ANATOMY OF THE ELBOW

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ELBOW REGION
INTRODUCTION
OSTEOLOGY
JOINTS
BLOOD SUPPLY
CUBITAL FOSSA
OLECRANON REGION

INTRODUCTION

- IMPORTANCE
- CARRYING ANGLE
  - Varies with gender: Males: 5-10 degrees, Female: >15 degrees
  - 190 degrees
  - >15 degrees- cubitus valgus
  - <5 degrees- cubitus varus

  *Younger- fracture, ligaments stonger than bone
  Older- dislocation (most common:posterior), bone stronger than ligaments

ELBOW

- CARRYING ANGLE
  Horizontal axis: in valgus- internally rotated which will result into the formation of the carrying angle

OSTEOLOGY

- DISTAL HUMERUS
  - Distal humerus is triangular in shape, 2 columns: lateral and medial. Medial consists of medial epicondyle, lateral column consists of lateral epicondyle and capitulum.
  - In between the 2 columns is the trochlea. Above trochlea and capitulum, is the coronoid fossa and radial fossa, respectively. Posteriorly, is the olecranon fossa.
  - 2 articular surfaces of the distal humerus: capitulum and trochlea
  - Above that are 2 depressions: on the radial or capitellar side of radial fossa.
  - Above trochlea is olecranon fossa.
  - Anteriorly, 2 depressions anteriorly: radial fossa and coronoid fossa, posterior aspect: olecranon fossa.
  - In between the coronoid fossa anteriorly and the olecranon fossa posteriorly, separated by a thin bone (a part that makes up the elbow joint) – in growing children, most common area that sustains a fracture.

- PROXIMAL ULNA
  - Proximal ulnar component- olecranon and trochlear/semilunar notch which correlates the trochlea
  - Articular surface- radial notch- articulates with radial head
  - Anterior to trochlear notch- coronoid process

- RADIAL HEAD
  -Articular surface- concave, cup-like depression
  - Outer circumferential mark that articulates with the radial notch (part of radius that participates in the formation of elbow joint)

JOINTS

- RADIOCAPITELLAR JOINT/RADIOHUMERAL JOINT
  - Radial head with capitellum
  - Hinge (flexion & extension)
- ULNOHUMERAL JOINT
  -Trochlear/semilunar notch with the trochlea
  -hinge joint, movements: flexion and extension
- PROXIMAL RADIOULNAR JOINT
  -Radial head with the radial notch of the ulna
  -pivot joint, movements: insupination and inpronation
  *Dominant hand- most movements involve inpronation; Nondominant hand-favors insupination
- TYPE OF JOINT
  - HINGE JOINT
  - PIVOT JOINT
- STABILITY
  -OSSEUS CONFIGURATION
  -LIGAMENTS
    - MEDIAL COLLATERAL LIGAMENT
    - LATERAL COLLATERAL LIGAMENT
    - ANNULAR LIGAMENT
  -MUSCLES

STABILITY OF THE ELBOW

- VALGUS STABILITY
  - 54% IS PROVIDED BY THE LIGAMENT (Medial collateral ligament)
  - 33% IS PROVIDED BY RADIAL HEAD
  - 10% CAPSULE
  - FLEXOR/PRONATOR MUSCLE- DYNAMIC STABILITY
- VARUS STABILITY
  - 75% ULNOHUMERAL ARTICULATION- because of shape of trochlear notch which is concave to accommodate the trochlea
  - 9% LIGAMENT (LATERAL COLLATERAL LIGAMENT)
  - 13% CAPSULE
  - ANCONEUS-DYNAMIC STABILIZER
- ANTEROPOSTERIOR STABILITY
  - OSSEUS ARRANGEMENT

LIGAMENTS

- MEDIAL COLLATERAL LIGAMENT
  -located medial to the elbow
  -3 components:
  1. Anterior band (major contributor) arises from medial epicondyle and inserts into the coronoid tubercle; cordlike