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# Simultaneous Ipsilateral Distal Radius and Radial Head Fractures: A Case Report

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**Abstract** **Case Report**

We treated a 58-year-old man with a rare combination of ipsilateral fractures of the distal radius and the radial head following a fall from height. The distal radius fracture was treated with percutaneous pinning, while the displaced radial head fracture was treated through open reduction and internal fixation using 2 Herbert screws. Elbow mobilization was started at 2 weeks, and the distal radius was protected for an additional 4 weeks in a below elbow functional brace. Simultaneous ipsilateral distal radius and radial head fractures represent an uncommon injury pattern. Greater emphasis should be placed on the clinical examination of the elbow in cases of wrist injuries, and vice versa. Once diagnosed, the management of these cases presents a dilemma. The appropriate treatment will depend on various factors, including the injury characteristics, the patient's age and the fracture pattern. In younger patients, one should try to preserve the radial head to prevent potential proximal radial migration.

**Keywords:** Ipsilateral, Distal Radius and Radial Head Fractures.



## INTRODUCTION

Fractures of the distal radius are the most common fractures in adults, accounting for approximately 17 % of all fractures [1]. However, fractures of the proximal end of the radius are less frequent, comprising for around 20 % of elbow trauma cases [2]. Despite the high incidence of both fractures individually, the simultaneous ipsilateral traumatic fractures are uncommon, rarely reported and their incidence rate remains unknown [1]. The management of these called bipolar radius fractures is challenging since the treatment must take into account both the wrist and elbow injuries. Currently, there is no well-established consensus regarding their optimal management. We report the case of a patient who sustained an upper limb trauma causing a fracture of the radial head and of the ipsilateral distal radius. The goal of our work is to report our clinical case and to emphasize the necessity of a thorough examination of the entire injured limb.

## CASE REPORT

We report the case of a 58-year-old male patient, a retired soldier and right-handed, with no particular medical history, who sustained a domestic accident, falling from a height of two metres, landing with his hand in extension and elbow extended, resulting in a closed trauma to the right elbow and wrist. The clinical examination revealed a attitude of the traumatized upper limb, edema and pain on palpation especially over the radial head and mobilization of the elbow especially during prono-supination, accompanied by painful swelling of the ipsilateral wrist. The neurovascular assessment revealed no signs of peripheral neurovascular injuries. Preoperative anteroposterior and lateral radiographs of the elbow and wrist, along with computed tomography, showed an AO type B1 distal radius fracture as well as a Mason type II radial head fracture. The elbow joint was not dislocated **(figure 1)**. The patient underwent surgery under locoregional anesthesia (Brachial plexus block). First, the radial head fracture was treated with open reduction and internal fixation using two Herbert screws, via the posterolateral approach. Then, the distal radius fracture was treated with percutaneous pinning using two 18 mm Kirschner wires **(figure 2)**. Postoperative immobilization was applied. A brachio-antebrachio-palmar plaster splint was used for 2 weeks, after which wrist brace was applied until postoperative 6 weeks. Elbow motion was allowed after postoperative 2 weeks, while wrist motion was

allowed after 6 weeks, following the removal of the Kirshner wires **(figure 3).** Three months after the surgery, the mean elbow flexion was 120°, with a complete extension. The wrist range of motion, measured with the elbow flexed at 90°, included a mean palmar flexion of 60°, dorsiflexion of 55°, radial deviation of 13°, and ulnar deviation of 30°. The maximum forearm supination and pronation were 85° and 82°, respectively **(figure 4).** No major complications such as infection, loss of reduction, nonunion or inversion of ulnar variance were observed. The patient was followed for 15 months, and at the final follow-up, he was satisfied with her clinical outcome.


**Figure 1 : Initial X-ray of the wrist (A, B), the elbow (C, D), and CT images of the elbow (E-H) show an AO B1 distal radius fracture, and a Mason type II radial head fracture**


**Figure 2 : Intraoperative fluoroscopic images of the wrist (A, B) show that the distal radius fracture was fixed with percutaneous pinning using two 18 mm Kirschner wires, and the images of the elbow (C, D) show that the radial head fracture was treated with open reduction and internal fixation using two Herbert screws**

