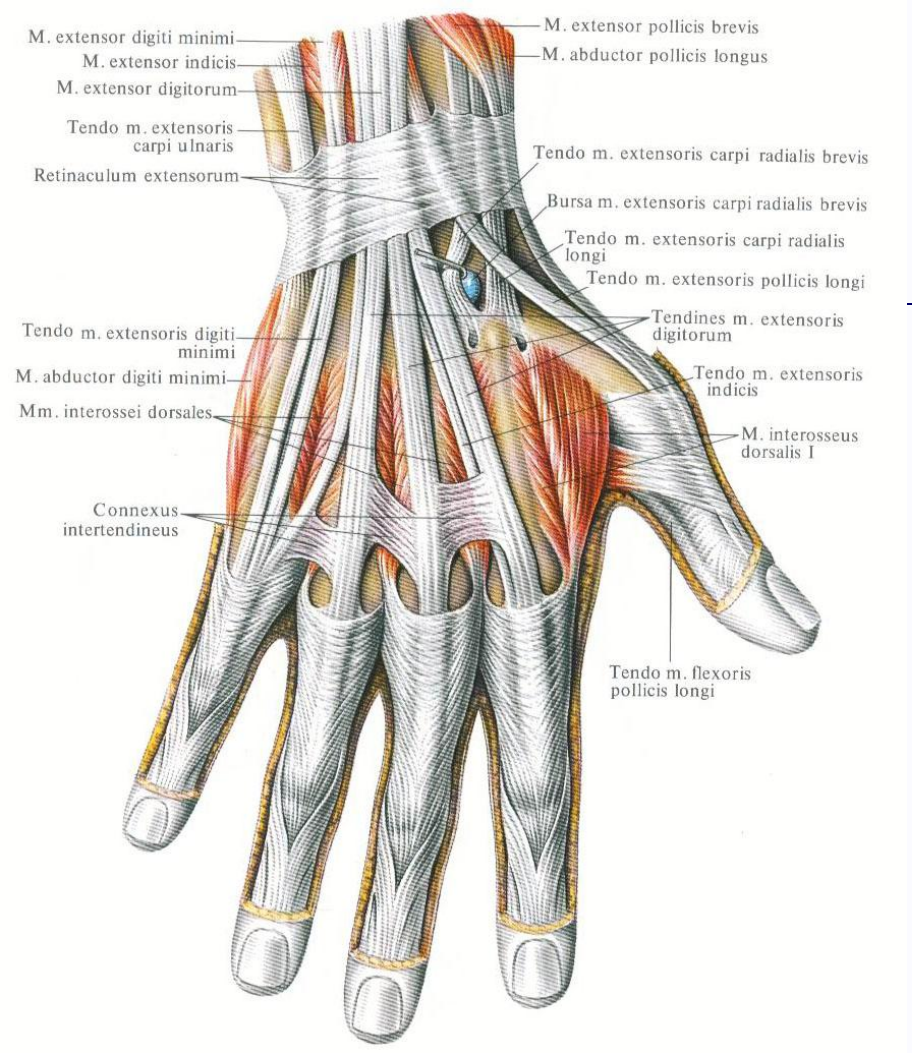
Canalis carpalis:

- Synovial vagines of tendons of muscles flexor digitorum,
- tendon of m.flexoris pollicis longus,
- nervus medianus.

Canalis carpi ulnaris:

