ANTERIOR COMPARTMENT OF
THE ARM

DR NAIMA ATTAULLAH
LECTURER ANATOMY DEPTT KGMC
ARM OR BRACHIUM

- Arm extends from the shoulder joint to the elbow joint.

- Medial & lateral intermuscular septa divide the arm into an anterior or flexor compartment and posterior or extensor compartment.
FLEXOR COMPARTMENT OF ARM

Muscles
- Coracobrachialis
- Biceps brachii
- Brachialis

Nerves in the arm
- Musculocutaneous nerve (nerve of the arm)
- Median nerve
- Ulnar nerve
- Radial nerve

Artery
- Brachial artery

© Dr. N. Mugunthan
Muscles of the Anterior Fascial Compartment

- The biceps brachii.
- Coracobrachialis.
- Brachialis muscles.
**Coracobrachialis**

- **Origin:** tip of the coracoid process with conjoint origin of short head of biceps

- **Insertion:** medial border of the middle of the shaft of the humerus

© Dr. N. Mugunthan
**Coracobrachialis cont....**

**Nerve supply**
- Musculocutaneous nerve
- Coracobrachialis is pierced by musculocutaneous nerve

**Action**
- Flexes the arm
BICEPS BRACHII

Origin:

**Short head:**
From Coracoid process with conjoint origin of coracobrachialis

**Long head:**
Intracapsular origin- supragnoid tubercle of scapula

© Dr.N.Mugunthan
Biceps Brachii cont....

- Long head fuses with short head to form a muscle belly about 7 cm above elbow joint.
INSERTION OF BICEPS BRACHI

- Muscle belly turns to a tendon which runs in cubital fossa.

- Inserted to posterior part of radial tuberosity in a twisted manner.

- Before insertion medial part expand to form bicipital aponeurosis.

© Dr. N. Mugunthan
Nerve Supply:  
Musculocutaneous nerve

Action:  
1. Powerful supinator  
2. Flexor of elbow joint  
3. Long head keeps humeral head inside the glenoid cavity during abduction of shoulder joint
Brachialis muscle

- **Origin:**
  - From the lower half of the anterior surface of the shaft of the humerus.

- **Insertion:** Into the anterior surface of the coronoid process of the ulna.

- **Nerve Supply:**
  - Majority of the muscle from musculocutaneous nerve.
  - Small lateral part from the radial nerve.

- **Action:** Strong flexion of the elbow joint.
Body of humerus
Brachialis m.
Ulnar tuberosity
SUMMARY OF MUSCLES OF FRONT OF ARM

(A) Anterior views

Biceps brachii

Coracobrachialis

Brachialis

© Dr. N. Mugunthan
Figure 7-12: Anterior Compartment Arm: Muscles and Nerves.
Structures Passing Through the Anterior Fascial Compartment

- Brachial artery
- Musculocutaneous nerve
- Median nerve
- Ulnar nerve
Brachial Artery

- **Beginning** The brachial artery begins at the lower border of the teres major muscle as a continuation of the axillary artery.
- **It provides the main arterial supply to the arm.**
- **Termination** It terminates opposite the neck of the radius by dividing into the radial and ulnar arteries.
- **Relations**
  - **Anteriorly:** The vessel is superficial and is overlapped from the lateral by the coracobrachialis and biceps. The medial cutaneous nerve of the forearm lies in front of the upper part; the median nerve crosses the middle part; and the bicipital aponeurosis crosses its lower part.
  - **Posteriorly:** The artery lies on the triceps, the coracobrachialis insertion, and the brachialis.
  - **Medially:** The ulnar nerve and the basilic vein in the upper part of the arm; in the lower part of the arm, the median nerve lies on its medial side.
  - **Laterally:** The median nerve and the coracobrachialis and biceps muscles lie above; the tendon of the biceps lies lateral to the artery in the lower part of its course.
Branches of brachial artery

- **Muscular branches** to the anterior compartment of the upper arm
- **The nutrient artery** to the humerus
- **The profunda artery** arises near the beginning of the brachial artery and follows the radial nerve into the spiral groove of the humerus.
- It supplies muscular branches, the nutrient artery of the humerus, and finally divides into terminal radial and middle collateral branches.
- **The superior ulnar collateral artery** arises near the middle of the upper arm and follows the ulnar nerve.
- **The inferior ulnar collateral artery** arises near the termination of the artery and takes part in the anastomosis around the elbow joint
Anterior circumflex humeral artery

Brachial artery

Triceps brachii muscle

Superior ulnar collateral artery

Ulnar artery

Radial artery

Muscular branch

Long head

Short head

Biceps brachii muscle

Long head

Medial head
Musculocutaneous Nerve

- The origin of the musculocutaneous nerve from the lateral cord of the brachial plexus (C5, 6, and 7).
- It runs downward and laterally, pierces the coracobrachialis muscle, and then passes downward between the biceps and brachialis muscles.
- It appears at the lateral margin of the biceps tendon and pierces the deep fascia just above the elbow.
- It runs down the lateral aspect of the forearm as the lateral cutaneous nerve of the forearm.
Branches of musculocutaneous nerve

- Muscular branches to the biceps, coracobrachialis, and brachialis

- Cutaneous branches; the lateral cutaneous nerve of the forearm supplies the skin of the front and lateral aspects of the forearm down as far as the root of the thumb.

- Articular branches to the elbow joint
FIGURE 7-12 Anterior Compartment Arm Muscles and Nerves
Median Nerve

- The origin of the median nerve from the medial and lateral cords of the brachial plexus in the axilla.
- It runs downward on the lateral side of the brachial artery. Halfway down the upper arm, it crosses the brachial artery and continues downward on its medial side.
- The nerve, like the artery, is therefore superficial, but at the elbow, it is crossed by the bicipital aponeurosis.
- The median nerve has no branches in the upper arm, except for a small vasomotor nerve to the brachial artery.
Ulnar Nerve

- The ulnar nerve passes behind the medial epicondyle of the humerus and enters the front of the forearm by passing between the two heads of the flexor carpi ulnaris.
- It then runs down the forearm between the flexor carpi ulnaris and the flexor digitorum profundus muscles.
- In the distal two thirds of the forearm, the ulnar artery lies on the lateral side of the ulnar nerve.
- At the wrist, the ulnar nerve becomes superficial and lies between the tendons of the flexor carpi ulnaris and flexor digitorum superficialis muscles.
- The ulnar nerve enters the palm of the hand by passing in front of the flexor retinaculum and lateral to the pisiform bone.
ULNAR NERVE

• Motor Functions: Innervates the muscles of the hand (apart from the thenar muscles and two lateral lumbricals), flexor carpi ulnaris and medial half of flexor digitorum profundus.

• Sensory Functions: Innervates the anterior and posterior surfaces of the medial one and half fingers, and associated palm area
Musculocutaneous nerve  
(dominant nerve to anterior compartment muscles of arm)

Median nerve  
(dominant nerve to anterior compartment muscles of forearm, thenar hand muscles)

Radial nerve  
(dominant nerve to posterior compartment muscles of arm and forearm)

Ulnar nerve  
(dominant nerve to muscles of hand, flexor carpi ulnaris and medial half of flexor digitorum profundus in forearm)
THANK YOU