

CASE REPORT: EXPLOSIVE COMMINUTED RADIAL HEAD FRACTURE - DISLOCATION IN A YOUNG PATIENT. IS FIXATION WORTH TRYING ?

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Discussion

The optimal treatment for comminuted radial head fractures depends on patient age, comorbidities and lifestyle. Although it is tempting to replace the radial head when dealing with so daunting cases, one should consider twice before proceeding with what is essentially a salvage procedure and replace the radial head. We strongly believe that in young athletic individuals a try at fracture fixation is worth the surgical time and effort.

References

Li XY, Wang YL, Yang S, Han PF. Radial head arthroplasty vs. open reduction and internal fixation for the treatment of terrible triad injury of the elbow: A systematic review and meta-analysis update. *Exp Ther Med.* 2022 Jul 27;24(3):592. doi: 10.3892/etm.2022.11529. PMID: 35949335; PMCID: PMC9353546.

Ring D. Displaced, unstable fractures of the radial head: fixation vs. replacement--what is the evidence? *Injury.* 2008 Dec;39(12):1329-37. doi: 10.1016/j.injury.2008.04.011. Epub 2008 Aug 13. PMID: 18703190.

Wu PH, Shen L, Chee YH. Screw fixation versus arthroplasty versus plate fixation for 3-part radial head fractures. *J Orthop Surg (Hong Kong).* 2016 Apr;24(1):57-61. doi: 10.1177/230949901602400114. PMID: 27122514.



Introduction

A 28-year-old male patient sustained a fall from height while cliff running and had a Mason III comminuted fracture-dislocation of his radial head. He is left hand dominant. A decision to proceed with open reduction and internal fixation was made, due to his young age and very active lifestyle.

Case Report

A direct lateral Kocher's approach was used and the fracture fragments had to be identified and collected so as to proceed with the fixation. This was a copious endeavour as one of the two main fragments was lodged on the medial side, deep and medially to the biceps tendon insertion. Eventually and after collecting the fragments it was apparent that there was significant amount of plastic deformation of them and on top of that, only about a 30% of the radial head had an attachment with the radial metaphysis. The task of reconstructing the radial head around the remaining intact piece could not be achieved due to the morphology of the fracture and the amount of plastic deformation of the fragments. A decision to remove the intact part of the radial head was made on table and an osteotomy was performed. We re assembled the radial head on the scrub nurse table and provisionally stabilized it with 1.6 mm k-wires so as to end up with a circular head. We then used bone cement to fill in the gaps and ended up with a biological spacer. We then used a mini anatomical T-plate after pre-contouring it, to fix the radial head to the radial metaphyseal segment. The patient was put in above elbow 90 degrees backslab that included the wrist as well as the patient had an ipsilateral distal radial fracture which received a volar locking plate. Backslab was removed two weeks post-op and gentle range of motion was started. Six weeks post op, the patient has recovered remarkably well with a satisfactory and almost full ROM in the operated elbow. On x-ray signs of early healing are pointed out as well. Obviously we will have to monitor his condition for the next years but so far the clinical results are satisfactory.

