

وسهلا

أهلا



الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

رئيس قسم التشريح و الأنسجة و الأجنة - كلية الطب - جامعة مؤتة - الأردن

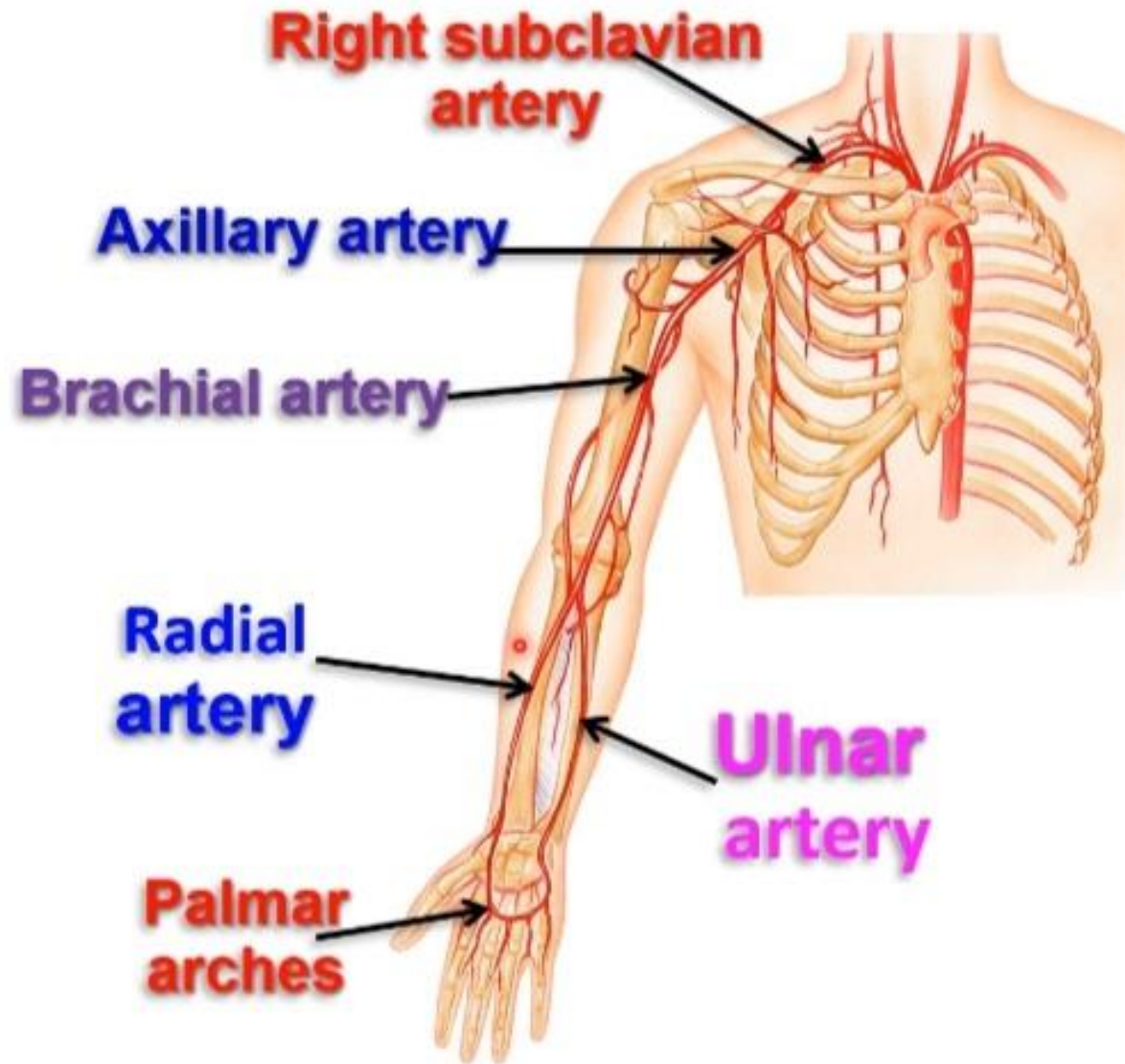
مساعد العميد لشؤون الطلاب والامتحانات - كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

