MEDICAL EDUCATION RESOURCE

Compartments of the Arm

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Overview

- The **arm (brachium)** is divided by the **lateral and medial intermuscular septa** into:
  - **Anterior (flexor) compartment**
  - **Posterior (extensor) compartment**
- The **deep fascia of arm (brachial fascia)** encloses both compartments and provides attachment for muscles and septa.
- **Neurovascular arrangement**:
  - **Anterior compartment** ? supplied mainly by **musculocutaneous nerve**; blood supply by **brachial artery**.
  - **Posterior compartment** ? supplied by **radial nerve**; blood supply by **profunda brachii artery**.

Anterior Compartment of the Arm

Muscles

The **anterior compartment** contains three muscles:

1. **Biceps brachii**
2. **Coracobrachialis**
3. **Brachialis**

All three muscles are **supplied by the musculocutaneous nerve** (C5–C7).

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1. Biceps Brachii

Origin

- **Long head:** Supraglenoid tubercle of scapula (tendon passes through shoulder joint capsule and intertubercular sulcus).
- **Short head:** Tip of coracoid process of scapula.

Insertion

- **Radial tuberosity** and **bicipital aponeurosis** (which blends with deep fascia of forearm).

Nerve Supply

- Musculocutaneous nerve (C5, C6).

Actions

- Flexes elbow joint.
- Supinates forearm (especially when flexed).

- Assists in shoulder flexion (weakly).

Clinical Anatomy

- **Biceps reflex** (C5, C6) used for neurological testing.
- **Biceps tendon rupture** ? “Popeye deformity” (bulging of muscle belly).
- **Tenosynovitis of long head** ? shoulder pain.

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2. Coracobrachialis

Origin

- Tip of coracoid process of scapula (with short head of biceps).

Insertion

- Middle of medial border of humerus.

Nerve Supply

- Musculocutaneous nerve (C5–C7).

Actions

- Flexes and adducts arm at shoulder joint.

Clinical Anatomy

- **Musculocutaneous nerve** pierces coracobrachialis — a useful identification landmark during dissection.
- Hypertrophy or fibrosis may compress the nerve.

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3. Brachialis

Origin

- Lower half of anterior surface of humerus.

Insertion

- Coronoid process and tuberosity of ulna.

Nerve Supply

- Musculocutaneous nerve (C5, C6).
- Radial nerve gives small branch to lateral part.

Actions

- Chief flexor of elbow joint (acts in all positions of pronation/supination).

Clinical Anatomy

- Important in **testing C6 segment** of spinal cord.
- Deep to biceps — easily injured in fractures of lower humerus.

Nerves and Vessels in Anterior Compartment

- **Musculocutaneous nerve:** motor to all three flexor muscles; continues as **lateral cutaneous nerve of forearm**.
- **Median nerve:** runs medially to brachial artery but gives **no branches in arm**.
- **Ulnar nerve:** passes medial to brachial artery ? pierces medial intermuscular septum ? behind medial epicondyle.
- **Brachial artery:** main arterial trunk; gives off **profunda brachii, superior and inferior ulnar collateral arteries**.