

# Radial Head Dislocation Associated with an Ipsilateral Open Type II Gustilo-Anderson Fracture of the Radial Shaft

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## Abstract

Radial head dislocation associated with an ipsilateral radial shaft fracture is a rare lesion, even more so for open lesions. Few cases have been found in the literature. We report this case due to its exceptional nature and discuss the mechanism of onset. A twenty-five-year-old patient presented with a dislocation of the radial head associated with a GUSTILO ANDERSON type II open fracture of the radial shaft following an occupational accident. He was managed twenty-four hours after the trauma. The mechanism was a direct blow. The dislocation was reduced by external manoeuvre following open reduction of the radial shaft. The fracture was stabilized by two Kirschner wires following reduction. The result at 12 months was satisfactory from a clinical and radiological standpoint.

## Keywords

Radial Head Dislocation, Radial Shaft Fracture, Kirschner Wires

## 1. Introduction

Traumatic dislocation of the radial head in adults is unusual. It is frequently associated with an ulna fracture resulting in a MONTEGGIA fracture [1]-[6]. Dislocation of the radial head can be associated with an ipsilateral radial fracture through a complex mechanism. Due to the rare occurrence of the injury, there are no definitive guidelines to manage the case [7]. We report the case of an anterior traumatic dislocation of the radial head associated with a type II open fracture of GUSTILO ANDERSON of the proximal third of the radial diaphysis

treated at the Yaoundé Emergency Centre “CURY”.

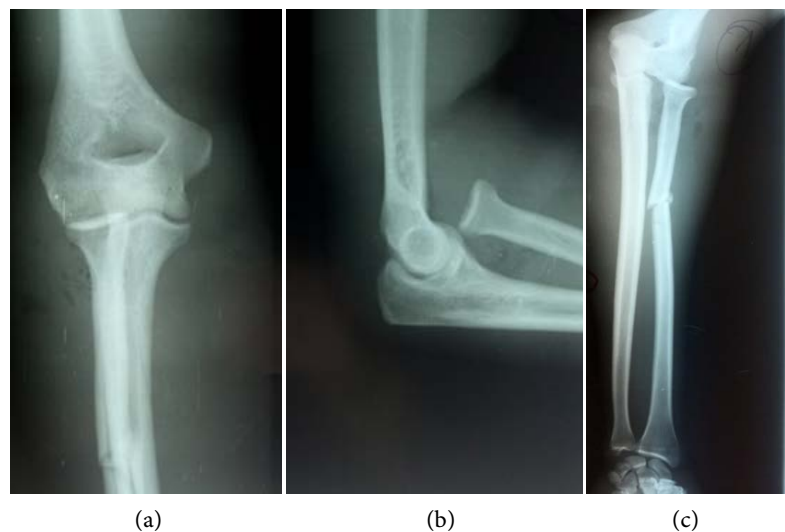
## 2. Observation

This is the case of a 25-year-old right-handed carpenter, with a low income. He was a victim of an occupational accident and admitted to the emergency room for pain and complete loss of function of the right upper limb resulting in an open trauma to the right forearm. On physical examination, we found a spherical wound of about five centimetres in the middle third of the anterolateral aspect of the right forearm. There were no associated vascular or nerve lesions. The radiological assessment revealed a wedge fracture of the upper third of the radius, associated with an anterior dislocation of the radial head. The integrity of the ulna and the distal radio-ulnar joint were noted (**Figures 1(a)-(c)**).

Twenty-four hours after admission, the patient underwent surgery under general anaesthesia. The wound was debrided and the diaphyseal fracture of the radius was reduced through a skin opening following HENRY’s approach. Osteosynthesis under the control of the image intensifier by two KIRSCHNER pins (20/10 and 18/10) was introduced through the radial styloid. The reduction of the radial dislocation was achieved by traction and pronation of the forearm. The reduction was stable and prono-supination possible. An additional immobilization by a long arm splint was placed for a period of three weeks (**Figure 2**). The patient had ten rehabilitation sessions as soon as the plaster splint was removed. The surgical evolution was uneventful, consolidation was obtained at 5 months. The patient was seen again at 12 months, he presented no complaints with total functional recovery and resumption of previous activities (**Figures 3(a)-(c)**).

## 3. Discussion

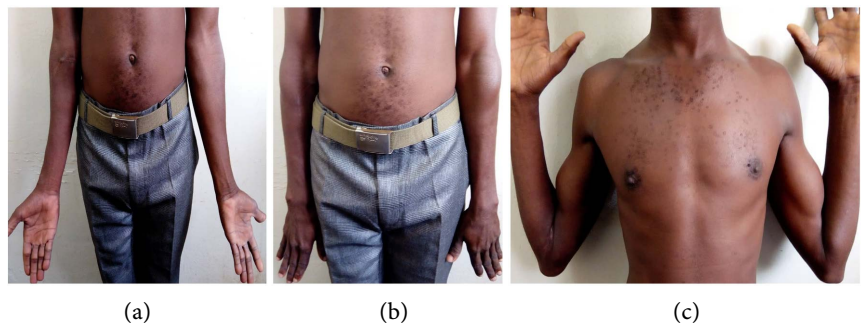
The dislocation of the radial head associated with a diaphyseal fracture of the



