

## The Causes and Frequency of Elbow Joint Dislocation in a Regional-Referral Hospital in Afghanistan

### Abstract

**Background:** To find causes and number of elbow joint dislocation in Kunduz regional hospital- Afghanistan in 2021. The aim is to understand what the causes are and try to reduce the incidence by informing the people and discuss with the government.

**Methods:** We conducted a prospective case series study to figure out causes and number of elbow joint dislocations in Kunduz Regional Hospital- Afghanistan from the beginning up to the end of 2021. This study included 23 patients; the age was above 5 years old. The data were entered in spreadsheet and analyzed in SPSS program.

**Results:** Among 23 patients, 18 (78%) were male, 5 (22%) were female. Fourteen cases were 10-30 years of age; 15 (66%) were residents of Kunduz province. In 10 (43%) fall from height, 6 (26%) road traffic accident, 5 (22%) sports injuries, and in 2 (9%) family assault were the causes of elbow joint dislocation.

In 19 (84%) cases posterior dislocation, in 1 (4%) anterior dislocation, in 1 (4%) lateral dislocation, in 1 (4%) open posterior dislocation with fracture and in 1 (4%) complex closed posterior dislocation; were the types of dislocations. Elbow dislocation was more on right side (61%). 21 (92%) of elbow dislocations were treated non-operatively, and 2 (8%) operatively. In 21 (92%) there was no complication, in 1 (4%) myositis ossificans and in 1 (4%) non-reduced dislocation treated by traditional bone setter were observed.

**Conclusion:** The most common causes of elbow dislocation were fall from height and road traffic accident. Postero-lateral was the most commonly seen type of dislocation.

**Keywords:** Elbow joint, Joint dislocations, Incidence, Treatment

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### Introduction

The complete displacement of a joint is called dislocation. The most common types of dislocation are congenital dislocation, traumatic dislocation, pathologic dislocation and paralytic dislocation. The most common cause of dislocation is trauma like falling from height and sporting events. The elbow joint is the second joint, and almost 3-6% of all dislocations occur in this joint. The percentage of elbow dislocation increased with rising age and physical activity <sup>(1-4)</sup>.

The mechanism of injury is frequently falling on the outstretched hands with the slightly flexed elbow. The projecting trochlea adds a valgus twist to the longitudinal force, making the dislocation poster lateral <sup>(1)</sup>.

A total of 50% of all elbow dislocations occur in patients under 20 years of age, most of which are poster lateral. A lateral collateral ligament (LCL) tear occurs in 90% of elbow dislocations, and sometimes a medial collateral ligament tear occurs when the trauma is more severe. The terrible triad results in recurrent dislocations of the elbow when the radial head and ulna coronoid process are fractured <sup>(2)</sup>. Elbow dislocation is rare in children below ten years old, and its incidence is 3-6% of all dislocations, which occurs 71% in males.

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## Methods

The research topic was first assigned by the department of orthopaedics, checked by the scientific committee of the hospital, and ascertained by the directorate of continuous medical education of the ministry of public health. This descriptive study was conducted on 23 patients who had elbow dislocation and referred to the Kunduz Regional Hospital, Afghanistan, in 2021. The patients were the residents of four provinces, who came to Kunduz regional hospital and were treated. Children under five years old and patients with other simultaneous joint dislocations were not included in this research.

The research variables were demographic information, dislocation causes, patients' age and gender, place of residency, affected side of dislocation, dislocation type, treatment method, and treatment results. The first information was collected from the patients and their family members, and an x-ray was obtained. Then, the information was written in a form, and the data were imported to excel and SPSS software to evaluate these data.

## Results

Most cases of elbow dislocation (19 cases) were posterior dislocation (Table 1).

**Table 1: Comparison of patients according to the dislocation type**

Types of dislocation	Frequency	Percentage
Open complex posterior dislocation	1	4%
Simple posterior dislocation	19	84%
Simple anterior dislocation	1	4%
Simple lateral dislocation	1	4%
Close complex posterior dislocation	1	4%
Total	23	100%

Most elbow dislocation cases occurred on the right side, accounting for 61% (14 cases), and 39% (9 cases) were on the left side (Table 2 & Table 3).

**Table 2: Comparison of elbow dislocation according to the causes**

Cause	Frequency	Percentage
Falling	10	43%
Assault	2	9%
Road traffic accident	6	26%
Sport	5	22%
Total	23	100%

**Table 3. Comparison of patients according to the treatment**

Treatment	Frequency	Percentage
Close reduction	21	92%
Open reduction	1	4%
Refer to other H	1	4%
Total	23	100%

## Discussion

The total numbers of dislocations in this research were 23 cases, which referred daily to the Kunduz regional hospital in Afghanistan and met the inclusion criteria. The data were collected prospectively, and the results were compared to other studies. Most cases of elbow dislocation occurred in the second decade of life, indicating most physical activity in this period. Studies have shown that elbow joint dislocation cases occurred more in males due to physical activity, which was consistent with the results of this study.

This study found that road traffic accidents were responsible for 26% of elbow dislocations, compared to 6% in international

literature<sup>(5-7)</sup>. In addition; the most common cause of elbow dislocation was falling from a height mostly on the right side, most of which were posterior dislocation. The elbow dislocation was common in people with more physical activity (Table 4).

## Conclusion

Most cases of elbow dislocation occurred in the second decade, which is the most physically active period of life.

The most common cause of elbow dislocation was fall from height and most was on the right side and posterior.

**Table 4: Comparison with other countries**

Iran	Senegal	Germany	Afghanistan	Variables
Number of Patients				Sex
11	51	47	18	1. Male
1	9	25	5	2. Female
12	60	72	23	Total number of patients
Comparison by causes				
Not mentioned	36.70%	Not mentioned	21.70%	1. Sports events
Not mentioned	8.3%	6%	26%	2. RTA
Not mentioned	1.70%	Not mentioned	8.60%	3. Family assault
Not mentioned	28.30%	42%	43.70%	4. Fall down

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