SNS COLLEGE OF ALLIED HEALTH SCIENCE

Affiliated to The Tamil Nadu Dr MGR Medical University, Chennai

DEPARTMENT OF CARDIAC TECHNOLOGY

COURSE NAME: ANATOMY RELATED TO CARDIAC TECHNOLOGY

UNIT : 1

TOPIC : OESTEOLOGY - BONES OF THE SHOULDER REGION

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Definition

OSTEOLOGY

INTRODUCTION (DEFINE)

- Osteology is the study of bones.
- The bony and cartilaginous framework of the body constitutes the skeleton.
- The human skeleton is internal to muscles, so it is described us an endoskeleton.
- In lower animals such as insects, the muscles are attached to the inner aspects of rigid material which also offers protection-this type of skeleton is called an exoskeleton.

- It forms the structural framework of the body.
- Skeleton includes bones, cartilage and joints.
- It is bilaterally symmetrical.
- It can be studied in two parts

Axial skeleton:

- This includes bones of head (skull)
- vertebral column
- ribs
- sternum.
- Hyoid bone is also the part of axial skeleton.

Appendicular skeleton: It consists of bones of extremities

- upper limb
- lower limb

APPENDICULAR SKELETON

- Bones ferming upper limb
- Clavile
- Scapula
- Humerus
- Radius
- Ulna
- Carpal bones: Scaphoid, lunate, triquetral, pisiform, trapezium, trapezoid, capitate and hamate , 5 Metacarpals
- 14 Phalanges

Bones forming lower limb

- Ilium
- Ichium
- Pubis
- Femur
- Patella
- Tibia and Fibula
- 8 tarsal bones: Talus calcaneum, navicular, cuboid and three cuneiform bones
- 5 Metatarsals
- 14 Phalanges

FUNCTIONS OF THE SKELETON

- Skeleton forms the structural framework of the body
- It supports the body
- It transmits the weight of the body
- Bones and joints act as a biochemical lever on which muscles act to produce motion
- Skeleton of head and vertebral column protect the vital organs, namely brain and spinal cord
- Skeletal framework of thoracic cage (ribs and sternum) provides space for the respiratory movements and protects the heart and lungs.
- It provides structural support in ear, larynx, and trachea wheres rigidity is not required.

APPENDICULAR SKELETON - UPPER LIMB

SHOULDER REGION - Clavicle

- Clavicle (meaning “Little key”)
- The clavicle is a long bone.
- It is a part of the pectoral girdle or shoulder girdle, which serves to attach the upper limb to the trunk
- Clavicle supports the shoulder so that the arm can swing clearly away from the trunk.
- It transmits the weight of the limb to the sternum.

PARTS

- The lateral end (acromial end) is flattened, articulates with the acromion process of scapula to form the acromioclavicular joint.

  The medial end (sternal end) is larger, almost rounded, articulates with manubrium sterni to form sternoclavicular joint.

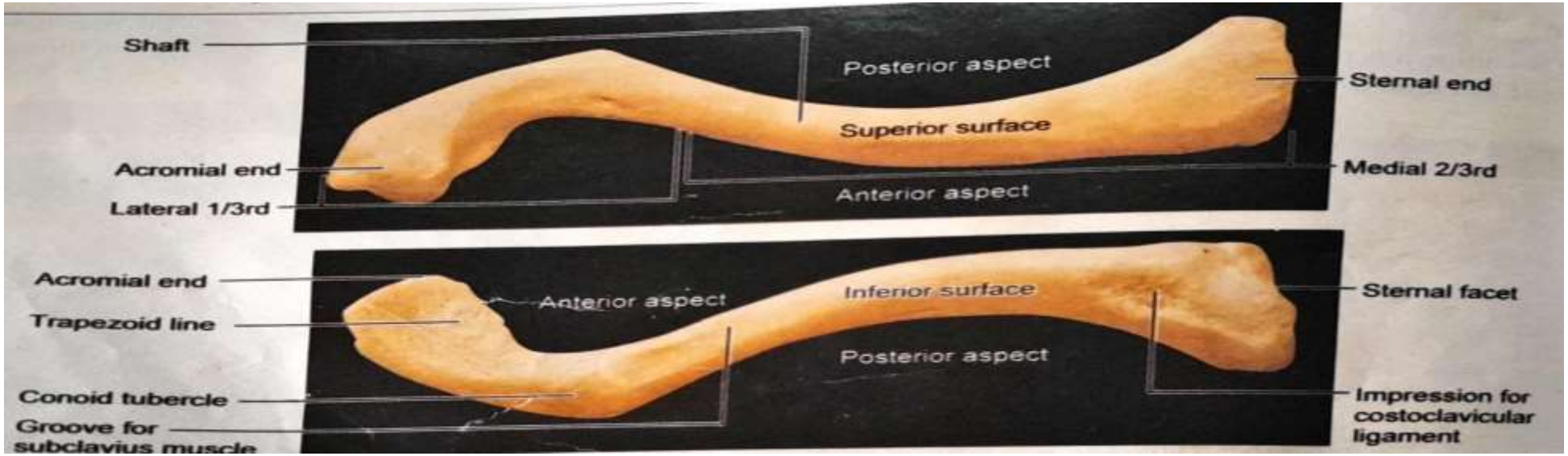
  The shaft is divisible into medial two-thirds and lateral one-third.