**Figure 1.** (a)-(c) Show fractured radius associated with ipsilateral radial head dislocation.



**Figure 2.** Fracture reduction, pinning, and radial head reduction (frontal and lateral view).



**Figure 3.** (a)-(c) Good functional outcome with normal flexion-extension and pronosupination.

homolateral radius is a rare lesion association. Very few cases have been published concerning this association [1]-[7]. In our case, the mechanism would be that of a direct blow on the anterolateral face of the forearm in forced supination with hyperextension of the elbow causing a rupture of the annular ligament followed by the quadratus ligament, and then of the interosseous membrane to the fracture site. As Simpson *et al.* already mentioned in 1991 [4], we believe that in the occurrence of this lesional association, the diaphyseal fracture of the radius preceded the proximal radio-ulnar dislocation. According to Hayami *et al.*, annular ligament, quadratus ligament, and proximal half of the interosseous membrane are important factors in maintaining the stability of radial head which are damaged during the injury [8]. An anteroinferior radial head dislocation with radial shaft fracture was seen in a 25 years old male as reported by Mehara *et al.* [3]. Adhikari *et al.* reported a 34-year-old lady who had posterior dislocation of the radial head [7].

The management of this lesion must be done urgently within six hours, we took care of the patient surgically after twenty-four hours because he is not insured and had difficulties in honouring prescriptions. Meanwhile, plate and screw fixation of radial diaphyseal fractures is mostly presented in the literature, in our case we chose intramedullary pinning using KIRSCHNER pins because of

the infectious risk about the time taken for treatment which was 24 hours given it was an open fracture [5]. The dislocation reduction was achieved by traction and pronation following the stabilization of the radial shaft fracture. Secondary immobilization with a long arm splint at 90 degrees of elbow flexion, and forearm supine for two weeks contributed to ligament healing. Elbow rehabilitation was started early to avoid stiffness in the elbow [1] [2] [3] [4]. According to the Mayo Elbow Performance Index “MEPI”, the functional elbow result was excellent.

#### 4. Conclusion

The dislocation of the radial head associated with a diaphyseal fracture of the ipsilateral radius is an exceptional lesion, presenting an apparent complex mechanism. Early surgical management followed by adapted rehabilitation allows for good functional results.

#### Ethics Approval and Consent to Participate

Not applicable.

#### Consent for Publication

Patient gave his well-informed consent for the publication of this case.

#### Conflicts of Interest

The authors declare that they have no conflicts of interest.

#### References

- [1] Cherif, M.R., Chehimi, A., Ben Ghazlen, R., *et al.* (2002) Traumatic Dislocation of the Radial Head Associated with Ipsilateral Fracture of the Radial Shaft: A Case Report. *Acta Orthopaedica Belgica*, **68**, 529-531.
- [2] Haddad, F.S. (1995) Radial Head Dislocation with Radial Shaft Fracture. *Injury*, **26**, 502-503. [https://doi.org/10.1016/0020-1383\(95\)00077-M](https://doi.org/10.1016/0020-1383(95)00077-M)
- [3] Mehara, A.K. and Bhan, S. (1993) Ipsilateral Radial Head Dislocation with Radial Shaft Fracture: Case Report. *The Journal of Trauma*, **35**, 958-959. <https://doi.org/10.1097/00005373-199312000-00027>
- [4] Simpson, J.M., Adreshak, T.G. and Patel, A. (1991) Ipsilateral Radial Head Dislocation and Radial Shaft Fracture. A Case Report. *Clinical Orthopaedics and Related Research*, **266**, 205-208. <https://doi.org/10.1097/00003086-199105000-00031>
- [5] Jadaan, M., Jain, S.K., Ahmed, A. and Khayyat, G. (2014) Ipsilateral Radial Head Dislocation and Radial Head Fracture in a Child. *JOCR*, **4**, 9-11.
- [6] Singh, J., Kalia, A. and Dahuja, A. (2018) Ipsilateral Radial Head Dislocation and Proximal One-Third Radial Shaft Fracture in an Adult: A Case Report. *The Open Orthopaedics Journal*, **12**, 189-195. <https://openorthopaedicsjournal.com/VOLUME/12/PAGE/189/>
- [7] Adhikari, A., Acharya, S. and Bhandari, R. (2020) Radial Head Dislocation with Ipsilateral Proximal Shaft of Radius Fracture: A Case Report. *Journal of Nepal Medical Association*, **58**, 416-418. <https://doi.org/10.31729/jnma.4991>

- [8] Hayami, N., Omokawa, S., Iida, A., *et al.* (2017) Biomechanical Study of Isolated Radial Head Dislocation. *BMC Musculoskeletal Disorders*, **18**, Article No: 470.  
<https://doi.org/10.1186/s12891-017-1829-1>