

# Nerve injuries of the upper limb

## N. axillaris

- motor innervation – m. deltoideus, m. teres minor
- injuries – dislocation of the shoulder, fractures of the neck of the humerus, blunt trauma on the shoulder
- weakening of the external rotation and elevation of HK to the horizontal
- disturbance of the sensory innervation above the deltoid
- Rapid atrophy of the deltoid

## N. musculocutaneus

- innervation of elbow flexors
- isolated damage is very rare

## N. radialis

- it occurs more often on the arm with fractures of the elbow and humerus ( mostly below the distance of the nerve's branches for the triceps) or it occurs iatrogenically
- therefor wrist extension, thumb abduction and metacarpophalangeal extensions are important. Joints - swan's neck

## N. ulnaris

- the injury mostly occurs on the arm (sulcus bicipitalis medialis - often together with the median and brachialis arteries, or along the funny bone (in the case of the elbow fractures). on the forearm, the nerve is prone to injuries from cuts
- clinical picture – inability to hyperadduct the thumb, atrophy of the interosseous muscles, "claw hand"

## N. medianus

- the vast majority of injuries are on the volar side of the forearm from cutting injuries
- motor failure - preacher's hand - when trying to make a fist, only two fingers innervated by the ulnar nerve are clenched
  - thumb opposition disorder
- sensory innervation is affected

## Plexus brachialis

- the most complex and severe PNS injury is the brachial plexus injury
- we divide it into:
  - closed supraclavicular injury - the roots are torn from the spinal cord by a traction mechanism (avulsion)
    - typical after motorcycle accidents
  - closed infraclavicular injury - rare, with shoulder dislocation
    - open
- clinical picture:
  - upper type of lesion (20 -30%) - C5-6 involvement
    - "good hand on paralysed shoulder and arm" - hand and wrist work, arm and shoulder do not
  - the lower type of injury (10-20 %) - C8 - Th1 involvement
    - " paralysed hand on good shoulder and arm"
  - complete type (60 %) – flapping limb
- diagnosis - it is very complex, the dominant role of EMG, hearing examination

## Links

### Related articles

- Axillary nerve palsy
- Median nerve palsy
- Radial nerve palsy
- Ulnar nerve palsy

### Source

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2009. [cit. 2010]. <<http://jirben.wz.cz>>.

## Reference

- ZEMAN, Miroslav. *Speciální chirurgie*. 2. edition. Galén, 2004. pp. 575. ISBN 80-7262-260-9.