

## Case Report

# Chronic Erosive Dislocation of Radial Head Resulting From Elbow Pyarthrosis—A Rare Delayed Complication of Fracture Dislocation of Elbow 肘關節感染引至慢性糜爛性橈骨頭脫位—一個罕有肘關節骨折脫位的延遲性併發症

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## ABSTRACT

We present a case of elbow injury with chronic infection resulting in open dislocation of radial head together with elbow instability. The principle of treatment of elbow dislocation and the importance of ligamentous integrity would be discussed.

## 中文摘要

本文描述一個肘關節創傷併發慢性感染而演變成開放性橈骨頭脫位及肘關節不穩的案例，並討論治療肘關節脫位及韌帶完整性的重要。

## Introduction

Isolated dislocation of radial head without fracture in adults is a rare entity,<sup>1–4</sup> and only a few case reports are found in the literature. Isolated open dislocation of radial head without fracture, to our knowledge, has not been reported in any literature. We present a case of isolated open dislocation of radial head after an old elbow injury and chronic infection.

## Case Report

A 35-year-old right-handed labourer had a right elbow injury 10 years back while he slipped and fell at home. The patient landed on the ground with his right hand landed outstretched. The diagnosis was fracture of radial head and dislocation of the right elbow. Open reduction and internal fixation with two titanium screws were performed in a hospital at that moment. The operative record did not comment on the ligamentous state of the elbow after the fixation. No formal ligamentous repair was performed as well. The patient was given a plaster slab for immobilisation of the elbow for 4 weeks postoperatively. In the outpatient notes, it was stated that the alignment and healing of fracture was good. The rehabilitation was uneventful. The patient enjoyed full range of elbow motion and could

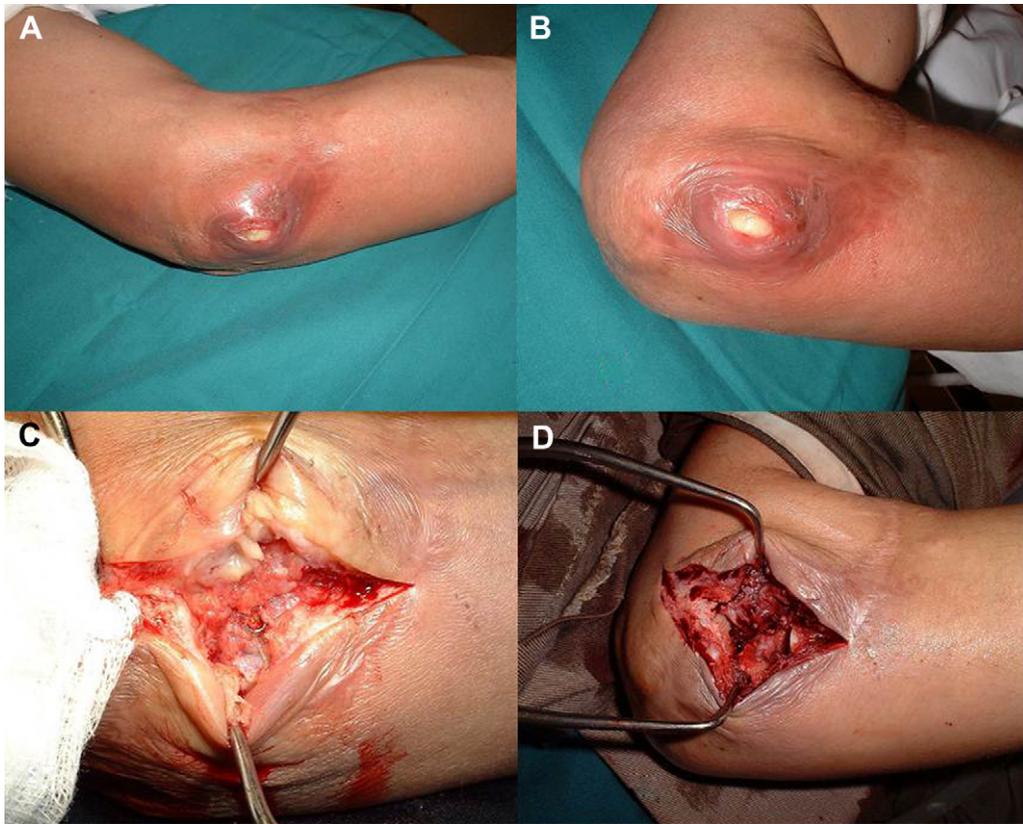
resume normal duty as a labourer. No abnormal prominence or pain of his injured elbow was mentioned by the patient all along. He was able to lift heavy objects at work place 4 months after the operation. However, he defaulted from follow-up in that hospital thereafter.

In recent 2 years, the patient felt progressively increasing pain in the elbow region, and a prominence was noticed at the surgical scar. There was some clicking sound especially after lifting activity with repeated flexion and extension of the elbow. He denied any new injury to his elbow. The elbow motion diminished gradually in all ranges. The stiffness and pain sometimes caused his absence from work. Eight months back, he noticed an ulcer over the surgical scar of his right elbow. Two to 3 months later, there was a whitish discharge from the ulcer from time to time, and therefore, the patient consulted us for treatment.

