ARTERIES & VEINS of the upper limb

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Arteries and veins of the upper limb

ARTERIES

The subclavian artery becomes the axillary artery after crossing the 1st rib

The axillary artery becomes the brachial artery after crossing the posterior axillary fold

The brachial artery divides just distal to the elbow into the radial and ulnar arteries.

The ulnar artery gives rise to the common interosseous artery, which divides into anterior and posterior interosseous arteries.

The hand is supplied on the palmar aspect by variable anastomoses between branches of the radial and ulnar arteries.

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Brachial artery

- Begins at the distal border of the tendon of teres major
- Ends about 1 cm distal to the elbow joint by dividing into radial and ulnar arteries.
- Branches:
  - Profunda brachii artery
  - Nutrient artery of humerus
  - Superior ulnar collateral artery
  - Middle ulnar collateral artery (if present)
  - Inferior ulnar collateral artery
  - Muscular branches

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1. Profunda brachii artery
2. Radial collateral artery
3. Middle collateral branch of profunda brachii artery
4. Superior ulnar collateral artery
5. Inferior ulnar collateral artery
6. Anterior ulnar recurrent artery
7. Posterior ulnar recurrent artery
8. Radial artery
9. Ulnar artery
10. Radial recurrent artery
11. Ulnar recurrent artery
12. Common interosseous artery
13. Intersosseous recurrent artery (& posterior interosseous artery)
14. Anterior interosseous artery
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Radial artery

- Begins from the brachial artery near the neck of the radius
- Passes deep to brachioradialis
- At the wrist it passes in the anatomical snuff box
- Ends in the hand by anastomosis with the deep branch of the ulnar artery, completing the deep palmar arch

Branches:
- Radial recurrent artery (anastomoses with the radial collateral branch of the profunda brachii)
- Muscular branches
- Cutaneous branches

Ulnar artery

- Begins from the brachial artery near the neck of the radius
- Passes deep to pronator teres, flexor carpi radialis, palmaris longus and flexor digitorum superficialis
- The ulnar head of pronator teres separates it from the median nerve
- At the wrist it passes in the anatomical snuff box
- Ends in the hand by anastomosis with the superficial palmar branch of the radial artery, completing the superficial palmar arch

Branches:
- Anterior ulnar recurrent artery
- Posterior ulnar recurrent artery
- Common interosseous artery, which divides into anterior interosseous artery and posterior interosseous artery (which gives rise to the posterior interosseous recurrent artery)
- Muscular branches
- Cutaneous branches along the septum between flexor carpi ulnaris and flexor digitorum superficialis.
Arteries and veins of the upper limb

**Anterior interosseous artery**
- Begins at the proximal border of the interosseous membrane
- Descends on the anterior aspect of the interosseous membrane with the anterior interosseous branch of the median nerve, between the contiguous sides of flexor digitorum profundus and flexor pollicis longus.
- Pierces the interosseous membrane proximal to pronator quadratus
- Distally it anastomoses with the posterior interosseous artery and the dorsal carpal arch.
- Branches:
  - Median artery
  - Muscular branches for FDP, FPL, pronator quadratus, and deep extensor muscles
  - Small cutaneous branches for the lower lateral border of the forearm

**Posterior interosseous artery**
- Begins at the proximal border of the interosseous membrane
- Passes dorsally between supinator and abductor pollicis longus
- Descends deep in the groove between extensor carpi ulnaris and extensor digiti minimi
- Distally it anastomoses with the terminal part of the anterior interosseous artery and the dorsal carpal arch.
- Branches:
  - Multiple muscular branches
  - Fascio-cutaneous branches in the intermuscular septum

**VEINS**
The venous drainage of the upper limb is composed of superficial and deep vessels.

*The deep veins* accompany the arteries. They are connected to the superficial system by perforating veins.

*The superficial veins* starts on the back of the hand as a dorsal arch.
- The cephalic vein begins at the radial extremity of the arch. It ascends along the lateral aspect of the arm, then it pierces the deep fascia to enter the axillary vein just distal to the clavicle.
- The basilic vein passes along the medial aspect of the forearm, pierces the deep fascia at the elbow and joins the venae comitantes of the brachial artery.
- The median cubital vein links the cephalic and basilic veins in front of the elbow.
References

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