- Arteria ulnaris
- Vena ulnaris
- Nervus ulnaris

Retinaculi of the upper limb



Retinaculum extensorum

/6 canals transmitting tendons/

I - m.abductor pollicis longus
m.extensor pollicis brevis

II - m.extensor carpi radialis longus
m.extensor carpi radialis brevis

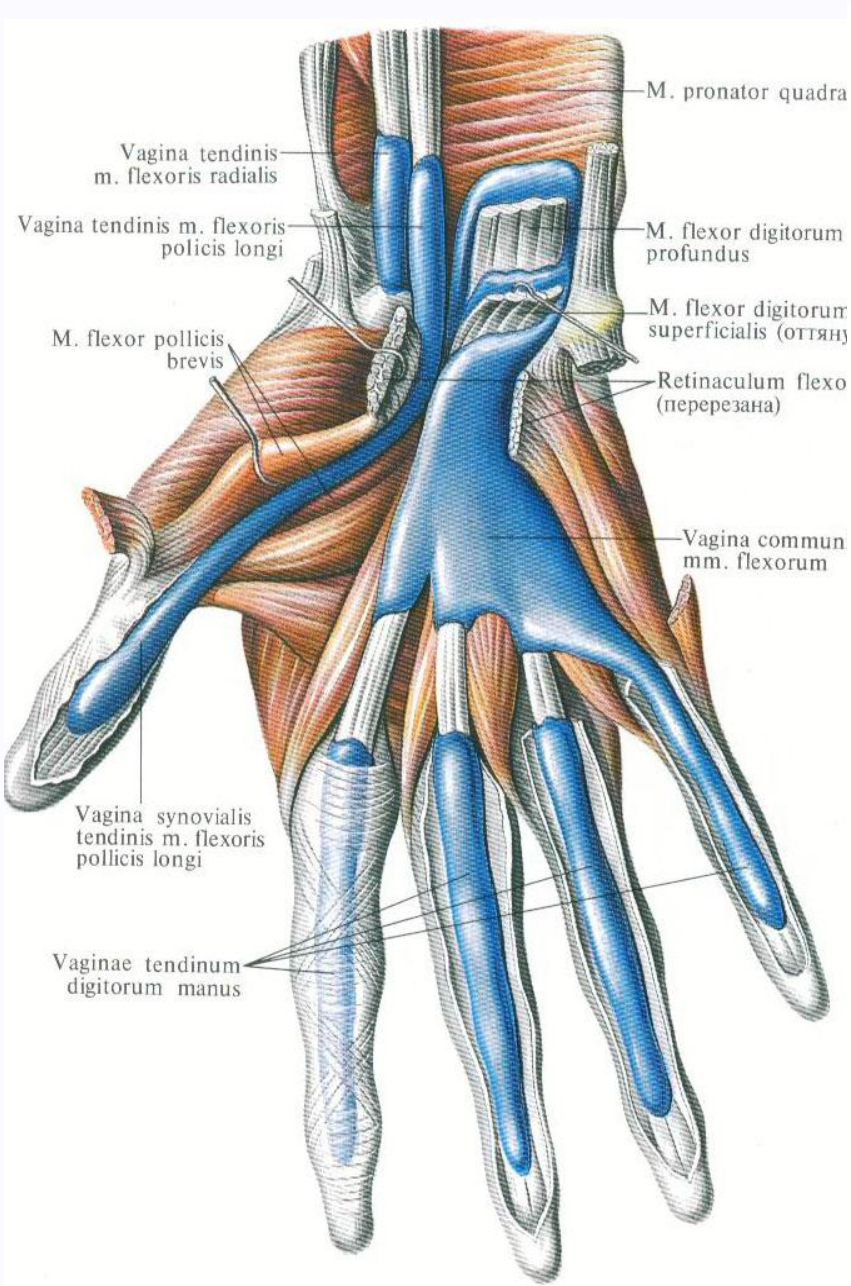
III - m.extensor pillicis longus

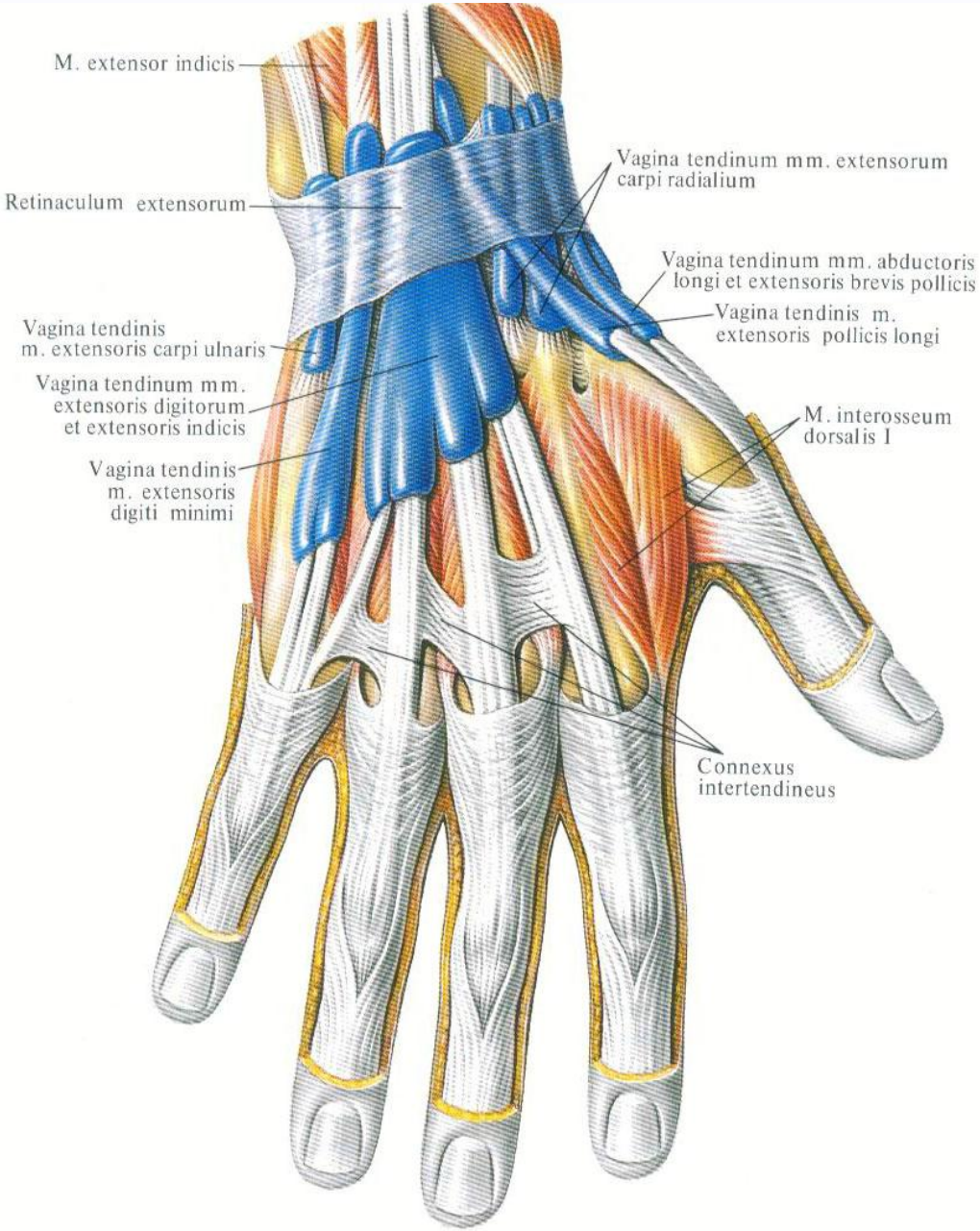
IV – m.extensor digitorum
m. extensor indicis

