

Fractures of the Upper Limb

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Definition

Incidence

Age

Trauma

Clinical Picture

Associated Injuries

Complications

Bone

Nerve

Muscle

Deformity

Treatment

Supracondylar fracture Humerus

In Children

Supracondylar Fracture Humerus in Children

=

VASCULAR INJURY!!!!!!!!!!!!!!!

Till proven otherwise!!!!

Definition

Extra-articular Fracture involving the thin bone between coronoid fossa & olecranon fossa of distal humerus.



Incidence and age

Frequent in Children

Most Common 6- 7 yrs of age

Trauma

Fall on outstretched hand

Similar trauma in Adult may cause elbow dislocation

Clinical Picture

General Principles
Deformity

Two Types

Extension Type 99%

Flexion Type 1%

Extension Type 99%

DISTAL Fragment

Displaced backwards and upwards... i.e.:
Extended in relation to proximal fragment.



Flexion Type 1%

Distal fragment displaced forwards and upwards (flexed) in relation to proximal fragment

Associated Injuries

VASCULAR INJURY!!!!!!!!!!!!!!

Brachial Artery especially Posterolateral displacement 5%

Palpate RADIAL Pulse!!!!!!



Complications

Skin: Open {Compound} or Infection

Muscles: Myositis ossificans

Vessels: Volkman's Ischaemic contracture

Nerves: Median, Radial, or Ulnar

Joint: Stiffness

Bone: Malunion: Cubitus Varus, or Valgus

Nonunion

Complications

Muscles: Volkman's Ischaemic Contracture

Brachial Artery Injury -> Ischaemia -> Massive infarction of muscles of forearm -> fibrosis..... Necrosis, Median nerve entrapment.

Early: Acute Ischaemia

Late: Deformity Flexion wrist, and IP joints, with Extension MCP joints



Complications

Bone: Cubitus Varus



www.dr



Complications

Myositis Ossificans

Periosteum Avulsion-> proliferation of cells in hematoma-> new bone formation Brachialis muscle

Early: Loss of range of motion

Later 6 wks: Radiological "cloud" of bone, denser-> new bone

Treatment

VASCULAR INJURY

Reduction and Plaster Immobilization

Closed Reduction and Pinning

Open Reduction and Pinning

Treatment

Closed Reduction and Pinning



Treatment

Open Reduction and Pinning



Colles' Fracture

Old Women's Fracture

www.drnasef.com

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Definition: *Extra-articular* Fracture of the distal inch of the radius usually comminuted and Impacted.

Commonly occurs in older women
? Osteoporosis

Associated with:
Ulnar Styloid
Tear Triangular Fibrocartilage



Trauma: Fall on the outstretched hand

“Dinner Fork Deformity”

Distal Fragment

- Upwards
- Backwards
- Laterally

-Radial Styloid should be longer/
Distal to Ulnar Styloid



Associated injuries:

Ulnar Styloid

Median Nerve Entrapment Carpal Tunnel Syndrome

Complications:

Bone: Malunion Common due to displacement in cast

Nerve: CTS (Median nerve)

Muscle, Tendon: Tear of EPL

Joint: Stiffness / Sudeck's Atrophy

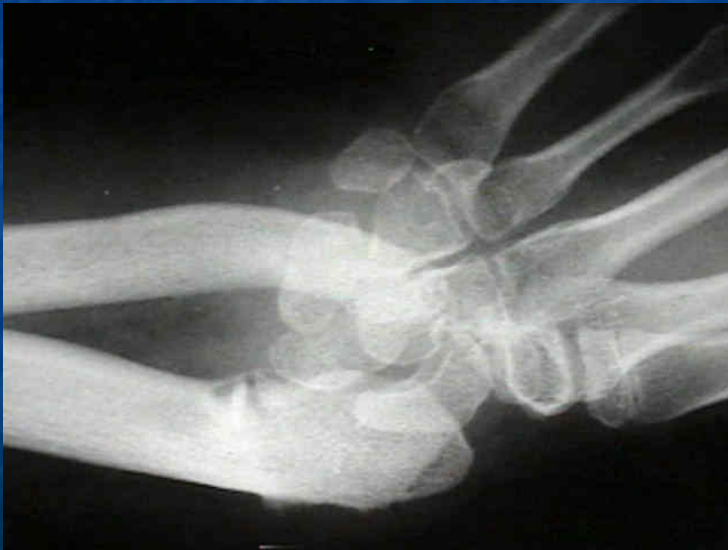
Deformity: Loss of Forearm Pronation and Supination

Madelung's Deformity:

Children

Arrest of growth on the radial side

Hand and wrist deviates radially



Treatment:

Reduction and Immobilization

3 hand grip Method of Reduction!

