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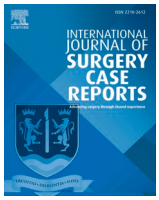

Case report

# Open postero-lateral dislocation of the left elbow secondary to assault: A case report

Anthony Ayotunde Olasinde [a,*], Olivier Iryivuze [a], Franck Katembo Sikakluya [a,b]

[a] Faculty of Clinical Medicine and Dentistry, Department of Surgery, Kampala International University Western Campus, Ishaka-Bushenyi, Uganda
[b] Faculty of Medicine, Université Catholique du Graben, Butembo, Democratic Republic of the Congo

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ABSTRACT

*Introduction and importance:* Simple closed lateral elbow dislocation is rare, often associated with neurovascular injury and closed reduction may be difficult. Open complex postero-lateral dislocation has not been previously reported.

*Case presentation:* We present a case of open left posterior lateral elbow dislocation secondary to assault with a cutlass causing an avulsion fracture of the lateral epicondyle and common extensor origin tendon which prevented congruent reduction until the avulsed fragment was fixed with a bone screw.

*Clinical discussion:* The patient had hemorrhagic shock from excessive uncontrolled bleeding from the machete cut for which he was resuscitated with a blood transfusion. There was a longitudinal laceration on the lateral aspect of the elbow extending onto the proximal forearm with open posterolateral dislocation of the left elbow, avulsion of the common extensor origin with lateral epicondyle fracture and an open left wrist fracture dislocation with level VII laceration of the extensor tendon. The wound was explored under general anesthesia with generous saline irrigation, reduction of the dislocated left elbow and screw fixation of the lateral epicondyle fracture and primary wound closure plus primary repair of extensor tendons. A post-operative full arm Plaster of Paris cast was applied. Supervised active and passive range of motion exercise was commenced two weeks post-operatively.

*Conclusion:* The patient had uneventful recovery with left elbow range of motion of 30 to 100 degrees two months post discharge.

## 1. Introduction

Simple lateral dislocation is rare in occurrence [1,2] and only few has been reported in literature. The commonest variant reported is closed lateral dislocation; which is often associated with massive soft tissue disruption and associated neurovascular injuries [1].Complex lateral elbow dislocations are associated with fractures of medial or lateral epicondyle. This often makes reduction a difficult challenge due to soft tissue interposition. Amongst the commonly reported soft interposition are Brachialis muscle and anconeus muscle sometimes necessitating open reduction following failed closed reduction [1,4,7]. While open anterolateral dislocation has been reported, with disruption of the medial column [4], no report of posterolateral dislocation has been made hence this case report.

## 2. Case presentation

A seventeen years old male was partying and got involved in a fight. He was assaulted by the opponent with a machette and had immediate bleeding and deformities of the left elbow and left wrist. He was taken to the nearest clinic, where the affected limb was bandaged and splinted and referred to Kampala International University Teaching Hospital (KIU-TH) for definitive care.

He had type IV hemorrhagic shock but he was adequately resuscitated till vital signs became stable. The essential findings on examination were on the musculoskeletal system which revealed a longitudinal linear laceration on the posterior part of the left elbow that extended to the distal third of the arm and secondly a transverse laceration on the dorsum of the left wrist at level VII which involved all the six extensor compartments. There were no associated major neurovascular injuries.

* Corresponding author at: Faculty of Clinical Medicine and Dentistry, Department of Surgery, Kampala International University Western Campus, P.O.Box 70, Ishaka-Bushenyi, Uganda.
*E-mail address:* tonyolasinde@kiu.ac.ug (A.A. Olasinde).

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There was also open fracture of the lunate and chip fracture of the body of the scaphoid bone. He had emergency wound exploration and generous saline irrigation under general anesthesia. The avulsed lateral condyle fracture was fixed with cancellous screw, and reduction of the elbow done. Then primary repair of all the wrist extensor tendons was done with k-wire trans-fixation of lunate fracture. A full arm plaster of Paris back-slab cast was applied. The pre- and post- radiographs were as in Figs. 1 and 2.

Patient made uneventful recovery. Graduated supervised active and passive range of motion (ROM) exercise of the elbow commenced 2 weeks postoperatively. The ROM in the last clinic attendance was 30 to 100 degrees which was 2 months post injury. He still being followed for the wrist extensor functional recovery. This case report is written in compliance with SCARE guideline [5].

## 3. Discussion

Posterior lateral dislocation is one of the commonest variants of the elbow dislocation [2], however open dislocation hasn't been reported. There is a report of open anterolateral dislocation of the elbow [4]. Lateral dislocation of elbow is often accompanied by massive disruption of soft tissue, sometime fracture of the lateral and medial condyles. Commonly reported soft tissue interposition in literature is brachialis muscle, and anconeus [1]. In our case report the avulsed fracture of the lateral condyle with common extensor origin prevented congruent reduction till cancellous screw fixation of the avulsed lateral epicondyle fractures was done. Though the elbow was unstable laterally, the lateral (radial) collateral ligament was not repaired. While surgical repair has been proposed, there is little or no functional difference in those whose ligaments were repaired compared to those that were not [6,7] Most surgeons advocates early accelerated functional treatment in simple elbow dislocation [2,4] however in complex elbow dislocation as in this case caution was exercised to allow soft callus formation at the fracture site, hence the delay in commencement of physiotherapy till the third week postoperatively. Our patient made uneventful recovery with good range of motion of the affected elbow. The patient was satisfied with range of motion of elbow achieved 2 months after injury.

## 4. Conclusion

While simple closed posterolateral dislocation of the elbow is most the commonly report, its open variant has not. Our patient with this injury made an uneventful recovery with good range of motion of the left elbow.

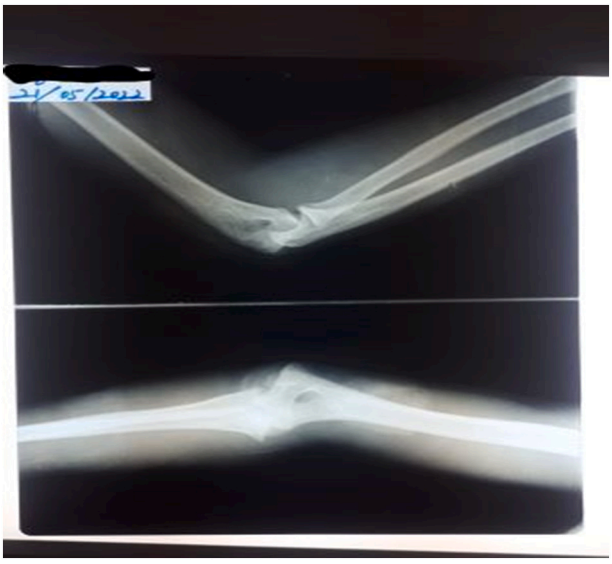

**Fig. 1.** Preoperative radiograph showing postero-lateral dislocation of the Left Elbow.

**Fig. 2.** Post-operation radiograph after reduction and screw fixation of the left lateral epicondyle fracture.


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### Ethical approval

Not applicable.

### Consent for publication

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

### Author contribution

AAO who operated the patient is a practicing Orthopaedic Surgeon with 22 years experience in the field. OI is a second-year surgical resident, assisted the surgeon at operation. AAO wrote the first draft. FKS helped in editing and final manuscript preparation according to the journal style. All authors read and approved the final version to be published.

### Research registration

Not applicable.

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Anthony Ayotunde Olasinde.

### Provenance and peer review

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## Declaration of competing interest

The authors declare no conflicts of interest.

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