V - m. extensor digiti minimi

VI – m.extensor carpi ulnaris

Synovial sheaths of the palmar and dorsal surface of the hand





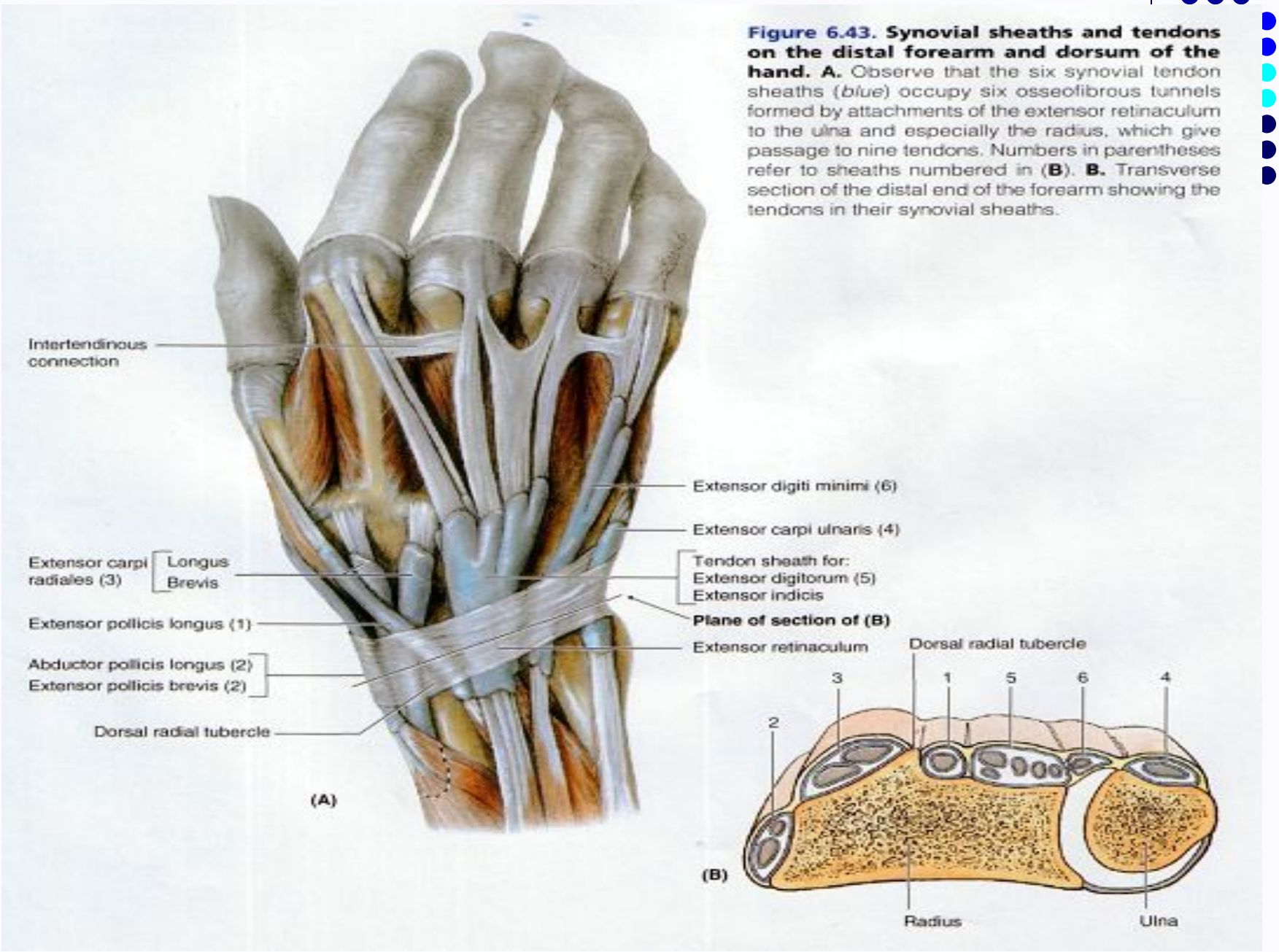


Figure 6.43. Synovial sheaths and tendons on the distal forearm and dorsum of the hand. A. Observe that the six synovial tendon sheaths (*blue*) occupy six osseofibrous tunnels formed by attachments of the extensor retinaculum to the ulna and especially the radius, which give passage to nine tendons. Numbers in parentheses refer to sheaths numbered in (**B**). **B.** Transverse section of the distal end of the forearm showing the tendons in their synovial sheaths.

