

examples of peripheral nerve injury

tibial nerve:

- Rarely injured except in open wounds in tibial fracture
- Paralysis of foot flexors → inability to walk on the toes (unable to plantar flex)
- Sensory loss over sole of the foot
- clinical features:

Peroneal nerves:

- fracture of the fibular head or around knee
- Compression: tight casts, sitting cross-legged
- Severe traction when the knee is forced into varus
- injuries:
- paralysis of foot and toe extensors (dorsiflexors) → high-stepping gait
- deep peroneal nerve injury:
 - Sensory: area between the first and second toes
- paralysis of muscles which make eversion which lead to lose it
- superficial peroneal nerve injury:
 - lateral surface of the lower leg, dorsum of the feet and toes, except for the space between the first and second toe
- clinical features:

Sciatic nerve:

- (cut) of the main sciatic nerve is rare.
- traumatic hip dislocations
- pelvic fractures
- lateral lesions (total hip replacement)
- Paralysis of hamstring muscles → impaired knee flexion
- Injuries: Traction lesions
- clinical features: ankle jerk is absent, Sensation is lost below the knee, except on the medial side of the leg, Foot-drop and a high-stepping gait.

Ulnar nerve:

- near the wrist
- Numbness of the ulnar one and a half fingers
- claw hand
- Weak finger abduction is weak and thumb adduction, makes pinch difficult.
- Hypothenar and interosseous wasting
- Froment's sign
- low lesions: clinical:
- near the elbow
- elbow fractures
- elbow dislocation
- less claw (high ulnar paradox)
- high lesions: clinical:
- compression or entrapment of the nerve in the medial epicondylar (cubital) tunnel.
- ulnar neuritis: severe valgus deformity of the elbow or prolonged pressure on the elbows in anaesthetized or bed-ridden patients.

Median nerve:

- near the wrist
- cuts in front of the wrist
- carpal dislocation
- unable to abduct the thumb
- sensation is lost over the radial three and half digits
- thenar eminence is wasted and trophic changes
- low lesions: clinical:
- high up in the forearm
- forearm fractures
- elbow dislocation
- pointing sign
- high lesions: clinical:
- the long flexors to the thumb, index and middle fingers
- the radial wrist flexors.
- the forearm pronator muscles.
- Same as low lesions; in addition to these paralyzed muscles.
- extremely rare
- isolated anterior interosseous nerve lesions: clinical: Similar to those of a high lesion but without any sensory loss.

Axillary nerve:

- origin (C5-C6)
- sensory: patch of skin over the muscle
- motor: Teres minor, deltoid
- injuries: shoulder dislocation, fracture of the humeral neck, iatrogenic.
- clinical: shoulder weakness, deltoid is rapidly wasted, numbness over deltoid

radial nerve:

- elbow or upper arm
- fracture of elbow
- dislocation of elbow
- low lesions: iatrogenic lesions of posterior interosseous nerve of the hand with weakness of thumb extension.
- clinical: Wrist extension is preserved because the branch to the extensor carpi radialis longus arises proximal to the elbow.
- humerus (around spiral groove)
- fracture of the humerus
- after prolonged tourniquet pressure
- Cannot extend the MCP joints or elevate the thumb
- high lesions: clinical: wrist drop, sensory loss of first web space
- axilla or shoulder
- trauma or operation around shoulder
- injuries: chronic compression in the axilla
- Saturday night palsy
- crutch palsy
- very high lesions: clinical: weakness in hand, wrist, triceps muscles, paralysed, reflex is absent
- Open injuries: nerve explored and repaired or grafted as soon as possible
- Closed injuries: usually recovers
- Splinting (while waiting for recovery, the wrist is splinted in extension).
- If no recovery → Tendon transfers.

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