Case Report

NERVE INJURIES FOLLOWING A TRAUMATIC BILATERAL DISLOCATION OF THE ELBOW : A CASE REPORT

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ABSTRACT

Abstract

Bilateral elbow dislocations are rare entities and represent high velocity trauma. These being associated with nerve injuries is the rarest of rare case. However here we present a 35 year old female with post-traumatic bilateral elbow dislocation with nerve injuries and the functional outcome after the management **Key Words :** Bilateral Elbow Dislocation, Nerve Injuries, Triple Tendon Transfer

INTRODUCTION:

Trauma to the adult elbow can be challenging to treat by virtue of the complex articular structure and proximity of neurovascular structures. Awareness of patterns of injury and the pitfalls of each can lead to restoration of a functional elbow in most patients. ^[1] Elbow dislocations account for 11-28% of elbow injuries. Bilateral elbow dislocation is a rare injury and only 11 cases are described in the literature, including 8 patients with isolated ligamentous and 3 patients with an additional osseous injury.^[2] Most Simple elbow dislocations are stable after manipulative reduction. Unstable dislocations are rare and need operative treatment in form of open relocation with soft tissue repair or application of an external Fixator. We report a very rare case of bilateral elbow dislocation with bilateral nerve injury, which to our knowledge is the first of its kind.

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CASE

A 35 year old female, housewife, presented to us with pain in both elbows following an alleged history of high velocity RTA. The right elbow had marked swelling with distortion of the three point relationship between the olecranon tip, medial and lateral epicondyles. The left forearm sustained a degloving injury and the elbow was exposed too. Elbow movements were not possible. Right sided Pointing Index Test was positive while Left side had a wrist drop with ulnar deviation and inability to abduct the thumb. There was no sensory loss. The radiographs showed bilateral posterior elbow dislocation. The patient was taken in the operating room as an emergency and right elbow was reduced under general anaesthesia and the left forearm was debrided to find that the a slip of the flexor digitorum was injured, Posterior Interosseous Nerve was injured and part of it was lost at the trauma site. The tendon was repaired and as the elbow was open, reduction was done but was unstable hence an external fixator was applied. After daily dressing and occasional debridements Split-thickness Skin Grafting was done to achieve wound coverage. An EMG-NCS was done to find out the status of the nerves and it showed Right sided Anterior Interosseous Nerve Neuropraxia and Left sided Posterior Interossoeus Nerve Axonotemesis. The Fixator was removed after 6 weeks and the elbow was found to be stable.

The AIN function was restored at 8 weeks post trauma and active range of motion was 0-130 degrees of extension and flexion on the right and 0-100 degrees of extension and flexion on left elbow.Pronation and supination was full on right while grossly restricted on left.

The repeat EMG-NCS of the left upper limb showed discontinuity of PIN 1 cm distal to the supinator muscle after 6 months of the injury. The treatment offered to the patient was triple tendon transfer (Jone's Tranfers) after strengthening the flexor muscles. The patient has under gone the tendon transfers and flap for wound coverage and has regained 80% of function.

Fig 1.



Fig. 2











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DISCUSSION

Bilateral Elbow Dislocations are a rare phenomenon and its association with nerve injury makes the management even more complicated. External Fixator helps in treatment of an unstable open dislocation. The fact that the PIN was lost on the trauma site made the functional recovery impossible without surgical intervention. Triple Tendon Transfer with Palmaris Longus to EPL, Flexor Carpi Radialis Split transfer was done for Abductor Policis Longus and Pronator Teres was used for restoration of function of ECRB. [3] Following the procedure the patient has restored function of the left wrist and is able to perform daily chores without much disability. The right elbow is as good as normal while the left elbow has 10-90 degrees of extension-flexion and 50 degree pronosupination arc.

CONCLUSION

Although nerve injuries following a traumatic bilateral elbow dislocation is rare, its management follows a multi-disciplinary and effective approach. Even if nerve repair is not done as a primary procedure due to various other factors, it is not impossible to get back a functional elbow and wrist joint with a planned stepwise management with wound care, joint stability, physiotherapy and finally tendon transfers.

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