

Case Brief

A 26 year old male has been brought into the ER after falling down from a bus. His vitals are stable but his right forearm is swollen and bruised. Physical examination shows the following

Motor Examination

Actions	Left Upper Limb	Right Upper Limb
Shoulder flexion	Normal	Normal
Shoulder extension	Normal	Normal
Elbow flexion	Normal	Normal
Elbow extension	Normal	Normal
Wrist flexion	Normal	Normal
Wrist extension	Normal	Normal
Finger flexion	Normal	Normal
Finger extension	Normal	Not possible

Sensory exam reveals no abnormalities.

Xray Right Forearm(AP view) was done



Questions

Q1) Identify the fracture.

Q2) Identify the nerve damaged. (Mention the specific part of the nerve implicated here)

Q3) Explain the absence of any sensory loss in this case.

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Answer Key

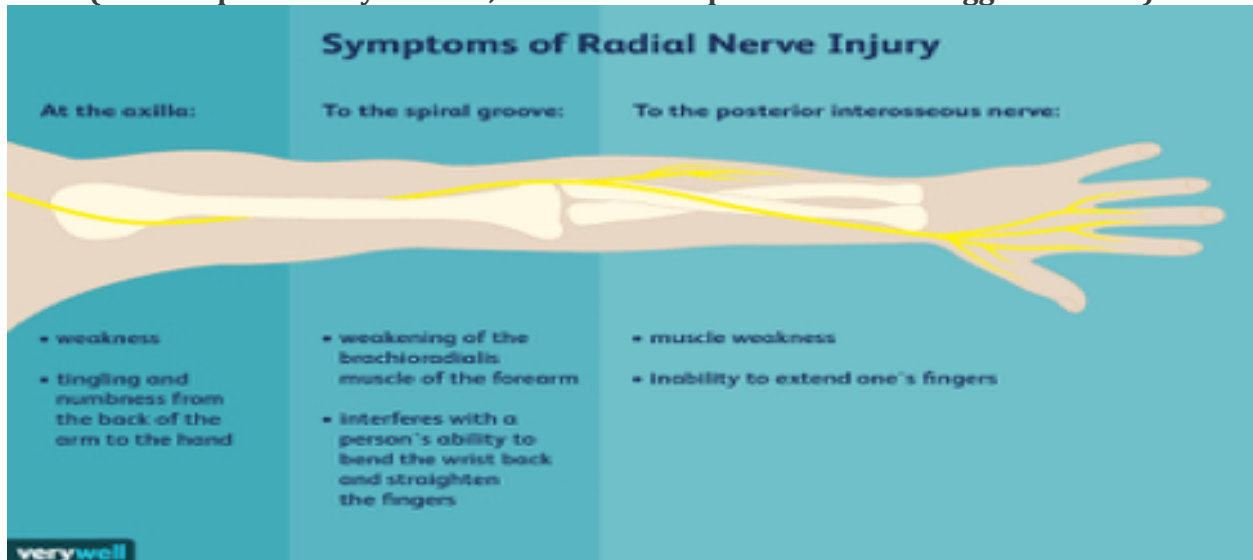
Diagnosis(in brief)- PIN compression syndrome due to Right sided Monteggia fracture.

Q1)Identify the fracture.

Ans) There is a fracture in the proximal ulna with dislocation of proximal radio ulnar joint.Hence it's a case of Right-sided Monteggia Fracture

Q2)Identify the nerve damaged.(Mention the specific part of the nerve implicated here)

Ans)Any problem of extension in upper limb must point one's suspicion towards the **radial nerve**.Now to pinpoint the site of lesion,one must ask the patient to extend the elbow.If not possible or weak,it indicates a high radial nerve lesion(at or above spiral groove).In this case,elbow extension is preserved.Next one has to look for wrist drop which occurs due radial nerve injury at elbow(at or above branch to ECRL).Wrist extension is possible here.**Now the next step is to look for finger extension which is impaired on the right side here.One must note that finger extension is mediated by extensor digitorum which is innervated by Posterior interosseus nerve.Hence injury is to the PIN branch of right radial nerve(PIN compression syndrome,a common complication of Monteggia fracture)**



Q3)Explain the absence of any sensory loss in this case.

Ans)At the cubital fossa,radial nerve divides into a superficial cutaneous branch (that innervates the cubital fossa and lateral aspect of dorsum of hand and three and a half digits except the fingernails and fingertips) **and a posterior interosseus branch that innervates the extensor compartments and is exclusively motor(proprioceptory branches are there for the wrist joint capsule).**Hence injury to PIN alone doesn't produce any sensory loss.