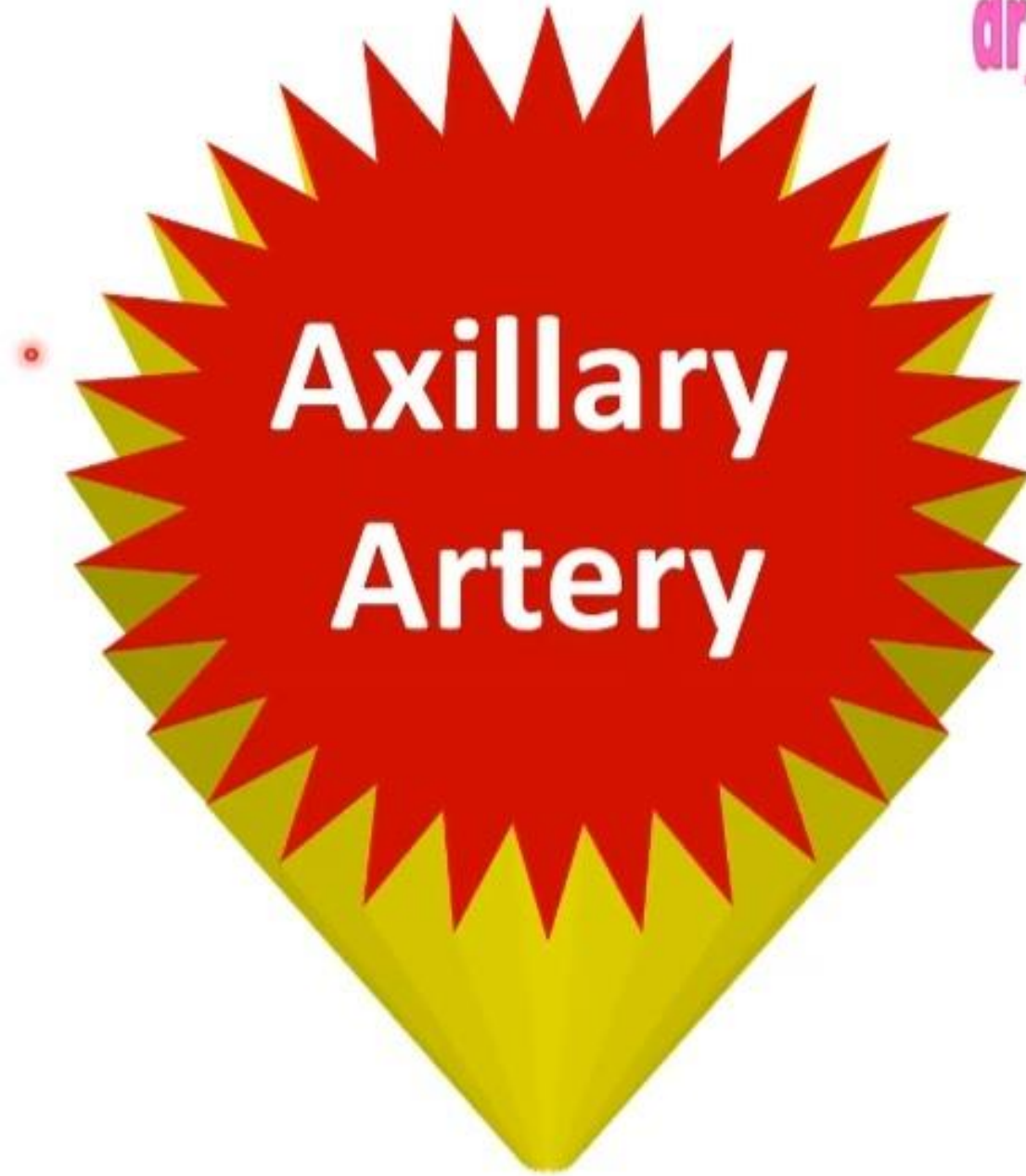
Dr. Youssef Hussein Anatomy اليوتيوب

جروب الفيس د. يوسف حسين (استاذ التشريح)

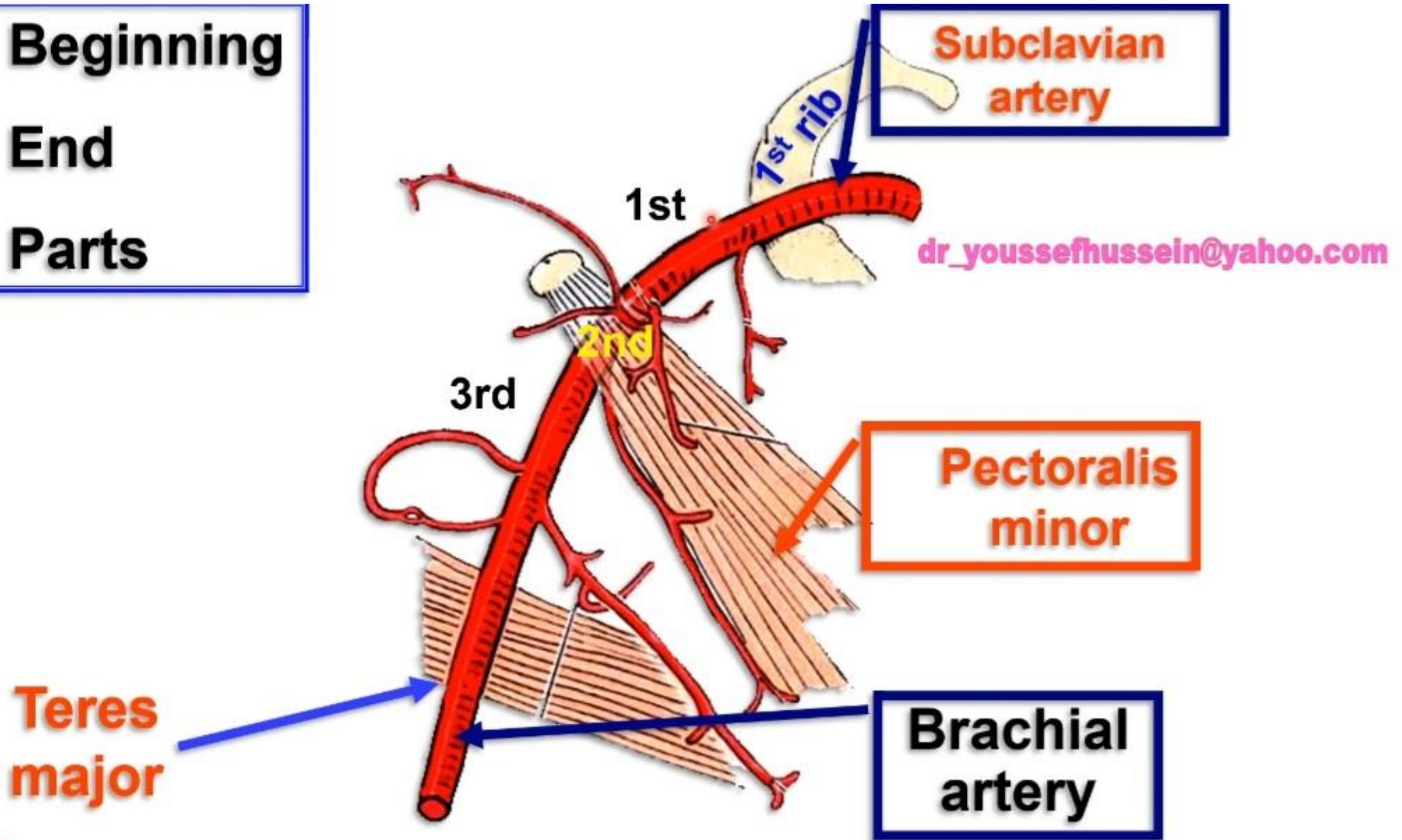
Arteries Of The Upper Limb



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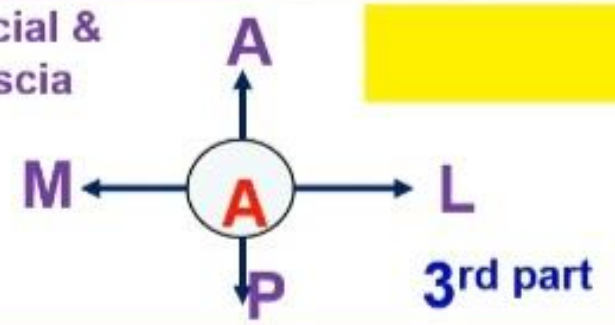


