Elbow fracture dislocation:
What went wrong!

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- 23 yr old female, fall from a bike
- After E.R assessment, an isolated injury of her right arm is identified.
- Painful, swollen elbow and forearm
• The procedure is done by a colleague

• The patient returns 8 weeks later with ongoing elbow pain and stiffness

• Radiographs

Monteggia injuries
Expect good results when:
• Anatomic reduction of ulna
• Compression plate fixation for ulna fracture
• Closed management of radial head
• Perform xrays to confirm reduction of forearm
If radial head subluxed, consider:

- Malreduction ulna
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- +/- block to reduction of radial head
  - Capsule
  - Annular ligament
  - Radial nerve
  - Biceps tendon
• PUDA important for anatomic reduction of proximal ulna fractures, nonunions, malunions, or osteotomies
• 50 patients with bilateral elbow radiographs
• PUDA present in 96% of radiographs
• Average PUDA 5.7 (range, 0-14)
• Average tip-to-apex distance was 47 mm (range, 34-78 mm)
• No correlation with age identified

Figure 1 (A) A lateral radiograph of the elbow. (B) The proximal ulna dorsal angulation (PUDA) was determined by measuring the intersection angle between tangent lines placed on the dorsal aspect of the olecranon and the dorsal ridge of the ulnar shaft. (C) The location of the apex of the PUDA was determined by measuring the distance from the tip of the olecranon to the point of intersection of the PUDA tangent lines.

• 6 fresh frozen upper extremities (mean age of cadaveric specimens = 55; 3 female, 3 male)
• Osteotomy performed at the PUDA
• Stabilized w/ internal fixation at 5 angles.
• Anterior sublux ↑ as malalignment fixed into extension
• Anatomic reconstruction is important => recreation of each patient’s unique PUDA
• Contralateral elbow radiographs may assist w/ restoration of normal anatomy, limit radial head instability
### Summary

**Monteggia injuries**
- Anatomic reduction of ulna
- PUDA is unique and contralateral films may help
- Compression plate fixation for ulna fracture
- Closed management of radial head
- Perform xrays to confirm reduction of forearm

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### Thank you