



## Hume fracture- Monteggia fracture variance- A case report

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**Background:** The Hume fracture is an injury to elbow consist of fracture of the olecranon with associated anterior dislocation of the radial head which occurs in children. It's a variance of Monteggia fracture.

**Material and method:** We hereby presenting a rare case of Hume fracture in a 9-year-old girl treated by open reduction and internal fixation by tension band wiring and olecranon shortening.

**Results:** At 5 months follow up patient is having 90 degree of flexion and 120 degrees of extension from completely extended elbow.

**Conclusion:** Hume fracture is a rare variance of chronic Monteggia fracture dislocation. Results are good, if treated properly.

**Keywords:** Hume Fracture, Monteggia fracture Variance, ORIF with TBW

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## Introduction

The Hume fracture is an injury of the elbow comprising a fracture of the olecranon with an associated anterior dislocation of the radial head which occurs in children. It was originally described as an undisplaced olecranon fracture, [1] but more recently includes displaced fractures and can be considered a variant of the Monteggia fracture.[2] The injury was described in 1957 by A.C. Hume of the orthopaedic surgery department of St. Bartholomew's Hospital, Rochester. [1]

Although the precise mechanism of injury is unclear, the injury occurs in children who have fallen heavily with their arm trapped under the body. In his original description of the injury, Hume suggested that the injury occurred as a result of hyperextension of the elbow leading to fracture of the olecranon, with pronation of the forearm leading to the radial head dislocation.[1]

In the original description by Hume, where the olecranon fractures were not displaced, treatment consisted of closed reduction of the radial head dislocation under general anaesthesia by supination of the forearm. This was followed by immobilisation of the arm in a plaster cast with the elbow flexed at 90° and the forearm in supination for 6 weeks.[1]

Where the olecranon fracture is displaced, open reduction internal fixation is recommended. Once the olecranon has been repaired, closed reduction of the radial head dislocation is usually possible. This is followed by immobilisation with the elbow flexed to 90° and the forearm in the neutral position. The duration of immobilisation depends on clinical assessment of the joint, and mobilisation may be possible after as little as 4 weeks.[2]

## Case report

A 9 years old female presented in our opd with history of trauma due to fall in home 1 month back, with complain of pain and swelling in right elbow with completely extended right elbow and no flexion in elbow for 1 month. Patient was treated by conservatively elsewhere. On examination patient is having tenderness, swelling and completely extended right elbow with no movement at elbow. Diagnosis was Hume fracture-malunited Monteggia Fracture variance, right elbow.

Preoperative profile, x-ray and CT scan of elbow is done and patient is operated by posterior trans-olecranon approach. Olecranon shortening is done by freshened the fracture ends and tension band wiring of olecranon is done. Physiotherapy of elbow started from third post operative day. Patient was followed up regularly. Tension band wiring is removed after five months of surgery because wires are protruding from skin. At 5 months follow up patient is having 90 degree of flexion and 120 degrees of extension from completely extended elbow.



Figure 1: A, B, C, D- Preoperative X-ray and CT scan of patient

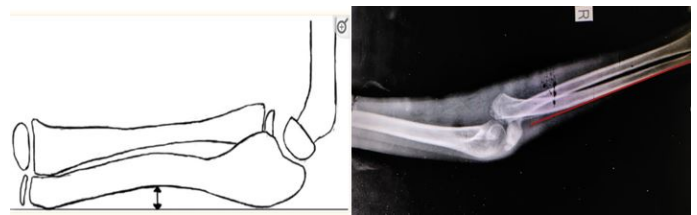


Figure 2: A-The ulnar bow sign- a dorsal line is drawn from olecranon to the distal edge of the ulna on a lateral view, more than 1 mm gap indicates a curvature in the ulna, B- Ulnar bow sign was absent in our case.



Figure 3: A- Soren line- the axis of radius normally travels through the center of humeral capitellum, in lateral view. B- It was passing anterior to capitellum in our case.

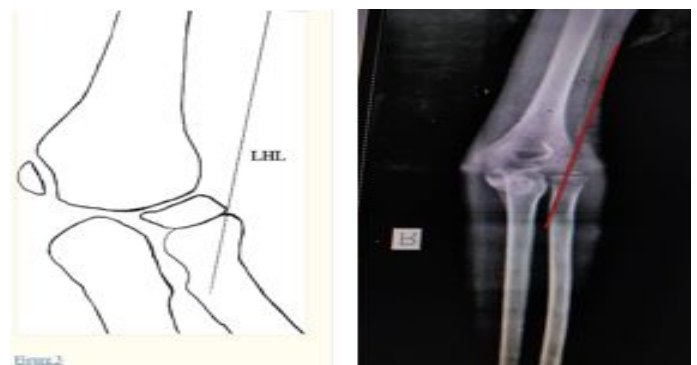


Figure 4: A- The lateral humeral line along the lateral margin of humeral lateral condyle and is parallel to the axis of distal humeral shaft on AP view.

Normally, the LHL is parallel to the radial neck cortex simultaneously. B- In our case, it is not parallel to the radial neck.

