

# A Rare Case Of Post Traumatic Radio-Ulnar Synostosis

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## Intro

Post traumatic radio-ulnar synostosis is a rare complication with higher rate in head injury(18%). We report a rare case of post-traumatic radio-ulnar synostosis.

## Report

Mr H, a 38 year old gentleman had a motor vehicle accident and sustained right intracranial bleed(ICB), right lung apical contusion and open fracture Gustilo 2 of midshaft right radius and ulna. He was intubated and treated in ICU. Wound debridement was performed after cerebral protection protocol. Plating was planned but patient opted self-discharged. He came back after 3 months complaining of painless swelling of the forearm with limited movement. Examination revealed shortened right forearm in midprone position with hard swelling at midforearm. Supination and pronation were 0°, with good flexion/extension of elbow and wrist. X-ray and CT showed 4x5 cm synostosis of midshaft radius-ulnar with severe angulation. Two stage surgeries were performed. First was synostosis excision, osteotomy and monorail external fixator for gradual lengthening of ulnar. Second operation was plating of radius ulna with bone graft and free fat tissue interposition. At 8 months post operation, he achieved elbow supination at 90°, pronation 45°.



Figure 1: CT 3 months post trauma

## Discussion

Primary fixation was delayed in accordance to Damage Control Orthopaedic principles. The main surgical concerns were addressing the shortening of both bones and soft tissue, excising the huge synostosis, distortion of the neurovascular bundles and prevention of recurrence. Two stage surgeries were imperative

to address these issues. No consensus found regarding the use of radiotherapy in recurrence prevention. No complication or recurrence noted up to date at post-operative 8 months.

## Conclusion

Early fixation of the fracture should be considered especially for brain injury patients.

Functionality of the limb should be the primary indication for surgery in chronic cases. Neurovascular bundle was the priority during synostosis excision and restoration of radio-ulnar length compared to bony fixation.



Figure 2: Monorail application



Figure 3: 4 months post plating

## References

1. Dohn P, Khiami F, Rolland E, et al: Adult post-traumatic radioulnar synostosis. Orthop Traumatol Surg Res 98(6):709–714, 2012.