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Original Research

Assessment of patients with dislocation of elbow

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ABSTRACT:

Background: Elbow dislocations are uncommon injuries with the annual incidence being 6.1 per 100,000 per annum across all ages. They are however the most commonly dislocated joint in children and the second commonest in adults. The present study was conducted to assess patients with dislocation of elbow. **Materials & Methods:** 72 cases of dislocation of elbow of both genders were enrolled. Parameters such as mode of injury, type of displacement, type of management done was recorded. **Results:** Out of 72 patients, males were 32 and females were 40. Etiology was road traffic accident in 45, fall in 20 and domestic violence in 5 cases. Direction of displacement was anterior in 15, posterior in 48, medial in 5 and lateral in 4 cases, management done was radial head in 38, screw in 14, locking plate in 9, trans-osseous suture in 6 and kirschner wire in 5 cases. The difference was significant (P< 0.05). **Conclusion:** Etiology was road traffic accident, fall and domestic violence. Direction of displacement was anterior, posterior, medial and lateral. Management done was radial head, screw, locking plate, trans-osseous suture and kirschner wire.

Key words: locking plate, kirschner wire, Elbow

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INTRODUCTION

Elbow dislocations are uncommon injuries with the annual incidence being 6.1 per 100,000 per annum across all ages. They are however the most commonly dislocated joint in children and the second commonest in adults, after the shoulder.[1] There is predominance of elbow dislocations in males, being 2 - 2.5 times more common in men, and also during the younger years with a mean age of 30. They are usually due to a fall onto the outstretched arm and around 40% are as a result of sporting injury.[2]

The elbow joint, despite its potential for dislocation, is inherently stable due to the ulno-humeral joint congruency, the medial collateral ligament (MCL) and the lateral collateral ligament (LCL) complex (including the lateral ulna collateral ligament (LUCL)) – the primary stabilisers.[3] These are complemented by the secondary stabilisers; the radial head, the joint capsule and the common flexor and extensor origins. This is also augmented by dynamic stability provided by the muscles crossing the elbow joint.[4]

The treatment of acute elbow dislocations is a challenge due the complex interaction between the bony articulations of the elbow joint, the capsuloligamentous structures, and dynamic muscle restraints.[5] Comprehension of the elbow anatomy and the relative contribution of the various elements to elbow stability is important in developing an algorithm for diagnosis and treatment.[6] Additionally, early recognition of the precise injury pattern is critical in restoring elbow function and preventing chronic instability and pain.[7] The present study was conducted to assess patients with dislocation of elbow.

MATERIALS & METHODS

The present study comprised of 72 cases of dislocation of elbow of both genders. All were enrolled with the consent of patients.

Data such as name, age, gender etc. was recorded. Parameters such as mode of injury, type of displacement, type of management done was recorded. All operative patients were treated by surgeons. In non-operative patients, early mobilisation occurred using a hinged orthosis within 2 weeks after trauma. After operative treatment, a long arm cast was applied for 2 weeks. Results of the study were

analysed statistically. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 72		
Gender	**Males**	**Females**
Number	32	40

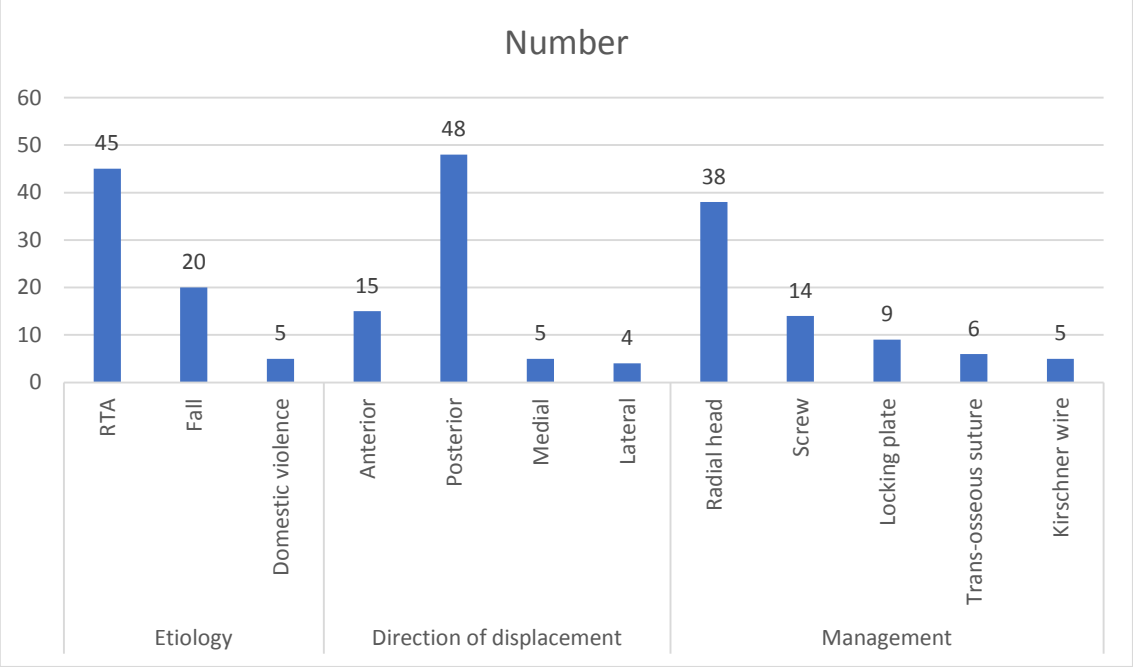
Table I shows that out of 72 patients, males were 32 and females were 40.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Etiology	RTA	45	0.01
	Fall	20	
	Domestic violence	5	
Direction of displacement	Anterior	15	0.02
	Posterior	48	
	Medial	5	
	Lateral	4	
Management	Radial head	38	0.01
	Screw	14	
	Locking plate	9	
	Trans-osseous suture	6	
	Kirschner wire	5	