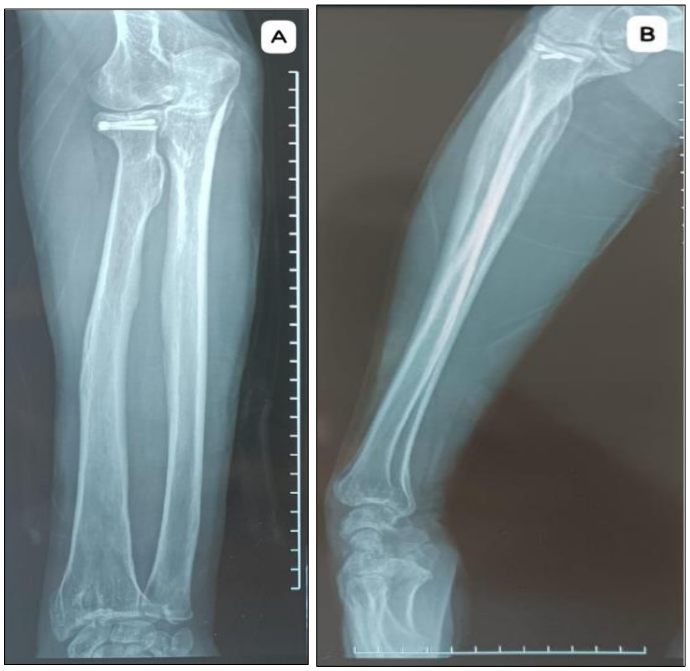


**Figure 3 : Last follow-up radiographic views of the distal radius and radial head showing uneventful bony union**

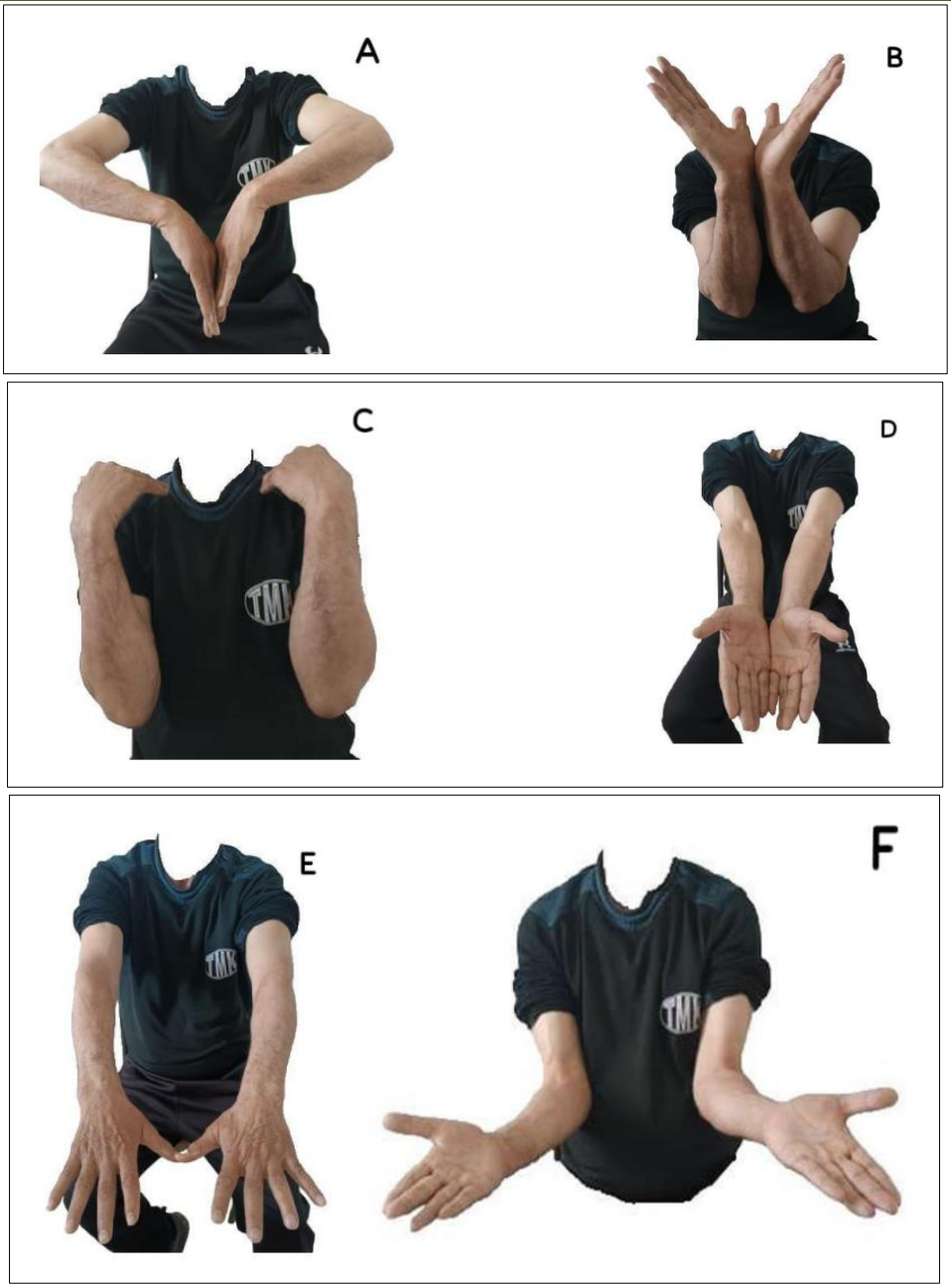


**Figure 4: Clinical results after three months of postoperative follow-up: palmar and dorsal flexion of the wrist (A, B), flexion-extension and prono-supination of the elbow (C, D, E, F)**

