

Prevalence of Paediatric Fractures in Teaching Department of Orthopaedics and Musculoskeletal Trauma in Eastern Slovakia during the Year 2018

Gharaibeh A^{1*} and Al Wadyia A²

¹Teaching Department of Orthopaedics and musculoskeletal trauma, UPJS, Slovakia

²Orthopaedic Surgeon, Department of Orthopaedics, Royal Derby Hospital, UK

***Corresponding author:** Dr. Ahmad Gharaibeh, MPH, PhD, Orthopaedic Surgeon.

Assistant professor, teaching Department of Orthopaedics and musculoskeletal trauma, UPJS, UNLP, Kosice, Slovakia, Tel: +421948612693; Email: gharaibeh@seznam.cz

Research Article

Volume 3 Issue 3

Received Date: April 05, 2019

Published Date: April 26, 2019

DOI: 10.23880/jobd-16000182

Abstract

Objective: To determine the prevalence of different fractures among paediatric age 0-19 years in teaching department of orthopaedics and musculoskeletal trauma during one year.

Methods: We retrospectively evaluated all children younger than twenty years who presented to our institution with a new fractures or fractures combined with dislocations within the calendar year 2018. The main outcome measures were the annual fracture and dislocation incidence in our population in central Europe.

Results: There were 783 paediatric patients with fractures or dislocations. 181 (26%) were with forearm fractures, 161 (23%) ankle and foot fractures, 145 (21%) hand fractures, 75 (11%) shoulder fractures, 32 (34%) elbow dislocations, 27 (28%) patellar dislocations (25), and (2) knee dislocation.

Conclusion: Distal radius fractures and dislocated elbows are the most common fractures and dislocations among childhood (0-19 years) in our University Hospital.

Keywords: Paediatric Fracture; Prevalence; Epidemiology; Incidence; Epiphyseolysis

Introduction

Fractures and dislocations are common among children, with the majorities of childhood injuries are minor events, but an unknown portion is a source of significant disability and morbidity. Trauma is most common cause of death in children > 1 years old;

mortality rate is approximately 20% in United States of America [1,2]. Spine fractures and dislocation have highest morbidity/mortality among musculoskeletal injuries; falls and motor vehicle accidents are the most common causes of pediatric trauma in United States of America. A child's bones are also subject to unique forms of injury due to their soft, developing bone [1-3]. Various

types of fractures include; displaced fracture, Plastic deformity, Torus (buckle) fracture which perhaps the most common fracture in young children. Greenstick fracture: This fracture is unique to children and involves one side of the bone breaking while the other side bends exactly like bending a green stick. Growth plate fractures, Elbow dislocation is the most common dislocation in paediatric age groups after radial head subluxation (pulled elbow) [1-3]. Child abuse is the second most common cause of death in children behind accidental injury in United States of America and 90% of fractures due to abuse occur in children younger than 5 years [2,4].

Material and Methods

This is a retrospective study of the case records of children with fractures and dislocations that were seen at the emergency department and orthopaedic paediatric clinics of Teaching Hospital during the year 2018. The case records of 8288 patients at paediatric age groups (<20 yrs.) who were attending to the orthopaedic emergency department in our institute who had undergone management for fractures, epiphyseolysis and dislocations by an orthopaedic surgeon during the year 2018. These records were studied and analysed by excel program.

Purpose of the Work

The main objective of our work is to determinate the incidence of paediatric fractures, epiphyseolysis and dislocations in our region in central Europe and to make a data base for further researches, to be effective in investigating, controlling, and preventing paediatric

fractures and dislocations in our population.

Study Location: University Hospital–UNLP SNP with 1356 beds, is the second largest Slovak hospital and provides highly qualified health care to patients not only from the Kosice area but in specific cases for the whole Eastern Slovakia.

Study Population: All children patients (0-19years old) with fracture, epiphyseolysis and dislocation in our institute.