Table II, graph I shows that etiology was road traffic accident in 45, fall in 20 and domestic violence in 5 cases. Direction of displacement was anterior in 15, posterior in 48, medial in 5 and lateral in 4 cases, management done was radial head in 38, screw in 14, locking plate in 9, trans-osseous suture in 6 and kirschner wire in 5 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

Elbow dislocation may present as an isolated injury or as one of many injuries sustained in the polytrauma patient.[8] Appropriate assessment and management of these patients along trauma algorithms may be necessary.[9,10] A detailed history of the mechanism of injury is beneficial, and information regarding the patient's functional status can be helpful in guiding treatment. On clinical examination, the dislocated elbow will be deformed with the forearm typically described in a position of varus and supination for postero-lateral dislocations.[11] Careful assessment and documentation of neurovascular status should be completed prior to, and following, reduction as entrapment of neurovascular structures can occur and necessitates urgent surgical management. Other

injuries to the limb should be sought, with particular focus on the distal radio-ulnar joint (DRUJ) to assess for interosseous membrane injury. Radiographs should be used to confirm the extent of the injury, and in simple elbow dislocations anteroposterior and lateral radiographs usually suffice.[12] The present study was conducted to assess patients with dislocation of elbow.

In present study, out of 72 patients, males were 32 and females were 40. Muhlenfed et al[13] assessed current epidemiological data, injury pattern, and the changing trend for treatment. The average age of the patients was 48.5 years (range 18–86). The ratio of male to female patients was 1.9:1. A fall onto the outstretched arm (42%) was the most common injury mechanism. By classification, 42% of the elbow dislocations were simple, and 58% complex. A total of 85% of patients underwent surgery including 73% of the simple elbow dislocations due to remaining instability or non-congruency of the reduced elbow. The indication for surgical treatment correlated merely with the grade of instability and displacement, but not with age.

We found that etiology was road traffic accident in 45, fall in 20 and domestic violence in 5 cases. Direction of displacement was anterior in 15, posterior in 48, medial in 5 and lateral in 4 cases, management done was radial head in 38, screw in 14, locking plate in 9, trans-osseous suture in 6 and kirschner wire in 5 cases. Reduction of the dislocation to stable congruent joint is the aim of treatment. Simple dislocations of the elbow are usually reduced in the emergency department with analgesia and conscious sedation, however, manipulation can be performed under a general anaesthetic in the operating theatre, and this allows a more comprehensive examination under anaesthesia of the reduced joint.[14] In the adequately sedated patient, reduction is achieved by correction of any medial or lateral displacement, flexion of the elbow to approximately 25 degrees, supination of the forearm and longitudinal traction with countertraction of the upper arm by an assistant. A reduction 'clunk' may be heard. Clinical and radiographic examination should then be repeated to confirm the reduction. Occasionally, a computed tomography scan may be required to gain more information about any associated fractures and their significance.[15]

CONCLUSION

Authors found that etiology was road traffic accident, fall and domestic violence. Direction of displacement was anterior, posterior, medial and lateral. Management done was radial head, screw, locking plate, trans-osseous suture and kirschner wire.

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