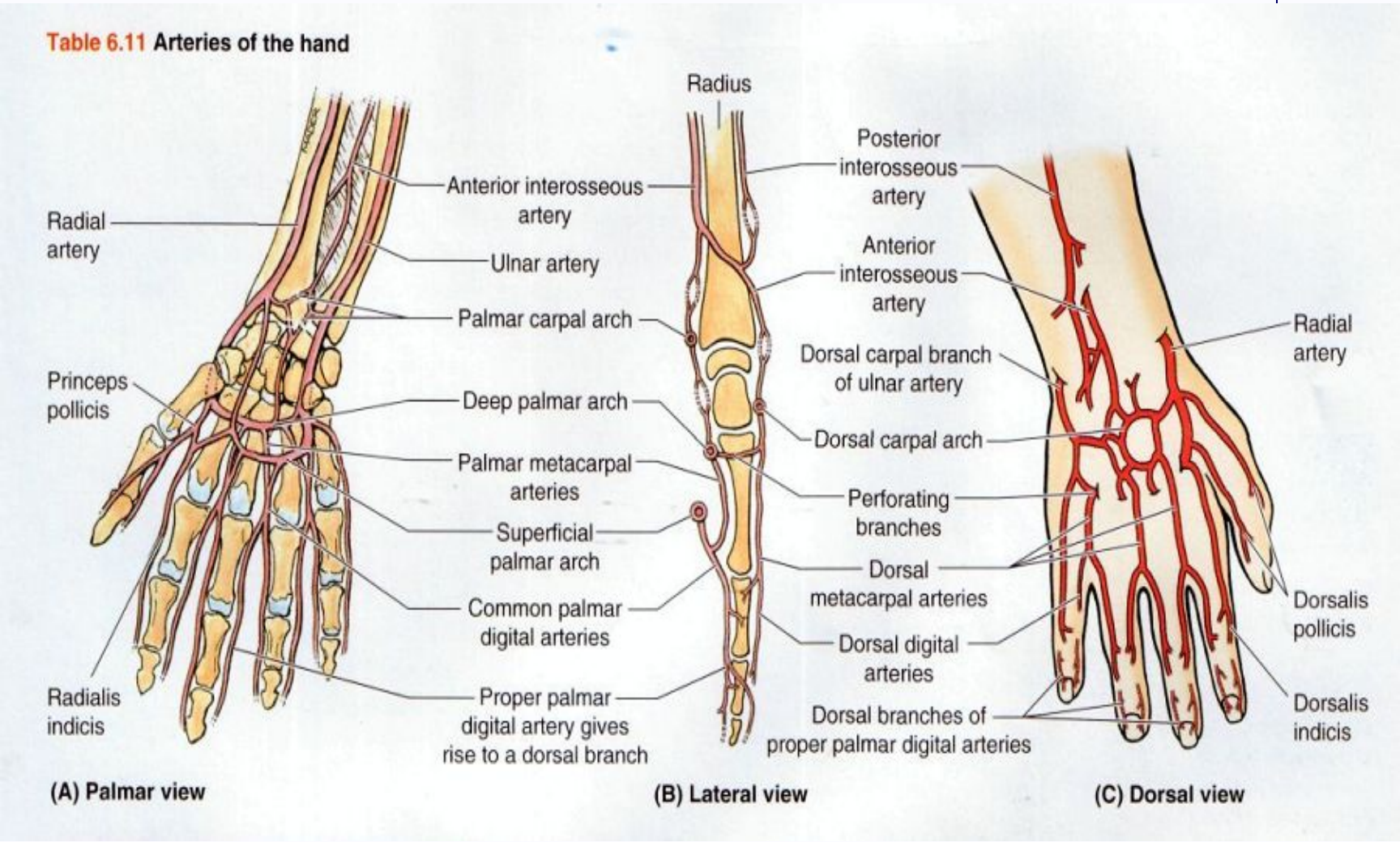
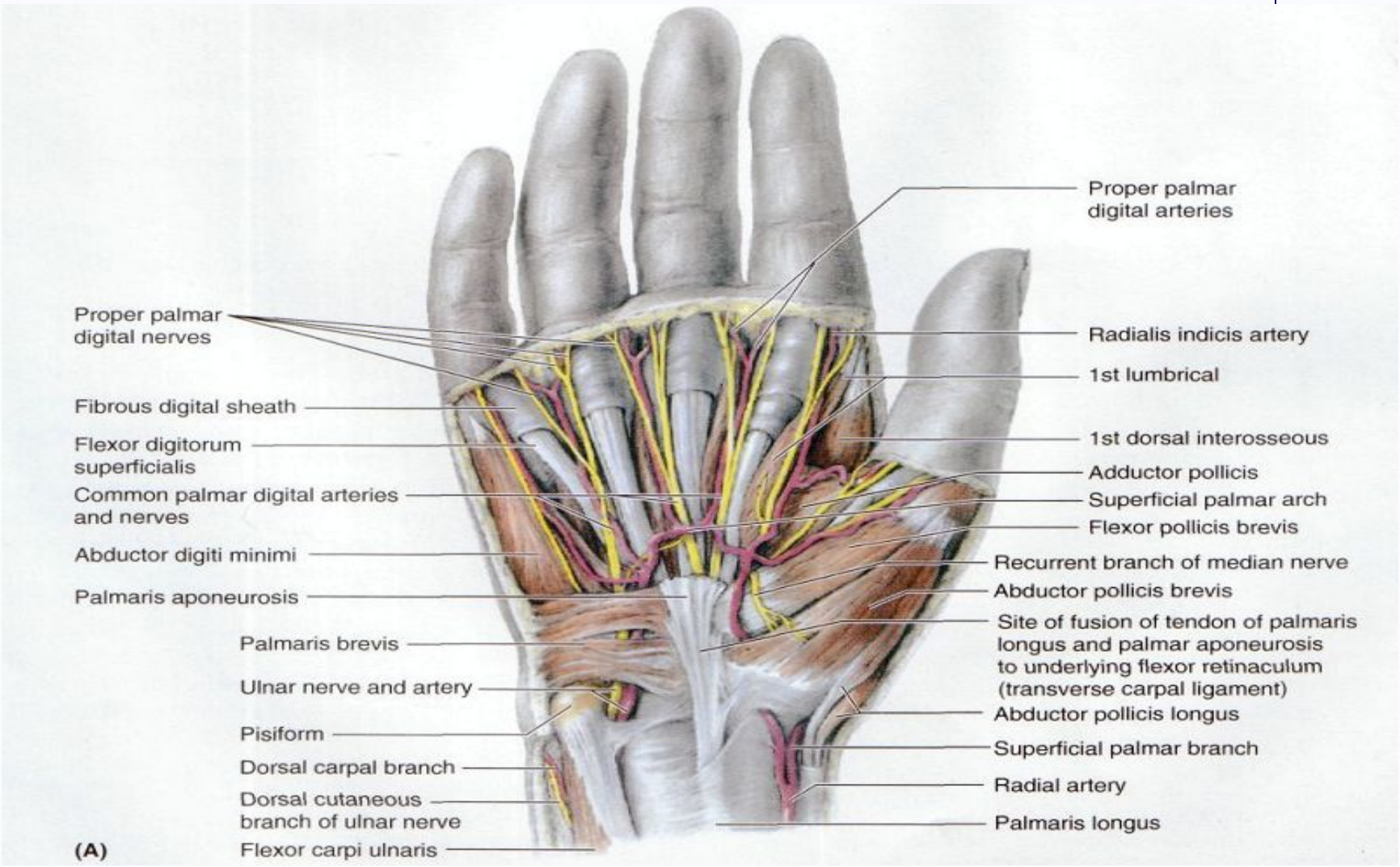