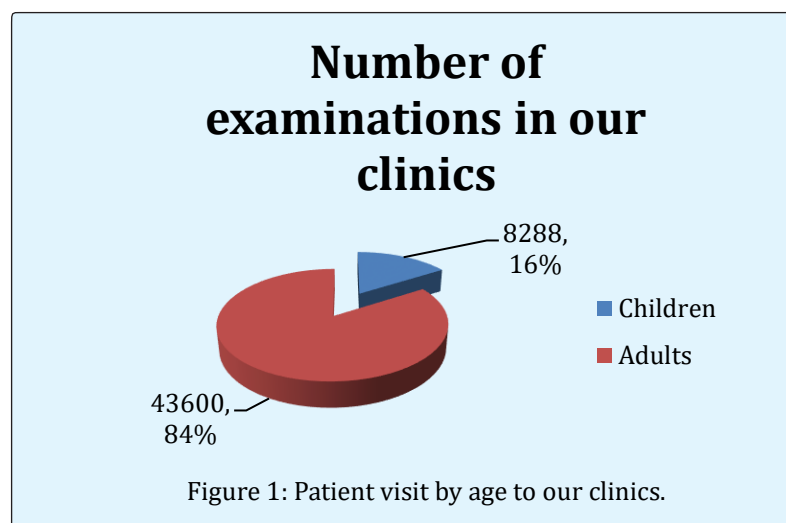
Study period: From 1 January 2018 to 31 December 2018.

Data collection: The data will be collected from the records of teaching department of orthopaedics and musculoskeletal trauma and their trauma and orthopaedic clinics.

Data Analysis: Analysis of data and results was processed using statistical features of Microsoft Excel.

Results

A total of 783 paediatric patients with fractures and dislocations. 688 fractures and 95 dislocations during the year 2018 were evaluated (Table and Figure 1). We examined 8288 children in the clinics of orthopaedics a musculoskeletal trauma teaching department (Figure 1); there were patients between 0-19 years who presented with trauma and orthopaedic disorders. The entire number of patients was examined in our clinics was 43600 patients during 2018.

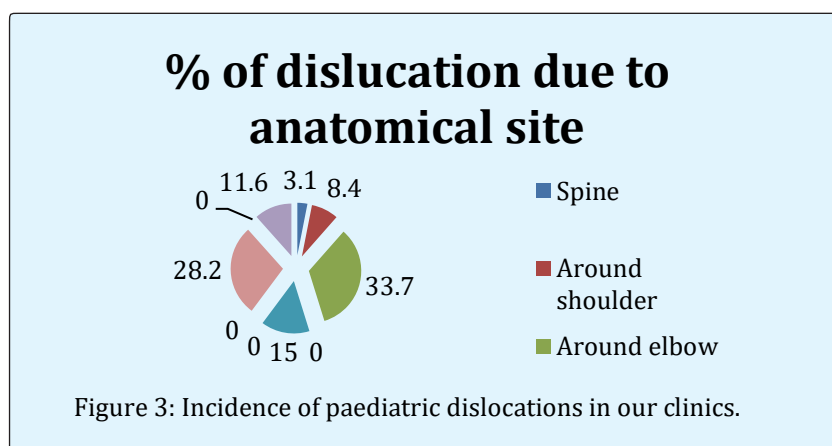
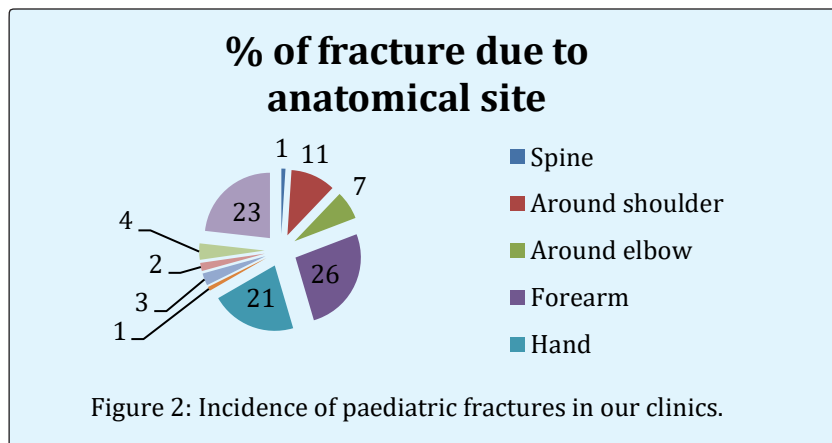


