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Epidemiology of Fracture Dislocations: 1 Year Trend at a Peripheral Hospital in India

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ABSTRACT

Introduction: The epidemiology of fracture dislocations is poorly understood. In this study we aimed to evaluate the prevalence and distribution of various fracture dislocations in the department of General Surgery in a peripheral hospital in Nasik. **Material and methods**: Fracture dislocation cases who underwent closed reduction by a general surgeon where no orthopaedician was available at a peripheral hospital in Devlali, Nasik from January 2017 to December 2017, were recorded. The demographic details of the patients who reported to this hospital were extracted and the type and site of fracture dislocations were classified according to their age and gender groups. **Results**: Out of the 47 patients, 30 patients (63.82%) were male and 17 patients (36.17%) were female. The highest incidence, 13 patients (27.65%) occurred in the age group of 20-30 years. In males, the highest incidence i.e. 10 patients (33.33%) occurred in the age group of 20-30 years. In females, the highest incidence i.e. 6 patients (12.76%) occurred in the age group of 60-70 years. A total of 11 cases (23.40%), the highest incidence occurred in the month of February. 31 cases of fracture dislocation were right sided (65.95%) and 16 patients had fracture dislocation on the left side (34.04%). 14 cases (29.78%) were of fracture lower end of radius which was the most common fracture encountered. **Conclusion**: Fracture lower end of radius was the most common fracture encountered; males sustained higher incidence of fracture dislocations and the age group of 20-30 years was most commonly involved. In females, the highest incidence occurred in the age group of 60-70 years. Left upper limb was more commonly involved in fracture dislocations of our series. The highest incidence occurred in the month of February.

Key words: *Fracture Dislocations, Fracture Lower end of Radius, Right sided fracture, Left sided fracture*

Musculoskeletal injuries impose an enormous burden of disability on individuals, society and health care system [1]. Currently it is accepted that injuries are preventable and the burden should be reduced with appropriate strategies, especially in low and middle income countries [1]. The first step of public health approach to injury prevention is to define the magnitude and characteristics of the problem [2]. In this study, we aimed to evaluate the prevalence and distribution of various fracture dislocations which were managed by department of General Surgery in a peripheral trauma centre in Devlali, Nasik, Maharashtra.

MATERIAL AND METHODS

The study was conducted in a peripheral hospital in Nasik, over a period of one year i.e. January 2017 to December 2017, a total number of 47 patients underwent closed reduction for fractures/dislocations in the department of General Surgery. Prior consent from the patients was taken in order to perform the study and include it in this article. Patients' details such as, age, sex and details of their respective injuries were noted on a preformed pro forma. Case of males and females were noted separately to find out the age difference in the male and female ratio.

RESULTS

Out of the 47 patients, 30 patients (63.82%) were male and 17 patients (36.17%) were female. The highest incidence, 13 patients (27.65%) occurred in the age group of 20-30 years the distribution of age and sex is provided in Table 1. In males, the highest incidence i.e. 10 patients (33.33%) occurred in the age group of 20-30 years. In females, the highest incidence i.e. 6 patients (12.76%) occurred in the age group of 60-70 years.

Table1 – Incidence of Fracture/ Dislocations over a period of 1 year: Age and Sex distribution

Age group	Males	Females
0-10 years	1	2
10-20 years	8	1
20-30 years	10	3
30-40 years	4	3
40-50 years	5	-
50-60 years	1	2
60-70 years	1	6
Total	**30**	**17**

Table 2 - Incidence of Fracture / Dislocations over a period of 1 year: Month wise distribution

Month	Total cases
January	3
February	11
March	3
April	4
May	1
June	7
July	**2**
August	3
September	4
October	5
November	3
December	1

A total of 11 (23.40%) cases, the highest incidence occurred in the month of February, month wise distribution of cases is provided in Table 2. 31 cases of fracture dislocation were right sided (65.95%) and 16 patients had fracture dislocation on the left side (34.04%) (Table 3). Total 14 cases (29.78%) were of fracture lower end of radius which was the most common fracture encountered followed by 10 cases (21.27%) of Colle's fracture and 10 cases (21.27%) of fracture of both the bones of forearm.

Table 3: Type of Fracture / Dislocation

Type of Fracture/ Dislocation	Total cases
Colle's Fracture	10
Fracture Both Bones Forearm	10
Fracture Lower end of Radius	14
Dislocation Shoulder	2
Dislocation Elbow	1
Radiocarpal Dislocation	1
Knee Dislocation	1
Interphalangeal Dislocation	4
Fracture Phalanx	4
Total	**47**

DISCUSSION

The purpose of this study was to describe the epidemiology of all fracture dislocations presented to department of General Surgery in a peripheral hospital in Devlali. The prevalence of injuries was always higher in males; the possible reason for this predominance is probably a combination of biological factors and social, gender related differences related to activity and risk taking.

The higher prevalence in males can be explained by activities performed by males which expose them to greater risk of injury [3]. By analysing the age distribution in our series, it was found that most injuries occurred in young adult males in the age group of 20-30 years. In females, those in the age group of 60-70 years, sustained the highest number of fractures. This can be contributed to the fragile and osteoporotic bones of postmenopausal females. In a study performed by Riggs and Melton, describe a similar pattern but, with an increase only after 50 years of age and considered it to be due to post menopausal osteoporosis [4].

The fractures peaked in the month of February. Traffic related injuries occur commonly from April to October whereas falls reach their peak in late winter, February and March [5-6]. June is the month with lowest number of fractures which can be explained by schools and universities and national examinations season [6]. Knowledge of seasonal variations in fracture incidence

might help in strategy planning as in resources allocation, preventive measures and public health education [5].

Right sided fractures were commoner as compared to the left side. The most common site of fracture was fracture lower end radius. Distal Radius fractures are one of the most common injuries encountered in Orthopaedic practice. They make up 8-15% of all bony injuries in adults [7]. Abraham Colles is credited with description of the most common fracture pattern affecting distal end Radius in 1814 and is classically named after him [8].

CONCLUSION

The highest incidence, 13 patients (27.65%) occurred in the age group of 20-30 years. In males, the highest occurred in the age group of 20-30 years and in females, the highest incidence occurred in the age group of 60-70 years. The highest incidence occurred in the month of February. 31 cases of fracture dislocation were right sided (65.95%) and 14 cases (29.78%) were of fracture lower end of radius.

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