- **Beginning**
- **End**
- **Parts**



Skin

Superficial & deep fascia



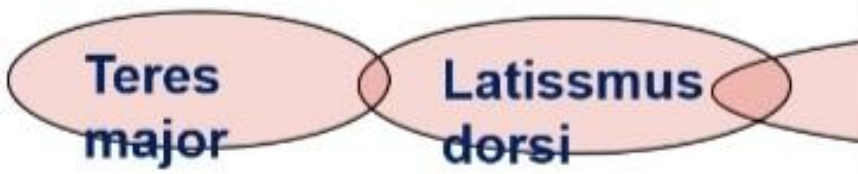
Pectoralis major M

Pectoralis minor M

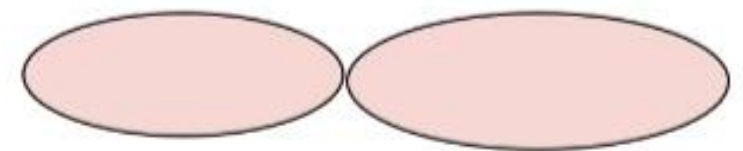
Clavipectoral fascia

2nd part

1st part



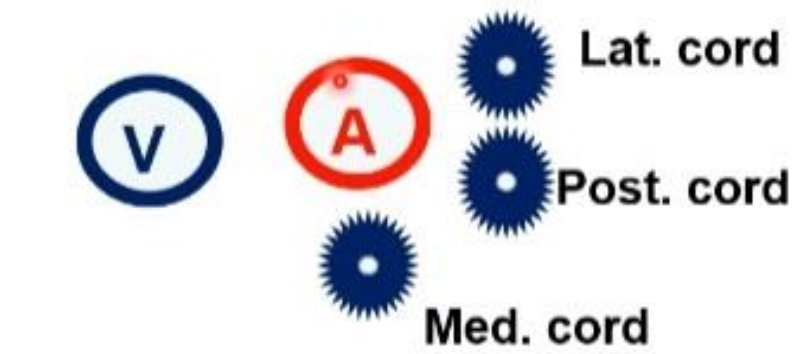
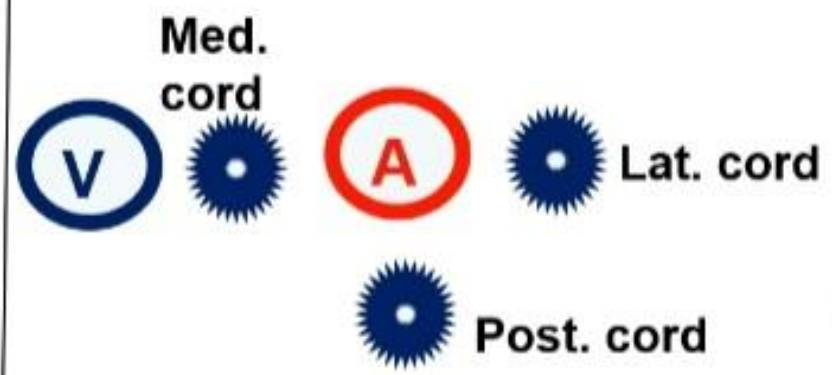
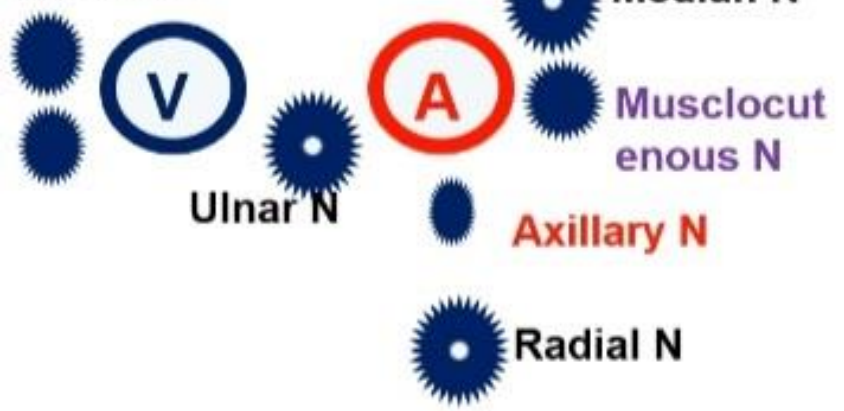
1st digitation of serratus anterior



1st intercostal space



Medial cut N of arm & forearm



- **Relations of the first part of the axillary artery**

- **Anterior:**

- a- Skin, superficial fascia and deep fascia.
- b- Pectoralis major.
- c- Clavipectoral fascia.

- **Posterior;**

- a- Medial cord of brachial plexus.
- b- First and second ribs and First intercostal space.
- c- First digitation of serratus anterior and long thoracic nerve.

- **Lateral:**

- a- Lateral cord of brachial plexus.
- b- Posterior cord of brachial plexus.

- **Medially:** Axillary vein.

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- **Relations of the second part of the axillary artery**

- **Anterior:**

- a- Skin, superficial fascia and deep fascia.

- b- Pectoralis major.

- c- Pectoralis minor.

- **Posterior:**

- a- Posterior cord of brachial plexus.

- b- Subscapularis.

- **Lateral:** Lateral cord of brachial plexus.

- **Medial:**

- a- Medial cord of brachial plexus,

- b- Axillary vein.

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• Relations of the third part of the axillary artery

- Anteriorly:

- a- Skin, superficial fascia and deep fascia.
- b- Pectoralis major (only upper part).
- c- Medial root of the median nerve.

- Posteriorly:

- a- Radial and axillary nerves.
- b- Subscapularis, latissimus dorsi and teres major (SLT).

- Laterally:

- a- Median nerve.
- a. Musculocutaneous nerve.

- Medially:

- a- Axillary vein.
- b- Ulnar nerve.
- c- Medial cutaneous nerve of the arm.
- d- Medial cutaneous nerve of the forearm.