There were 7 vertebral fractures (1%) and 3 vertebral dislocations (3%), 181 (26%) were with forearm fractures (including distal radius), 161 (23%) ankle and foot fractures, 145 (21%) hand fractures, 75 (11%) around shoulder fractures, 32 (34%) around elbow

dislocations (including pulled elbow), 27 (28%) patellar (25)and knee(2) dislocations, 48 (7%) patients were treated for around elbow fractures. 11 (12%) were ankle & foot dislocations . 14 (15%) hand dislocations. (Table 1 and Figures 2 & 3).

Anatomic site	fracture	%	Dislocation	%
Spine	7	1%	3	3.10%
Around shoulder	75	11%	8	8.40%
Around elbow	48	7%	32	33.70%
Forearm	181	26%	0	0%
Hand	145	21%	14	15%
Pelvic	6	1%	0	0%
Hip	24	3%	0	0%
Around knee	15	2%	27	28.20%
Leg	26	4%	0	0%
Ankle & foot	161	23%	11	11.60%
Total	688	100%	95	100%

Table 1: Frequency of fractures and dislocations by anatomic site.



Distal forearm fracture was the most common fracture 181 (26%) in paediatric age group followed by dislocation around elbow mainly pulled elbow 32 (34).

Discussion

The study analysed 783 patients with fractures, epiphyseolysis and dislocations in paediatric age group (0-19) as per age classification of paediatric patients in Slovak health system. The most common site of fractures was at distal forearm specifically distal radius fracture (26%), which similar to a study done in north of Jordan and with the study which was done in United States of America by Naranje and in the most European countries [3,4].

The most common of fractures and epiphyseolysis among children were in these common sites, first one is distal forearm fracture (26%), second were ankle and foot fractures (23%) and the third was hand fractures (21%). The most common sites in paediatric dislocations, first in around elbow dislocation due to the high incidence of pulled which agreed with my study in north of Jordan [3] and the second was around the knee dislocations (including knee dislocations) mainly due to patellar dislocation.

Conclusion

Fractures and dislocations in paediatric age groups is a common problem. Distal radius fracture and Pulled elbow are the most common fractures and dislocations among childhood (0-19 years) in our University Hospital. Properly prevention programs can be effective in reducing the number and severity of paediatric trauma events like new European road traffic law. Prevention

should aim to reduce the level of risk and encouraging children to use safety equipment and the parents to use safety equipment in their vehicles.

Acknowledgment

We thank the staff of Emergency department and our colleagues in our institution who help us in this study.

Conflict of Interest Statement

The authors declared that the research was conducted in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

References

1. Miller M, Thompson S (2015) Millers Review of Orthopaedics. 7th (Edn.), Elsevier.
2. Solomon L, Warwick D, Nayagam S (2014) Apley and Solomon's Concise System of Orthopaedics and Trauma. 4th (Edn). CRC Press.
3. Gharaibeh Ahmad, Abu-Lobbad Ali F, Ababneh Mostafa H, Lacko Marek, Čellár Róbert, et al. (2010) Prevalence of children's fractures and dislocations in a teaching hospital at North province of Jordan. *Prevenca úrazů, otrav a násilí* 4(2): 129-134.
4. Naranje Sameer M, Erali Richard A, Warner William C, Sawyer Jeffrey R, Kelly Derek M (2016) Epidemiology of Pediatric Fractures Presenting to Emergency Departments in the United States. *Journal of pediatric orthopaedics* 36(4): 45-48.

