

# Fractures of the diaphysis of the humerus

- are caused by direct and indirect mechanisms (blow, fall, ...)
- frequent fracture during overstretching (popularly lever) due to torsional force
- definition of the diaphysis of the humerus - proximally the tendon of the m. pectoralis major, distally 4 cm above the elbow

## AO classification

**A** – simple (I – spiral, II – oblique, III – transverse)

**B** – wedge-shaped (I – spiral wedge, II – bending wedge, III – split wedge)

**C** – complex

**dislocation of the proximal fragment** (according to this, then adduction or abduction fracture)

- fracture above the tendon of m. deltoideus – traction m. pectoralis major into adduction
- fracture above the tendon of m. deltoideus – traction m. deltoideus into abduction

## Clinical signs and diagnosis

- classic symptoms of fracture (pain, deformity, pathological mobility, oedema and heematoma, crepitations)
- it is necessary to examine the pulse on the a. radialis and innervation of the nervus radialis (sensitivity + motor - wrist and finger extensions)
- X-ray in two projections (also view of adjacent joints - shoulder + elbow)

## Complications

- n. radialis and a. brachialis injuries (it is necessary to examine innervation + pulse of a. radialis)
- Late complications include the formation of a tuberosity and irritation of the n. radialis by hypertrophic muscle

## Treatment

### Conservative

- **repositioning**,
- **fixation** (hanging cast, Desault, abduction splint, circular brace - functional treatment according to Sarmiento),
- early warm-up of the shoulder
- acceptable for conservative treatment are dislocation up to  $\frac{1}{2}$  diaphyseal width, shortening up to 1 cm, angulation up to 25°, immobilization for 4-12 weeks,

### surgical

- if not repairable, concomitant neurovascular injury, open fractures
- **nitra-articular osteosynthesis** (most common - secured nail, ante- or retrograde) - transverse, short oblique and splinter
- **splint osteosynthesis** (DCD – dynamic compression plate) – spiral and long-angled fractures, injuries of the n. radialis
- **external fixation** – open fractures with soft tissue damage, polytrauma

## Links

### Related articles

- Fractures of the humerus

### Source



Splinter fracture of the diaphysis of the humerus with muscle formation

- PASTOR, Jan. *Langenbeck's medical web page* [online]. [cit. 2022-16-12]. <<http://langenbeck.webs.com>>.