BRACHIAL PLEXUS – nerves & important lesions

RANDY TRAVIS DRINKS COLD BEER!!

ROOTs- ventral primary rami C5 – T1 (between ant. & mid scalenes)
  LONG THORACIC NERVE (C5, C6, C7): can be injured by stab wound or removal of LNs during a mastectomy.
  -paralysis of SERATUS ANT -> no abduction past horizontal position; can’t push
  - to test fxn: push against wall -> WINGED SCAPULA

TRUNKs – (in post triangle of the neck)
  UPPER – C5 & C6
    Erb-Duchenne Injury (C5,C6): sudden, violent stretch b/n head & shoulder. (trauma during birth, falling on neck & shoulder)
    Nerves Injured: MC, Suprascapular, Axillary, Phrenic
    Clinical: Pronated & medially rotated arm (WAITER’S TIP)
  MIDDLE – C7
  LOWER – C8 & T1
    Klumpke Injury (C8,T1): sudden upward pull of arm (abduction injury)
    Nerves Injured: Median, Ulnar, Sympathetics of T1 spinal nerve
    Clinical: Loss of fxn of wrist & hand (possible Horner’s-M, AH, Ptos)

DIVISIONs – 3 anterior/3 posterior (deep to clavicle; named in relation to Axillary Art.)

CORDs – (in axilla, deep to pec. Minor) LATERAL, MEDIAL, & POSTERIOR

BRANCHes – five major terminal branches…..
  MUSCULOCUTANEOUS (C5, C6, C7)
    AXILLARY (C5, C6): can be injured by fracture of surgical neck of humerus or anterior dislocation of the shoulder joint
    -paralysis of the deltoid muscle -> can’t abduct up to horizontal position
    -paralysis of teres minor -> lateral rotation weakened
    -sensory loss on lateral side of upper arm

    RADIAL (C5, C6, C7, C8, T1): can be injured by midshaft fracture of humerus;
    Badly fitted crutch; falling asleep with arm over chair (SAT NIGHT PALSY)
    -can’t extend wrist or fingers; supination is compromised
    -EXTENSION OF FOREARM IS OK (innervation to TRICEPS is intact)
    -sensory loss on posterior arm, post. forearm, and lateral dorsum of hand
    -WRIST DROP
MEDIAN (C5, C6, C7, C8, T1)

AT ELBOW or AXILLA: injured from supracondylar fracture of humerus
-weakened flexion of wrist (hand deviates to ulnar side); flexion of index & middle fingers at DIP & PIP, and MP joints lost, pronation lost; abduction, opposition, and thumb flexion lost
-sensory loss on palmar & dorsal aspects of index, middle, & half of ring finger & palmar aspect of thumb
-APÉ HAND (thenar eminence is flattened)
-BENEDICTION HAND (when pt makes fist, the index & middle fingers stay straight while the ring & index fingers flex)

AT WRIST: injured by slashing wrist (SUICIDE) or by carpal tunnel syndrome
-flexor muscles in arm are NOT paralyzed
-paralysis of ABD. Pollicis Brevis, opp. Pollicis, and FPB (no abduction or oppos)
-sensory loss on palmar & dorsal aspects of index, middle, and 1/2 of ring finger, & palmar thumb
- APE HAND

ULNAR (C8, T1)

AT ELBOW or AXILLA: injured b/c of fracture of medial epicondyle of humerus
-paralysis of FCU -> hand deviates radially when flexed
-paralysis of FDP -> lose flexion of ring & little fingers @ DIP
-paralysis of lumbricals 3 & 4 -> cant flex ring & little fingers @ MP; can’t extend ring & little fingers @ DIP & PIP joints; can’t abduct or adduct fingers; can’t flex @ MP; can’t extend @ DIP or PIP (palmar & dorsal interosseous)
-can’t adduct thumb; can’t move little finger
-sensory loss on palmar & dorsal part of little & 1/2 of ring fingers
-CLAW HAND

AT WRIST: injured by wrist slashing (SUICIDE ATTEMPT)
-no paralysis of FCU or medial part of FDP
-paralysis of lumbs. 3 & 4 -> can’t flex or extend ring & little finger @ MP;
can’t extend fingers @ DIP or PIP
-paralysis of AD. Pol. -> cant adduct thumb
-paralysis of AB. Dig. Min, FDM, Opponens -> cant move little finger
-cant extend fingers at DIP or PIP
-sensory loss on palmar & dorsal parts of little & 1/2 of ring finger