Table 6.11 Arteries of the hand
Radius
Radial artery
Anterior interosseous artery
Ulnar artery
Palmar carpal arch
Princeps pollicis
Deep palmar arch
Palmar metacarpal arteries
Superficial palmar arch
Common palmar digital arteries
Radialis indicis
Proper palmar digital artery gives rise to a dorsal branch
Posterior interosseous artery
Anterior interosseous artery
Dorsal carpal branch of ulnar artery
Dorsal carpal arch
Perforating branches
Dorsal metacarpal arteries
Dorsal digital arteries
Dorsal branches of proper palmar digital arteries
Radial artery
Dorsalis pollicis
Dorsalis indicis
(A) Palmar view
(B) Lateral view
(C) Dorsal view


Proper palmar digital arteries
Proper palmar digital nerves
Radialis indicis artery
1st lumbrical
Fibrous digital sheath
1st dorsal interosseous
Flexor digitorum superficialis
Adductor pollicis
Common palmar digital arteries and nerves
Superficial palmar arch
Flexor pollicis brevis
Abductor digiti minimi
Recurrent branch of median nerve
Palmaris aponeurosis
Abductor pollicis brevis
Site of fusion of tendon of palmaris longus and palmar aponeurosis to underlying flexor retinaculum (transverse carpal ligament)
Palmaris brevis
Ulnar nerve and artery
Abductor pollicis longus
Pisiform
Superficial palmar branch
Dorsal carpal branch
Radial artery
Dorsal cutaneous branch of ulnar nerve
Palmaris longus
(A)
Flexor carpi ulnaris