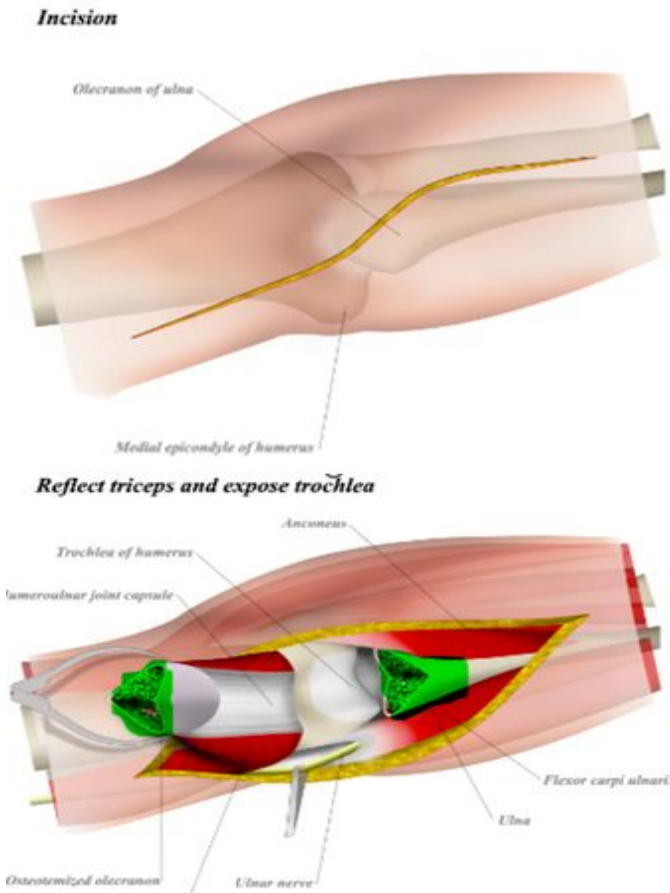


Figure 5: Operative procedure- A- Posterior trans-olecranon approach, B- Shortening of olecranon

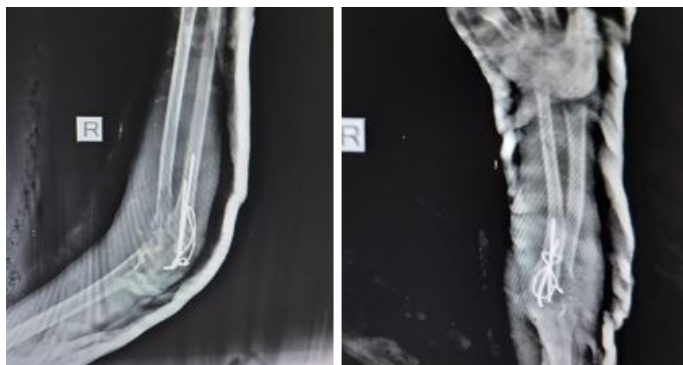


Figure 6: A and B- Post operative Xray, Lateral and AP view



Figure 7: A, B, C- Post op clinical picture and physiotherapy

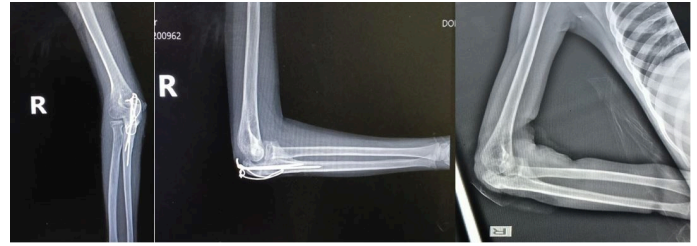


Figure 8: A and B Follow up xray at 4 months, C- After implant removal at 5 months



Figure 9: Final follow up at 5 months

## Conclusion

Hume fracture is a rare variance of chronic Monteggia fracture dislocation. Results are good, if treated properly. If the olecranon fracture is displaced, open reduction internal fixation is recommended. Once the olecranon has been repaired, closed reduction of the radial head dislocation is usually possible.

## References

1. HUME AC (August 1957). "Anterior dislocation of the head of the radius associated with undisplaced fracture of the olecranon in children". *J Bone Joint Surg Br.* 39-B (3): 508–12. doi:10.1302/0301-620X.39B3.508. PMID 13463039. Retrieved 2009-11-09.[permanent dead link] [Crossref][PubMed][Google Scholar]
2. McRae, Ronald; Esser, Max (2008). *Practical Fracture Treatment* (5th ed. ). Elsevier Health Sciences. p. 187. ISBN 978-0-443-06876-8 [Crossref][PubMed][Google Scholar]
3. EFORT Open Rev. 2022 Apr 1; 7(4): 287–294. Published online 2022 Apr 21. doi: 10.1530/EOR-21-0087. PMID: 35446261, Neglected Monteggia fracture: a review Rui Zhang,1,\* Xiaoyu Wang,1,\* Jia Xu,corresponding author1 Qinglin Kang,corresponding author1 and Reggie C Hamdy [Crossref][PubMed][Google Scholar]

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