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## Ipsilateral olecranon and distal radius fracture: A case report

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## ABSTRACT

**INTRODUCTION:** Concomitant ipsilateral olecranon and distal radius fracture are rare injuries. Their clinical presentation is unusual and investigation and management is poorly described.

**PRESENTATION OF CASE:** We present a 55-year-old woman patient who fell off sustaining a concomitant distal radius and olecranon fracture in the same extremity. On examination, there was gross swelling of the proximal and distal forearm and no neurovascular deficit. Radiographs confirmed distal radius and olecranon fracture. Patient was treated with open reduction and anatomic locking plate for olecranon and a closed reduction percutaneous K wire fixation with penning fixator for distal radius fracture. After physical therapy program, functional results were good and DASH score was 60.

**DISCUSSION:** Several different combinations of fracture with dislocation have been described, but, to our knowledge, concurrent ipsilateral olecranon and distal radius fracture has not been reported before. In the literature review there are two similar cases in the English literature.

**CONCLUSION:** Ipsilateral olecranon and distal radius fracture is a very rare injury due to different trauma mechanisms. However we should keep in mind that there may be adjacent joints and structures for concomitant injuries.

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## 1. Introduction

Olecranon fracture and distal radius fracture are both common fractures, with respective incidence 11.5 per 100.000 and 26 per 10.000 people per year [1,2]. However, concomitant ipsilateral olecranon and distal radius fracture are rare due to different trauma mechanisms of occurrence [3,4]. In this case we present a 55 year old patient who had ipsilateral distal radius and olecranon fracture, and her treatment results.

## 2. Presentation of case

A 55-year-old woman was admitted to our emergency department following a fall. She was evaluated for her complaints in left elbow and wrist. In the physical examination of the patient she

had a dinner fork deformity in the wrist. There were tenderness with palpation of the olecranon and distal radius. The neurovascular examination was normal and there was no other extremity trauma. She had no additional diseases and any medication. In the radiological assessment of the patient antero-posterior (AP) – lateral radiograph of the elbow and wrist confirmed the diagnosis of left distal radius and olecranon fracture (Fig. 1). According to the MAYO classification olecranon fracture was type 1B and according to the Frykman classification distal radius fracture was type 4. Surgical treatment was planned for both fractures. Patient was treated with open reduction and anatomic locking plate for olecranon and a closed reduction percutaneous K wire fixation with penning fixator for distal radius fracture. Elbow range of motion exercises were begun after 1 week sling usage. After 3rd week control, wrist flexion and extension was allowed with the penning fixator. At 6th week control there were union in both distal radius and olecranon. The penning fixator and K wires were removed. There were no complications observed at follow-up.

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Fig. 1. Preoperative radiological assessment of the patient, AP – lateral radiograph of the elbow (a) and wrist (b).



**Fig. 2.** At 3 months control; radiological assessment of the patient, AP – lateral radiograph of the elbow (a) and wrist (b).

At 3 months control; union was achieved in both distal radius and olecranon. Left wrist dorsiflexion was 45 degrees and palmar flexion was 50 degrees. Left elbow flexion was 140 degrees, extension was full and there were no deficit in the supination and pronation of the forearm (Figs. 2 and 3). DASH score was calculated as 60.

### 3. Discussion

Although olecranon and distal radius fractures in the forearm are frequently seen, concurrent ipsilateral injury is very rare. In the literature review there were very few studies on combinations of distal radius and olecranon fractures in the same extremity.

Clare et al. [5] presented a case in which a combination of Monteggia and Galeazzi fractures occurred in the same forearm in 2002. Radiographs had showed the presence of a displaced olecranon fracture and displaced fracture of the distal radius. They had stabilized the radius with a dynamic compression plate and

the olecranon with tension band fixation. On physical examination after 3 months, elbow motion was 25–130 degrees and his forearm motion was 60 degrees of pronation and 80 degrees of supination. We had superior functional result in our patient and it is possibly related to the concomitant ligamentous injuries and dislocations in the other case.

A pediatric patient who was 8 years old boy, was reported by Shonnard and DeCoster [6]. The patient was injured when he fell backwards from a height of approximately 5 feet in an extended-elbow position. Based on the radiographic findings, a Monteggia fracture and a dorsal-type Galeazzi fracture were diagnosed. Concomitant paralysis of the radial nerve was noted. In this patient closed reduction was preferred. Subsequently, immobilization in a plaster cast at 95 degree of elbow flexion with maximal supination had done. One year after the injury, although slight limitation of the range of motion (60 degree of pronation) remained, the radial nerve paralysis recovered completely. In this case, as a pediatric patient was different from ours, it was considered that good results would be obtained with closed reduction and casting.



Fig. 3. Clinical pictures which show patient's functional status at 3 months control.

#### 4. Conclusion

In conclusion, ipsilateral olecranon and distal radius fracture is a very rare injury due to different trauma mechanisms. However we should keep in mind that there may be adjacent joints and structures for concomitant injuries.

#### Conflict of interest statement

No financial conflicts of interest.

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#### Ethical approval

This case report is written based on institutional ethical committee.

#### Author contributions

Mehmet Erdil, Gökhan Polat and Gökhan Karademir made study design. Ömer Cengiz had performed the surgery with Deniz Kara.

Gökhan Polat and Gökhan Karademir, helped in english language editing and writing the manuscript. Ömer Cengiz, had attended the surgery with Dr. Erdil and Dr. Ozkan. Deniz Kara had taken the photos.

#### Consent

We have obtained written consent from the patient. We can provide this should the Editor ask to see it.

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