- Surgical anatomy

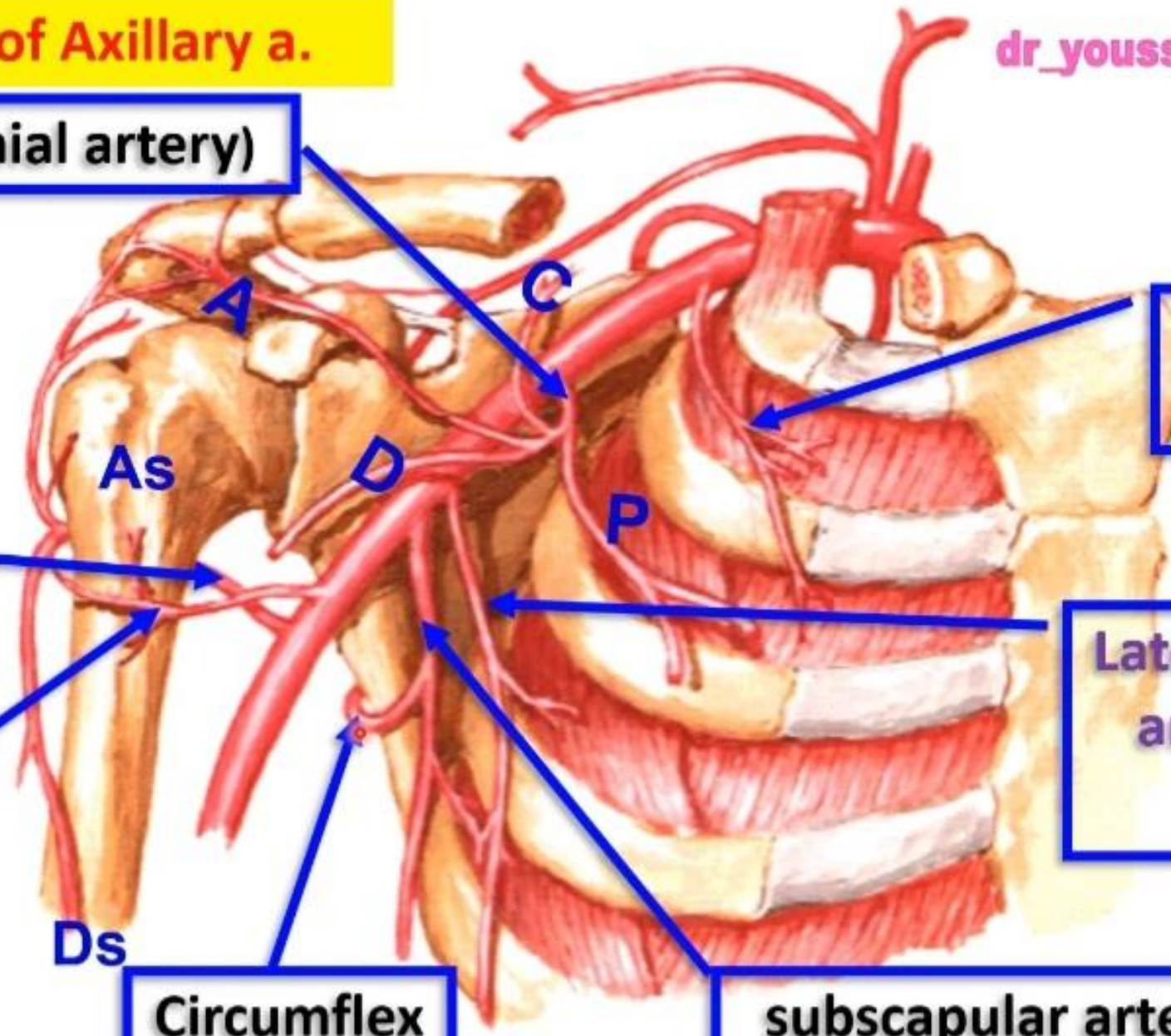
- The skin of the axilla has abundant hair, so infection is common forming **axillary abscess**, Also **cancer breast** spreads to axillary lymph node.
- The axillary vessels and cords of the brachial plexus pass from the apex to the base close to the lateral wall.
- Accordingly, **incisions in the axilla** are done longitudinally through the base nearer to the medial wall to avoid injury of the vessels and big nerves.

Branches of Axillary a.

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Thoracoacromial artery)

A cromial,
P ectoral,
C lavicular
D eltoid



Superior thoracic artery (1st)

Posterior circumflex artery (3rd)

Lateral thoracic artery (2nd)

Anterior circumflex artery (3rd)

Circumflex

subscapular artery (3rd) largest branch

**** Branches of the axillary artery;**

I- Branches of the first part (only one branch) Superior thoracic artery to the upper part of the lateral thoracic wall.

II- Branches of the second part (gives two):

1- Lateral thoracic artery to the lateral thoracic wall and female breast.

2- Thoracoacromial artery gives 4 branches (**A**cmromial, **P**ectoral, **C**lavicular, **D**eltoid):

III- Branches of the third part (3 branches);

1- Anterior circumflex humeral artery.

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2- Posterior circumflex humeral artery.

3- Subscapular artery.

- **III- Branches of the third part (3 branches);**

1- Anterior circumflex humeral artery: It runs in front the surgical neck of the humerus to anastomosis with the posterior circumflex humeral artery.

- It gives an **ascending** branch to the shoulder joint through **bicipital groove**.

2- Posterior circumflex humeral artery: It passes posteriorly through the **quadrangular space** with the axillary nerve to anastomosis with the anterior circumflex humeral artery.

- It gives **descending** branch which anastomoses with the ascending branch of the profunda brachii artery.

3- Subscapular artery: is the largest branch.

- It descends along the lateral border of the scapula to the inferior angle.

- It gives **circumflex scapular artery** passes through the **upper triangular** intermuscular space. It shares in the anastomoses around the scapula

