Clavicle

Clavicle

General Features

- Long bone placed **horizontally** in the root of the neck.
- Connects **axial skeleton (sternum)** to **appendicular skeleton (scapula)**.
- Acts as a **strut** to keep the upper limb away from the trunk ? permits free mobility.
- Curved in an **S-shape**:
  - Medial two-thirds ? convex forward.
  - Lateral one-third ? concave forward.
- Subcutaneous throughout ? easily palpable.
- Classified as a **modified long bone**:
  - No medullary cavity.
  - Ossifies in membrane.

Attachments & Relations (Summary)

- **Medial end** (sternal end): articulates with manubrium sterni (sternoclavicular joint).
- **Lateral end** (acromial end): articulates with acromion process of scapula (acromioclavicular joint).
- **Superior surface**: subcutaneous, no major attachments.

- **Inferior surface**:
    - Medial part ? costoclavicular ligament (rhomboid fossa).
    - Lateral part ? conoid tubercle (conoid ligament), trapezoid line (trapezoid ligament).
- **Anterior border (lateral third)** ? deltoid.
- **Posterior border (lateral third)** ? trapezius.
- **Medial two-thirds** ? origin of sternocleidomastoid (superior surface), pectoralis major (anterior surface), sternohyoid (posterior surface).

Ossification of Clavicle

- **First bone to ossify** in the body.
- **Begins: 5th–6th week intrauterine life**.
- **Mode**: membranous ossification (shaft), with cartilaginous ossification at the ends.
- **Primary centers**: two, appear in shaft, fuse by 45 days of IUL.
- **Secondary center**: appears in sternal end at **15–17 years**, fuses by **21–22 years**.
- Unique because:
    - Both **membranous and cartilaginous ossification** occur.
    - First to ossify, last to complete ossification.

Clinical Anatomy

- **Most commonly fractured bone** in the body.
    - Fracture usually at the junction of medial two-thirds and lateral one-third.

    - Medial fragment displaced upward by sternocleidomastoid.
    - Lateral fragment displaced downward by weight of limb & pulled medially by pectoralis major.

- May be absent congenitally (cleidocranial dysostosis) ? shoulders approximated in front of chest.
- Subcutaneous position ? prone to injury in falls, traffic accidents.
- Important landmark for central venous catheterization (subclavian vein lies posterior to clavicle).
- Ossification pattern important in **forensic age estimation**.