On physical examination, there was an 8-cm-long old surgical scar on the lateral side of the right elbow. A 1.5-cm ulcer with whitish discharge was noticed in the middle of the scar (Figures 1A and 1B). The elbow motion was 45–100° from extension to flexion. Supination and pronation were very limited because of pain. He was afebrile. There was no wrist pain. His hand motion was normal. The blood investigation showed that the white cell count increased to 14/nL, with neutrophils being predominant. The erythrocyte sedimentation rate was 56 mm/h, but the alkaline phosphatase and glucose were not elevated.

The radiographs (Figure 2A) showed a posterior dislocation of the radial head with two titanium screws in the radial head. Some

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**Figure 1.** Chronic erosion of lateral skin by the dislocated radial head in (A) elbow extension and (B) elbow flexion. The intraoperative photos show (C) the dislocated radial head with a screw head flush with the radial head surface and (D) after the excision of the radial head and debridement.

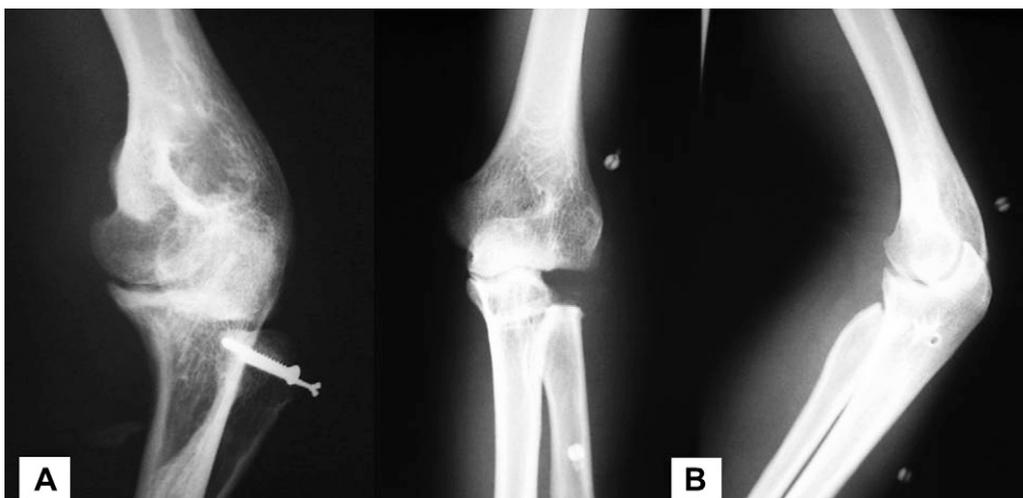
osteoarthritic changes of the radiocapitellar, ulnohumeral, and proximal radioulnar joints were seen. The diagnosis of chronic erosive arthropathy from chronic infection of the elbow joint was made.

Surgical intervention, including excision of radial head and thorough debridement of the elbow joint, was performed (Figures 1C and 1D). The lateral ligamentous structures were noted to be scarred down. The heads of the two screws were flush with the radial head surface. The culture of the granulation tissue showed scanty growth of *Staphylococcus aureus*. A course of 2-week intravenous and 4-week oral cloxacillin was given postoperatively. The patient regained

a good range of elbow motion of 5–130° from extension to flexion. The supination and pronation were full. The elbow pain subsided. No recurrent infection was found. He could resume normal duty 4 months after the operation. On follow-up, there was no evidence of longitudinal forearm instability shown on X-rays (Figure 2b).

#### Discussion

Isolated open dislocation of radial head in an adult is extremely rare. There is no reference found in the literature concerning the mechanism, treatment, and prognosis. Based on our knowledge of



**Figure 2.** The radiographs showing dislocation of radial head. (A) Oblique view and (B) postoperative radiographs of the elbow.

the biomechanics of elbow and the clinical findings, we would throw more light on this rare situation.

This patient sustained a radial head fracture and dislocation of the elbow initially. Unfortunately, some degree of proximal radioulnar instability had not been well addressed. The annular and radial collateral ligaments might be ruptured. Only the radial head fracture had been fixed with two screws. It was complicated by a chronic low-grade infection of the elbow joint several years later with progressive destruction of the lateral ligamentous complex of the elbow. As time went by, gross instability was resulted and the radial head protruded through the weakest part of the skin gradually, which was the old surgical scar. A discharging sinus was then formed as a result of the low-grade infection. Abnormal motion of the radial head rendered early degeneration of the elbow joint and the proximal radioulnar joint that might account for the increasing elbow pain and stiffness.

For the treatment of this rare lesion, we recommend a thorough debridement in facing infective open dislocation of radial head. In our case, excision of the radial head rather than reconstruction of the ligamentous complex was performed because of infection and severe osteoarthritis of the radiohumeral and proximal radioulnar joints. Skin impingement by the dislocated radial head was then

prevented. There was no longitudinal migration of radius as Essex-Lopresti lesion in our case. The outcome seemed satisfactory because there was no medial instability of the elbow. However, further studies may be required to echo the choice of treatment modalities.

In conclusion, we must be aware of ligamentous instability of the elbow in case of radial head fracture and dislocation during the initial acute treatment. The resultant elbow instability from ligamentous destruction may lead to catastrophic consequences, as illustrated in our case. Increasing elbow pain occurring years after the surgical treatment warrants an investigation for chronic infection resulting in progressive destruction of ligaments of the elbow joint.

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