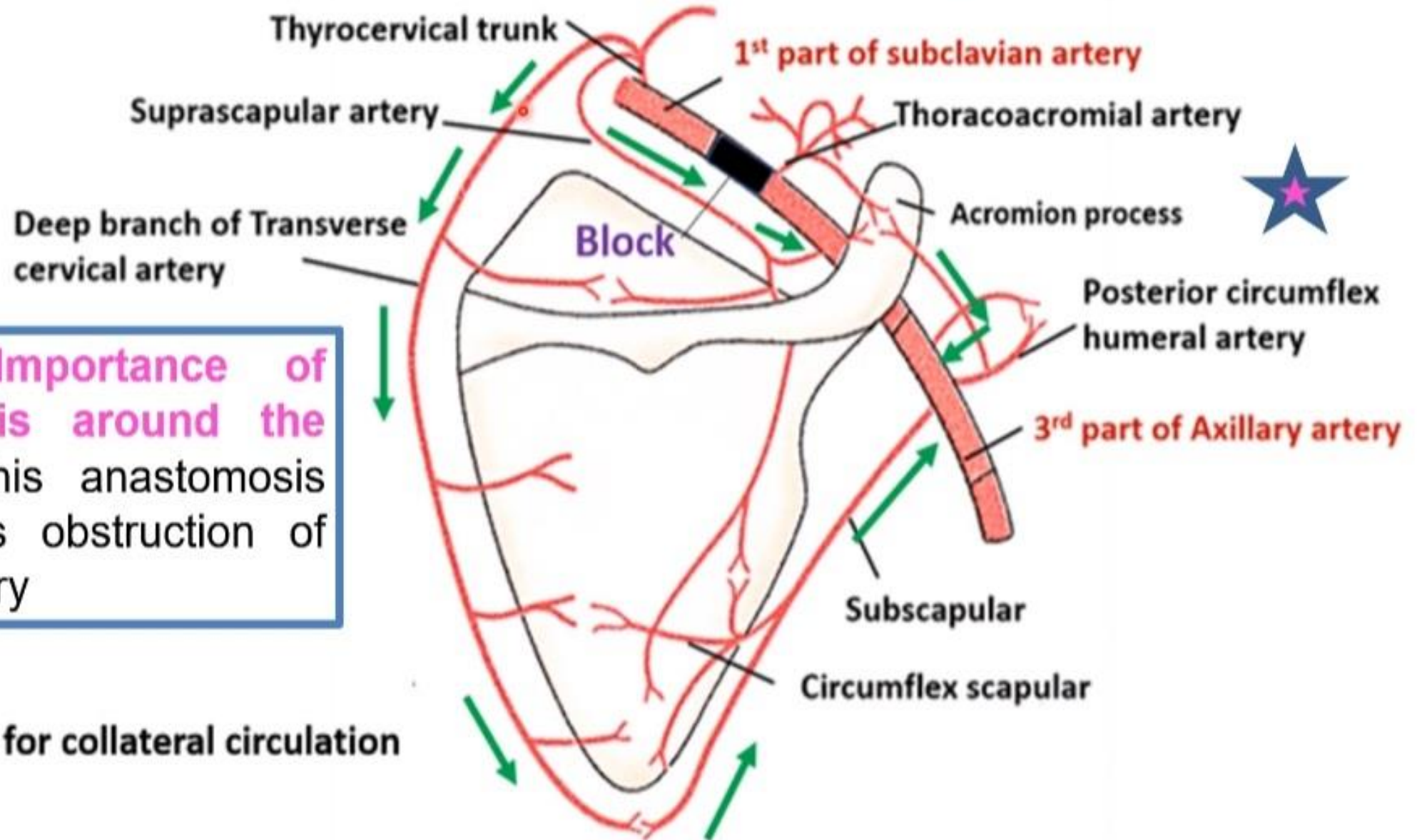
Anastomosis around scapula

Anastomosis Between

- **First part of Subclavian artery**
- **Third part of Axillary artery**
- **Posterior intercostal arteries**

Anastomosis Around Scapula

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Surgical Importance of anastomosis around the scapula, this anastomosis can bypass obstruction of Axillary artery

→ Route for collateral circulation

Anastomosis around the scapula

Deep branch of transverse cervical artery



Supraspinous fossa

Suprascapular artery

Infraspinous fossa

Circumflex scapular artery

Subscapular fossa

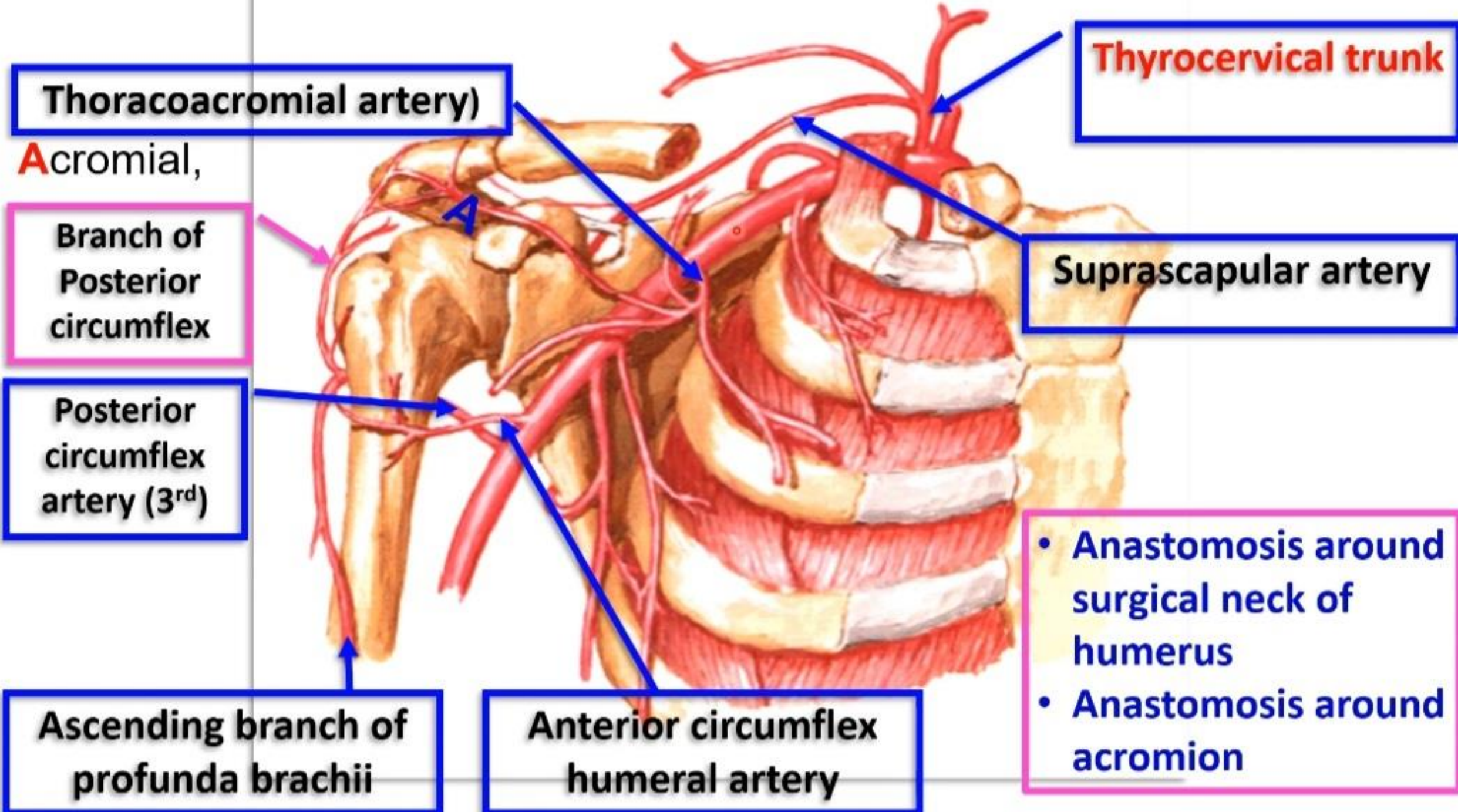
Subscapular artery (3rd part of axillary artery)

Inferior angle

- The first part of subclavian artery gives thyrocervical trunk;

1- **Suprascapular artery** on the dorsal aspect of the scapula.