Cast immobilization

Treatment:

Closed Reduction and Pinning



Treatment:

Closed Reduction and External Fixation +/-
Pinning



Treatment:

Open Reduction and Internal Fixation



Shoulder Dislocation

Causes of Shoulder Instability

- Large head Humerus
- Shallow Glenoid Cavity
- Wide Range of motion
- Capsular laxity
- Lack of support by strong muscles and ligaments

Shoulder Dislocation

Anterior Dislocation



Shoulder Dislocation

Anterior Dislocation

Fall on outstretched hand i.e. Extension, ext rotation and full abduction-> weak anterior capsule-> rupture-> Dislocation

Head -> Subcoracoid
Subglenoid
Subclavicular

Anterior Dislocation

Clinical Picture: General

Swelling

Flattening of Shoulder Contour

Deformity: Abduction and Ext Rotation

Anterior Dislocation

Complications:

Rupture Capsule -> Recurrent Dislocation

Glenoid Labral Tear, Rotator Cuff tear (older)

Nerve: Axillary nerve

Artery: Axillary Artery

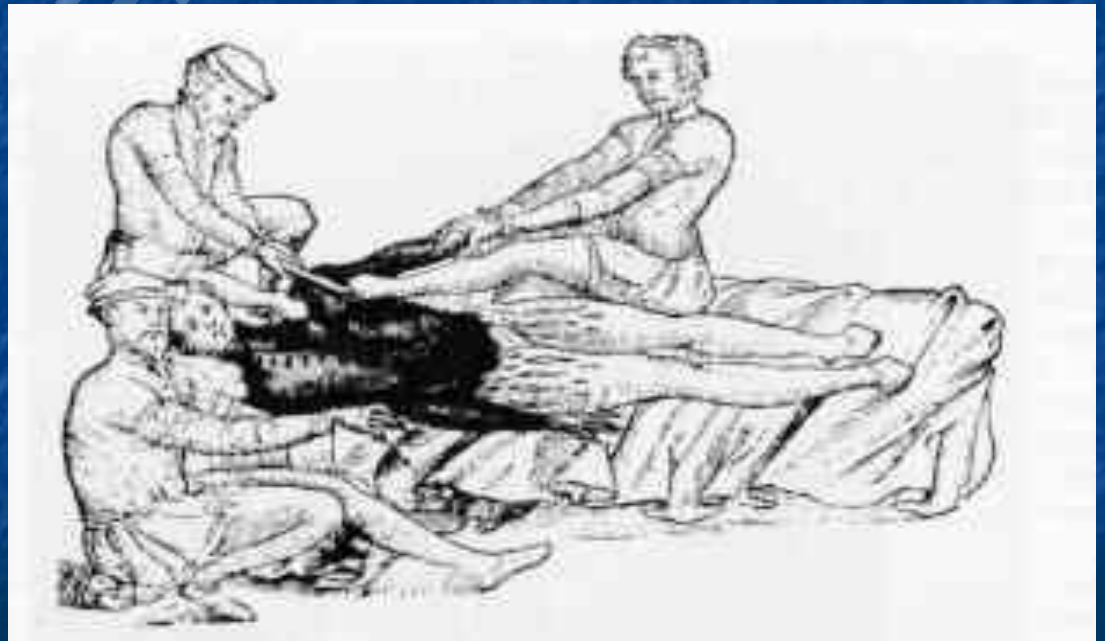
Bone: Fracture (head, neck) Humerus... # dislocation

Anterior Dislocation

Treatment:

Reduction UNDER GA!!

Sling 3weeks



Posterior Dislocation

Anteriorly directed force
Electrocution, Convulsions!

Recurrent Dislocation

Radiolocations may reoccur with Abduction and external rotation movements

Treatment:

Strengthen weak anterior capsule by muscle ligaments, bone!

Fracture Clavicle

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•Trauma: Direct: Hit by stick

Indirect: *fall on the outstretched hand*

Site: Commonest *Middle Third*

Meeting of Two Curves

Subclavius Muscle Insertion

Nutrient Artery Entrance

Change of contour circular to triangular



- Clinical Picture: General
 - Loss of Function Carrying Injured limb like “mother cradling a baby”
 - Deformity; Medial end pulled upwards by Sternomastoid, lateral pulled downwards and forwards by limb weight and Pectoralis

Complications

Skin

Muscle

Vessels: Subclavian Vs and Brachial Plexus Injury

Bone: Malunion

Joint

Treatment

Broad Arm Sling 3-6 weeks



Elbow Dislocation

ADULTS!!

Posterior Dislocation: Fall on outstretched....

Ulna migrates backwards and upwards, associated with # coronoid, radial head...easy reduction



Anterior Dislocation: Fall on elbow point, # olecranon and ulna migrates up and forwards

Clinical Picture

Pain Tenderness....

Swelling

Disturbance of normal triangular relationship between 3 points of elbow..

Medial, lateral epicondyles,
and olecranon



Thank You

The image features the words "Thank You" written in a blue, elegant cursive script. The text is centered within a white rectangular area that has a thin blue border. On either side of the text, there are decorative blue flourishes consisting of swirls and leaf-like shapes. The entire graphic is set against a dark blue background with a subtle, textured pattern.