

## **Terrible Triad With Radial Head Arthroplasty Surgical Technique**

Christian Awah<sup>1</sup>, Ryan Xiao, Christine Williams, Jaehon M Kim

<sup>1</sup>Department of Orthopedics, Icahn School of Medicine at Mount Sinai

### **Case Overview**

This video demonstrates a surgical technique for fixation of a terrible triad posterolateral elbow fracture-dislocation. A 23-year-old man sustained such an injury after a mechanical fall. Pertinent anatomy related to traumatic elbow instability is reviewed. Fixation options and surgical approaches specific to the injury are discussed.

### **Methods/Technique**

The video demonstrates detailed steps of surgical exposure to maximize visualization. Coronoid comminution and ulnohumeral joint subluxation are managed via suture lasso fixation of the coronoid. Radial head arthroplasty is performed because of comminution of the radial head. The lateral collateral ligament avulsion is repaired with local tissue to the isometric point on the lateral epicondyle. Common extensor fascia is used to augment the lateral repair. The elbow was stable through full range of motion and posterolateral provocative maneuvers. The elbow was immobilized in a posterior splint in 90° of flexion. Range of motion exercises were initiated at 2 weeks postoperatively, with occupational therapy performed in a protective splint. Progressive elbow strengthening was initiated at 1 month postoperatively.

### **Results**

The patient achieved near full range of motion, returning to usual activities at 3 months postoperatively and weight training at 6 months postoperatively. Radiographs demonstrated a congruent elbow joint with anatomic reduction of the coronoid and a well-positioned radial head prosthesis.

### **Summary**

Anatomic reduction and secure fixation of the radioulnohumeral joint in patients with a posterolateral elbow fracture-dislocation restores good elbow function. Recognizing patterns of instability and achieving stable fixation are crucial, allowing for early range of motion and optimizing outcomes.