2- **Deep branch of transverse cervical artery** along medial border of scapula.



Thoracoacromial artery)

A cromial,

Branch of Posterior circumflex

Posterior circumflex artery (3rd)

Ascending branch of profunda brachii

Anterior circumflex humeral artery

Thyrocervical trunk

Suprascapular artery

- Anastomosis around surgical neck of humerus
- Anastomosis around acromion

- **Anastomoses around the surgical neck of the humerus**

1- **Anterior** circumflex humeral artery (3rd part of axillary artery).

2- **Posterior** circumflex humeral artery (3rd part of axillary artery).

3- **Ascending** branch of profunda brachii artery (brachial artery).

**** Surgical Importance**, this anastomosis can bypass obstruction of brachial artery above the origin of profunda brachii artery.

- **Anastomoses around the acromion process**

1. Acromial branch of thoracoacromial artery.

2. Branch of suprascapular artery.

3. Branch of posterior circumflex humeral artery.

Begin – End

Teres major m.



Begin at lower border of teres major Muscle

Venae comitantes

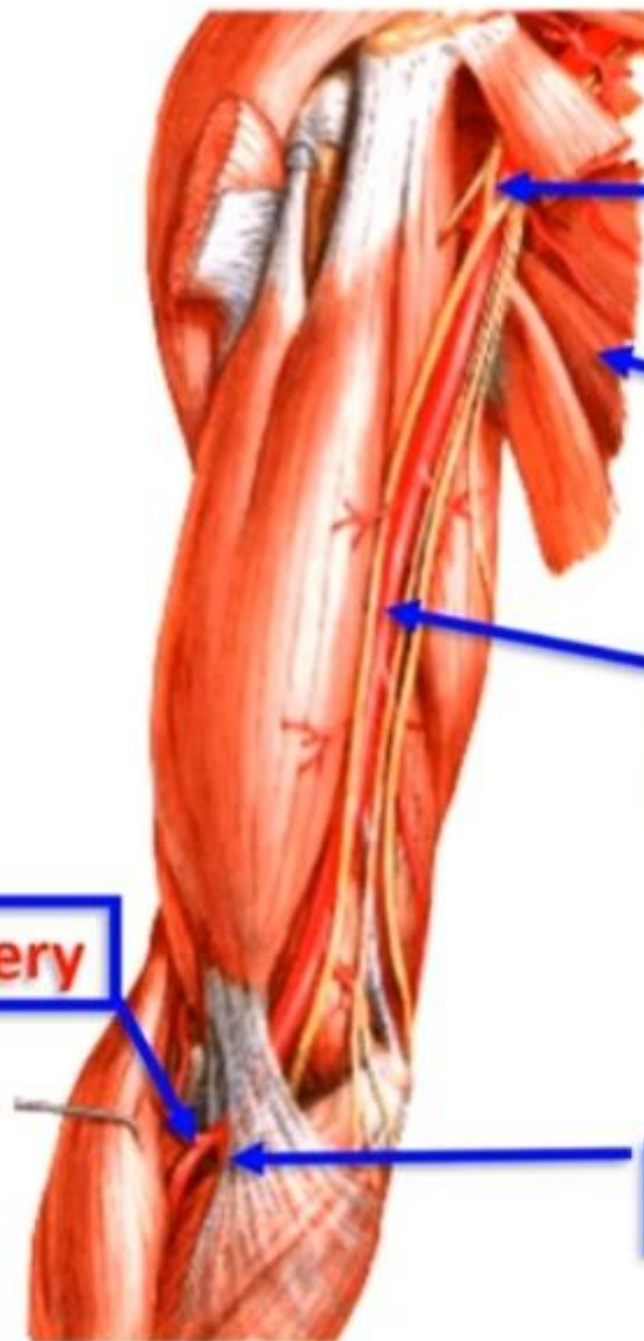


End opposite the neck of the radius

Neck of Radius



Radial artery



Axillary artery

Teres major

Brachial artery

Ulnar artery

Lateral

Medial

Musculo-cutaneous

brachial artery

Coraco-brachialis

Ulnar nerve

median nerve

Medial cutaneous n. of forearm

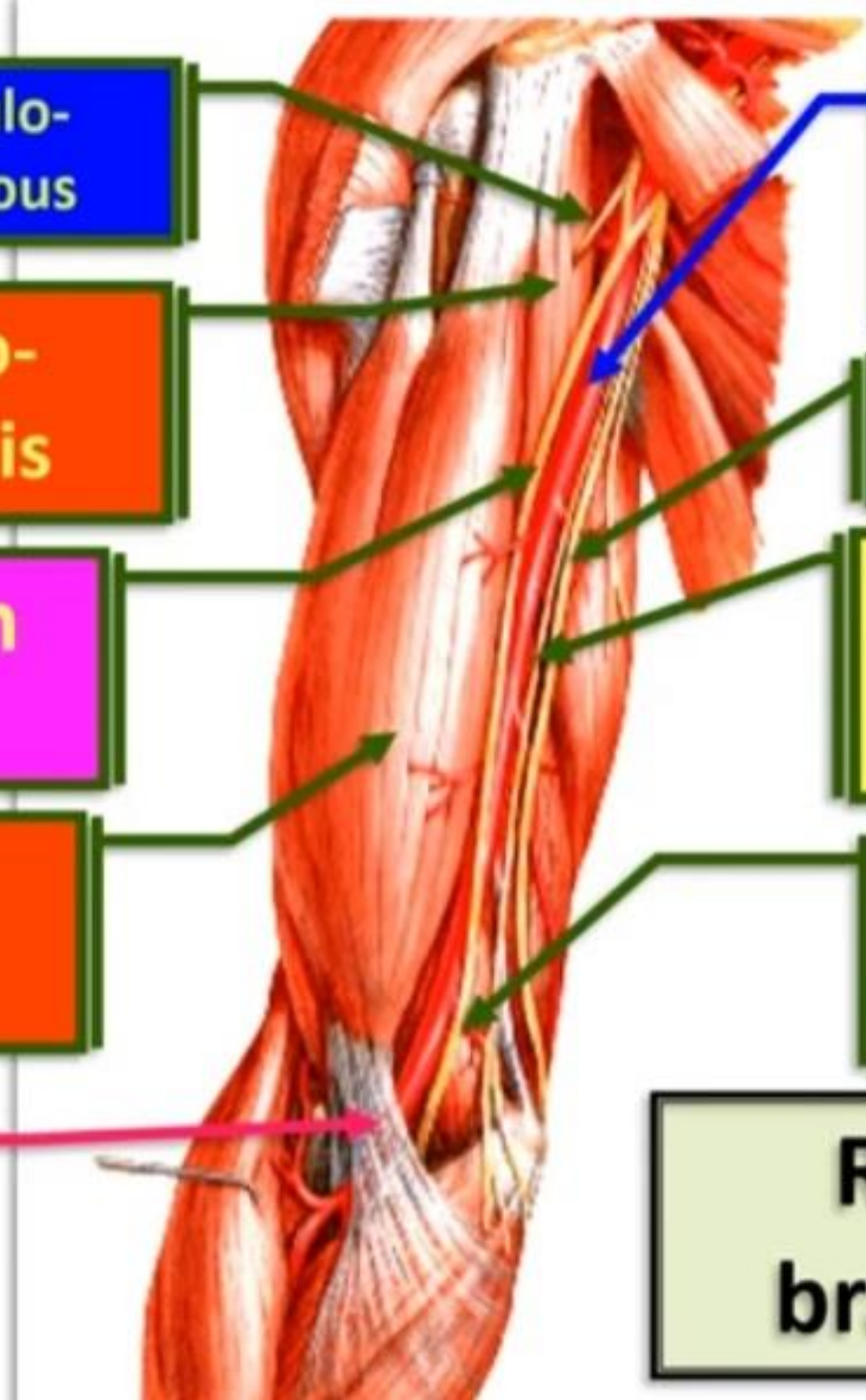
biceps brachii

median nerve

Bicipital aponeurosis

Relations of brachial artery

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** Relations of the brachial artery in the arm

- Laterally;

- 1- **Median nerve** and musculocutaneous nerve.
- 2- Coracobrachialis and biceps brachii muscles.

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- Medially:

- 1- **Ulnar nerve** and medial cutaneous nerves of the arm and forearm.
- 2- **Median nerve** and basilic vein.

- Anteriorly:

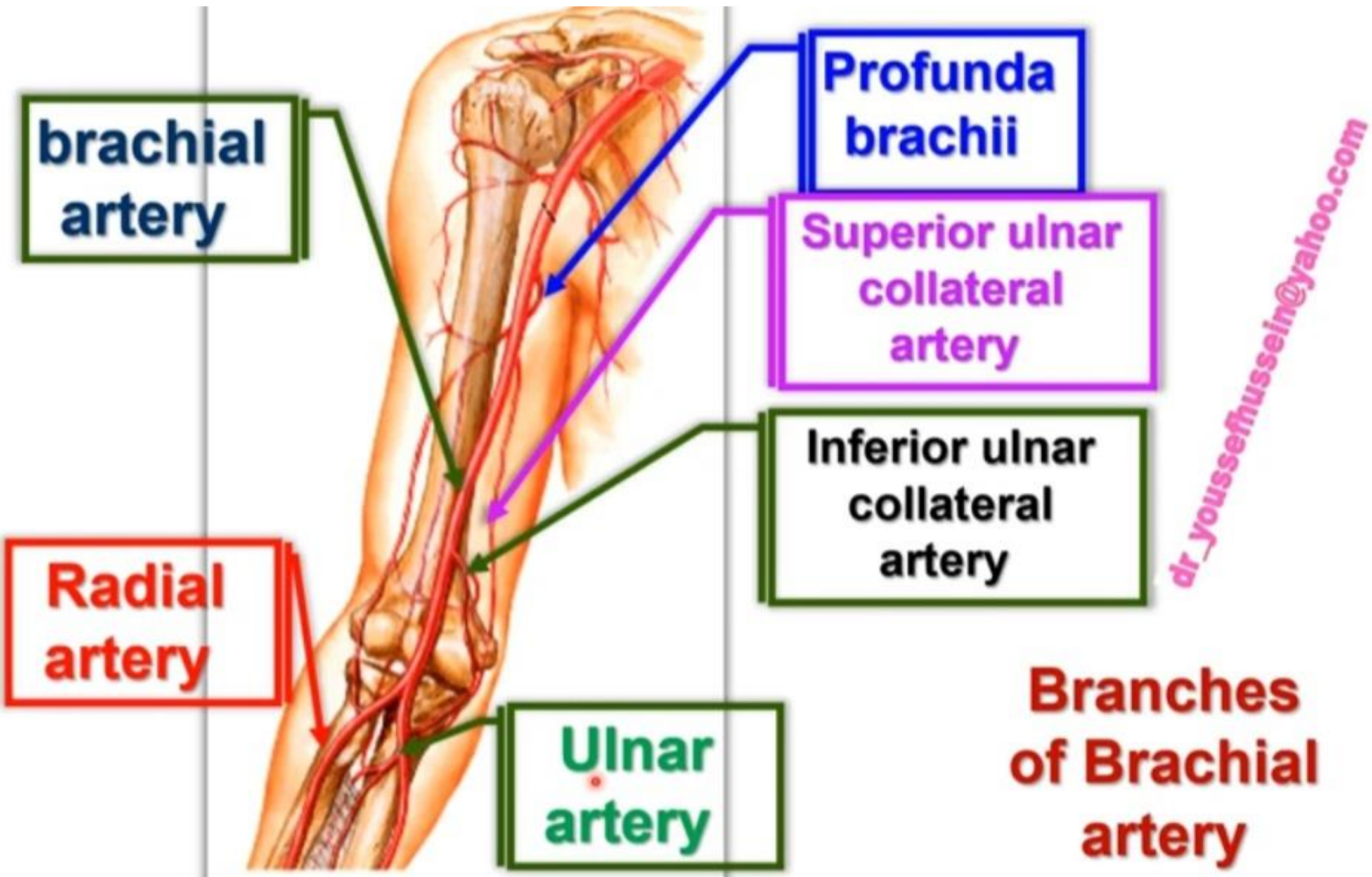
- 1- **Median nerve** crosses in front of the artery from lateral to medial.
- 2- **Bicipital aponeurosis** which separates brachial artery from median cubital vein.

- Posteriorly: Long head of triceps and Brachialis muscle.