  The medial two-third is convex forward.

  The lateral one-third is concave forward.

Side Determination

- The side to which a clavicle belongs can be determined from the following points
- Lateral end is flattened; medial end large and almost rounded.
- Medial two-third of shaft convex forward; lateral one-third concave forward



Scapula

- Scapula "shoulder blade" is a large, flat triangular bone.
- It has two surfaces, three borders, three angles and three processes.
- Parts of Scapula
- Surfaces
- Costal surface (which faces the ribs) is concave.
- It isalso called the subscapular fossa.
- The subscapularis muscle takes origin from this fossa.
- The serratus anterior muscle is inserted along the medial border of the costal surface.
- Dorsal surface:
- A prominent spine divides this surfaceinto a smaller, upper supraspinous fossa and a larger infraspinous fossa giving origin to supraspinatus and infraspinatus muscles, respectively.

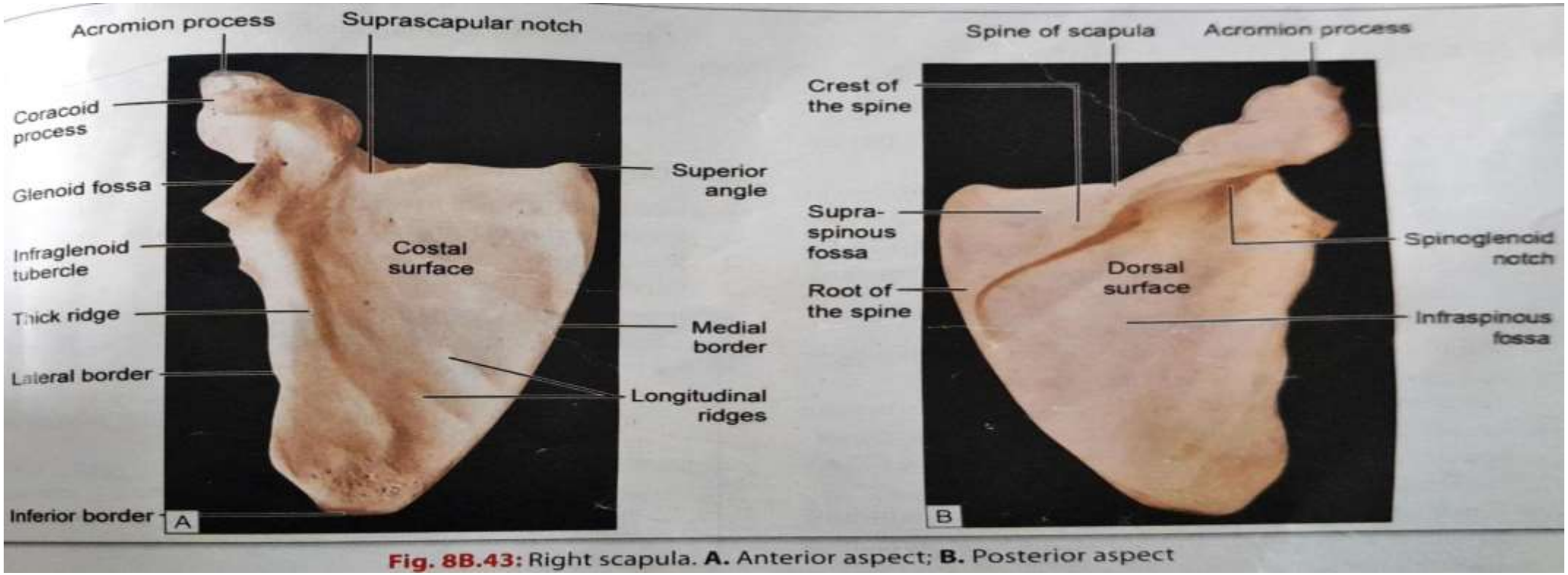


Fig. 8B.43: Right scapula. **A.** Anterior aspect; **B.** Posterior aspect

- REFERENCE
- Ross and willson book of anatomy
- Ashalatha book of anatomy