## DISCUSSION

Distal radial fractures are among the most common injuries in adults, accounting for approximately 17% of all fractures [1]. Fractures of the proximal end of the radius accounting around 20 % of elbow trauma cases [2]. However, the occurrence of simultaneous ipsilateral fractures of distal and proximal ends of the radius is highly uncommon, with only a few cases reported [1]. The rarity of this injury in clinical practice can be explained by the complexity of the biomechanical forces necessary to induce it. Thus, the trauma's energy and the skeletal maturity greatly conditions the prognosis in the double injury. The most probable mechanism to produce this type of injury would be a fall on the outstretched hand. The rebound forces coming from the ground were volar to the distal radius as the fracture was dorsally angulated. This force then caused the radial head fracture due to the longitudinal impaction of the radius against the capitellum [3]. Our case confirmed the mechanism of falling on an outstretched hand with elbow in hyperextension responsible for this injury complex and suggested by most authors [1-7]. The clinical presentation in our case was evident. The systematic clinical examination of the wrist and elbow revealed pain on palpation of the external edge of the radius and the radial head. As a general rule, a patient with a distal radial fracture should be subjected to a systemic elbow examination, since that a wrist fracture can be associated

with trauma forearm or elbow trauma, as the case of the Essex-Lopresti fracture and Monteggia fracture. Radiography of the elbow should be done in all cases of distal radius fracture where there is suspicion of concomitant elbow trauma [4]. Currently, there are no specific guidelines for the management of this type of injury. The treatment approach depends on factors such as the fracture pattern, degree of displacement, stability of the fracture, the patient's age, and their physical demands. Regardless of the therapeutic strategy adopted, the objective is to keep the radial length and preserved the radial head articular surface to avoid the risk of radial shortening in a proximal radial fracture which could be more severe when accompanied by distal radius fracture, and to prevent proximal radial migration [8]. Nagaya *et al*., described one such case in a 52-year female, in which the radial head fracture was treated by open fixation with a cancellous bone screw and distal end radius by application of external fixator and bone grafting [2]. Akma Kamaludin and Park *et al*., and others outhors was trated the fracture of the radial head by radial head prosthesis and distal end radius by volar plate fixation [9]. The appropriate diagnostic and therapeutic management of our patient explains the good functional recovery of elbow and wrist.

## CONCLUSION

Simultaneous fractures of the distal radius and radial head are rare injuries. Greater attention should be given to clinical and radiological evaluation of the elbow in cases of wrist injuries, and vice versa. Without such an examination, these fractures may be overlooked. Therapeutic approach will be influenced by multiple variables, with the management of this injury being multifaceted and necessitating meticulous evaluation.

## REFERENCES


1. Agarwal, A. (2007). Ipsilateral fracture of distal and proximal ends of the radius: does this injury pattern deserve special attention? Eur J Orthop Surg Traumatol, 17(2), 181–7.
2. Nagaya, H., Saito, Y., & Warashina, H. (2001). Simultaneous ipsilateral fractures of distal and proximal ends of the radius, J. Orthop. Sci, 6, 439–443.
3. Henrikson, B. (1969). Isolated fractures of the proximal end of the radius in children epidemiology, treatment and prognosis. Acta Orthop Scand, 40, 246–60.
4. El Kadi, K. I., Benabid, M., Saliou, S., El Assil, O., Marzouki, A., & Lahrach, K., et al. (2017). Simultaneous ipsilateral fractures of distal and proximal ends of the radius, Pan Afr. Med. J. 27 : 98.
5. Yan, W., Wang, L., & Miao, J. (2015). Comminuted fractures of ipsilateral radial head and distal radius: a rare injury pattern, Chin J Traumatol Zhonghua Chuang Shang Za Zhi,18(2), 106–108.
6. Park, I.J., Sur, Y.J., Kim, J., Jeon, J.H., & Park, H.Y. (2021). Simultaneous ipsilateral distal radius and radial head fractures, Medicine (Baltimore) 100 e24036.
7. Elgassim, M., AbuAlhaya, A., Abdelrahman, A., Elgassim, M., & Kumar, T.S. (2022). Rare triad of fractures in the upper limb. Simultaneous fractures of the distal radius, with the radial head and the ulna styloid, Radiol Case Rep, 17, 4439–4444.
8. Duckworth, A.D., Watson, B.S., Will, E.M., Petrisor, B., Walmsley, P., & Court-Brown. C., et al. (2011). Radial shortening following a fracture of the proximal radius. Acta, 82, 356–9.
9. Akma Kamaludin, N.A., Ferdaus Kamudin, N.A., Abdullah, S., & Sapuan, J. (2019). Ipsilateral proximal and distal radius fractures with unstable elbow joint: Which should we address first?. Chin J Traumatol, 22, 59–62.