Brachial artery is the site of auscultation of blood pressure



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brachial artery

Profunda brachii

Superior ulnar collateral artery

Inferior ulnar collateral artery

Radial artery

Ulnar artery

Branches of Brachial artery

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In front lateral epicondyle

Ascending branch

Behind lateral epicondyle

Anterior descending branch (radial collateral artery)

Profunda brachii

Posterior descending branch (Middle collateral artery)

Radial recurrent artery

Interosseous recurrent artery

Radial artery

Ulnar artery

Post. interosseous artery

Common interosseous artery



• Profunda brachii

- It is the main arterial blood to the posterior compartment of the arm.

* Course:

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- It descends through the **lower (lateral) triangular space** with the radial nerve.

- Then descend in the **spiral groove** with the **radial nerve** behind the humerus between the lateral and medial head of the triceps.

- It terminates by dividing into anterior and posterior descending branches.

* Branches

a - Muscular branches.

b- Nutrient artery of the humerus

c- Ascending branch: which anastomoses with the **descending** branch of the posterior circumflex humeral artery.

d- Anterior descending branch (*Radial collateral artery*):

- It anastomoses with the **radial recurrent artery in front** of the lateral epicondyle.

e- Posterior descending branch (*Middle collateral artery*):

- It anastomoses with **interosseous recurrent** artery in **back** of the lateral epicondyle.

(in front medial epicondyle)

behind medial epicondyle

anterior branch of inferior ulnar collateral artery

Superior ulnar collateral artery

Inferior ulnar collateral artery

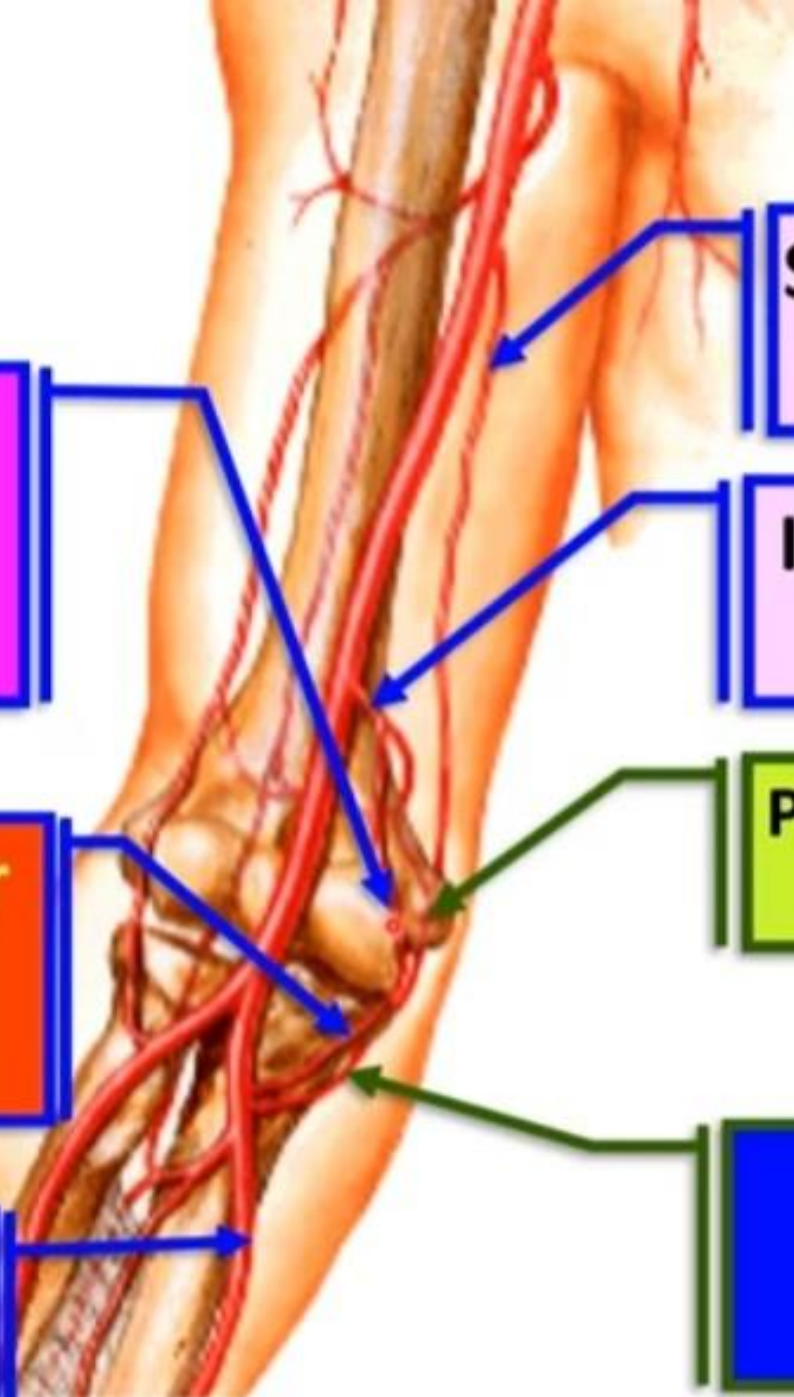
Anterior ulnar recurrent artery

Posterior branch of inferior ulnar collateral artery

Ulnar artery

posterior ulnar recurrent artery

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Branches of the brachial artery

1- Profunda brachii artery

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2- Superior ulnar collateral artery:

- It continues with the ulnar nerve **to the back** of the medial epicondyle where it anastomoses with the **posterior ulnar recurrent artery**.

3- **Inferior ulnar collateral artery**: it divides into anterior and posterior branches.

a) The anterior branch descends to the front of the medial epicondyle and anastomoses with the **anterior ulnar recurrent artery**.

b) The posterior branch descends to the back of the medial epicondyle where it anastomoses with the **posterior ulnar recurrent artery**.

4- **Terminal branches** (radial and ulnar arteries).

- **Anastomoses around the elbow joint**

**** Formation;** between the branches of brachial and radial and ulnar arteries.

**** Sites of anastomosis**

1- In front of the lateral epicondyle; between

a- Anterior descending branch of the profunda brachii artery.

b- Radial recurrent artery (from the radial artery).

2- Behind the lateral epicondyle; between

a- Posterior descending branch of the profunda brachii artery.

b- Interosseous recurrent artery (from posterior interosseous artery).

3- In front of the medial epicondyle; between

a- Anterior branch of Inferior ulnar collateral artery (from brachial artery).

b- Anterior ulnar recurrent artery (from the ulnar artery).

4- Behind the medial epicondyle; between

a- Superior ulnar collateral artery and posterior branch of inferior ulnar collateral (from brachial artery).

b- Posterior ulnar recurrent artery (from the ulnar artery).

**** Significance,** anastomosis can bypass obstruction of brachial artery above its terminal branches.

