

## **Ulna Nonunion Repair with ICBG and Radial Head Reduction for Failed Monteggia Fracture**

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### **Background:**

Monteggia fracture dislocations are a complex elbow injury in which the proximal ulna is fractured and the radiocapitellar and proximal radioulnar joints dislocate in the direction of the ulnar deformity. Often challenging to diagnose initially, these fractures account for 1-5% of all elbow fractures and are known for their poor outcomes including ulnar nonunion and recurrent radiocapitellar subluxation. Causes include failure to obtain anatomic alignment of ulna during index surgery as malreduction of the ulnar results in malreduction of the radiocapitellar joint. Revision fixation of an ulna nonunion using a structural graft to restore length can allow for anatomic reduction of the ulna with subsequent reduction of the radiocapitellar joint.

### **Purpose:**

This video overview and case presentation demonstrates an ulna nonunion repair with iliac crest bone graft and radial head reduction for failed fixation of a Type 1 Monteggia fracture.

### **Methods:**

The anatomy, pathogenesis, diagnosis, and treatment options for an ulna nonunion with recurrent radial head dislocation for a failed Monteggia fracture fixation are reviewed. A case of a 62-year-old female with persistent elbow and forearm pain after sustaining a Monteggia fracture treated with open reduction and interal fixation at an outside hospital 6 weeks prior is presented. The injury occurred while she was a passenger in a motor vehicle accident. Her pain and decreased range of motion have impacted her activities of daily living. Radiographs obtained in office demonstrated an unhealed comminuted ulnar shaft fracture with shortening and an anteriorly dislocated radial head. After a thorough discussion of risks, benefits and prognosis, the patient elected to proceed with revision fixation including a nonunion repair of the ulna with iliac crest bone graft and radial head reduction.

### **Results:**

Ulnar length was restored and the radiocapitellar joint subsequently reduced after anatomic reduction of the ulna intraoperatively. Post-operatively, the patient was able to achieve near full elbow range of motion and was pain free.

### **Conclusion:**

Monteggia fractures have demonstrated mixed outcomes in the literature but consistently high revision rates are seen ranging from 19% to 35%. It is imperative to achieve anatomic restoration of the proximal ulna as proper ulnar reduction typically leads to the reduction of the radial head.