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Research article

PATTERN OF FRACTURES AND DISLOCATIONS IN A TERTIARY CARE HOSPITAL, NORTH EAST KARNATAKA

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ABSTRACT

Background: Trauma including accidents are today's world concern forming a major non-communicable epidemic accounting for mortality and morbidity. The aim of the study was to determine and account the types of fractures and dislocations presented to Bidar Institute of Medical Sciences (BRIMS), Bidar, Karnataka, India. **Methods and Material:** This study is of retrospective in nature with a review of hospital inpatient case sheets of orthopaedic department in our hospital presented between July 2011 to Dec 2011. The data gathered was analysed by percentages. **Results:** Out of 132 cases analysed males (82.56%), outnumbered female (17.42%); 67.42 % of cases were between 18-45 years age group; femur (22.17 %) was the most commonly involved bone followed by tibia (13.21%), foot (10.85%); tibia & fibular (8.96%) involvement. Less common were spine (0.47%), vertebra (0.94%) and scapula (0.94%). Fracture-dislocation was more common in lower limb (59.91% - ankle joint was most common-50%) compared to upper limb (30.66%- shoulder joint: 12.5%). **Conclusions:** Among of 132 cases admitted 212 fractures & dislocation was noted. Male (82.56%) was more common than females (17.42%). Age group most commonly involved was between 18-45 years (67.42%). Fracture was more common in femur (22.17%) & dislocation was common in hip (42.86%) because of high velocity injury. Approach towards the prevention of accidents by effective safety education, good roads and early intervention which is the need of the hour. Effective drugs should be made available in the casuality so that crush injuries are managed without complications like septicemia and tetanus.

Key words: fracture, pattern, dislocation, tertiary hospital.

INTRODUCTION

Man has to pay a heavy price due to altered fast life as a result of the rapid advent of progress in technology. These added to the fast life to meet the needs of daily, are prone to accidents. These factors are precipitated by poorly engineered road leading to heavy casualty resulting in varied pattern of fractures and dislocations. The presentation of trauma picture follows a particular pattern, dictated by the huge movement of population to meet the social needs and during particular season namely rainy and summer. This has added a huge burden to the society, resulting in morbidity and mortality and really a deep concern and liability to the nation at large. Due to high velocity injury as a result of RTA (Road Traffic Accidents), industrial accidents, train accidents, the presentation of fracture pattern and types are varied and challenging. It requires a highly effective trauma

team care to prevent mortality and morbidity. The fractures and dislocations require highly skilled care.

Accidents accounts for the 5th leading cause of mortality, which accounts for 5.2% of all mortality, according to 1996 who report[1].Though the rates is noticeably decreased in developed country, still it is a burning problem in developing countries[2]. The leading cause of death and disability for people under 45 years in the industrialized world is due to injury[3, 4]. The accident is a major epidemic non-communicable disease in the world. It has resulted in a socioeconomic loss to the country and the community at large RTA poses a major problem in huge proportions in many places, mostly in industrialized populations. Bidar that bridges Hyderabad to northeast Karnataka, leading to Mumbai is highly congested, busy road accounting for major casualty that reports to BRIMS teaching hospital. The institute serves as a major teaching care hospital catering part of Medak district of Andrapradesh, northeast of Karnataka, Maharastra. Hence the aim of this study was to know the types of fractures and dislocations due to RTA, and train accidents presenting to BRIMS Teaching Hospital, Bidar.

MATERIAL AND METHODS

A retrospective study was done, with an object of analyzing the data available on trauma cases in the orthopaedic inpatient department of BRIMS, Teaching Hospital and Bidar. The study pattern includes the fracture and dislocation due to RTA and train accidents, OPD data has been purposefully excluded from the study. The Institutional Ethical clearance was obtained. The mode of study was retrospective in nature and confined only to the inpatient data, including both males and females, and all age groups were included. The case sheets were compiled and analysed from the MLC (Medico Legal Case) record section as all RTA cases come under medicolegal section. The information that gathered from the record department compromised of patient data, mode of injury, types of fracture and dislocation. The collected data was compiled and subjected to simple analysis and were expresses as percentages. Inclusion criteria) Inpatients with Fractures and dislocations due to RTA and train accidents admitted to orthopaedic; b) both males and females of all the age groups were included. Exclusion criteria: a) All pathological fractures due to infections were excluded; b) Patient not willing to participate / discharged against medical advice was excluded from the study.

RESULTS

Out of 132 cases analysed male 109 (82.56%), outnumbered female 23 (17.42%). 67.42 % was between 18-45 years age group followed by >45 years (19.70%) & <18 years 17 (12.88%); femur (22.17 %) was the most commonly involved bone followed by tibia (13.21%), foot (10.85%) ;tibia & fibula (8.96%), humerus (8.01%), clavicle (7.55%), radius only (6.60%); ribs, patella, hand were around 3-4% involved. Less common was vertebra (1.42%), scapula (0.94%) (table-1). Fracture-dislocation (table-2) was more common in lower limb (59.91% - ankle joint was most common-50%) when compared to upper limb (30.66%- shoulder joint: 12.5%) (Table-3). Dislocation (table-4) was common with hip (42.86%) followed by shoulder & ankle each accounted for 28.57%.

Table: 1- Pattern of Bone Involvement.

Bone	No of cases	Percentage (%)
Femur	48	22.17
Tibia Only	28	13.21
Foot	23	10.85
Tibia And Fibula	19	8.96
Humerus	17	8.01
Clavicle	16	7.55
Radius Only	14	6.60
Ribs	8	3.77
Patella	7	3.30
Hand	7	3.30
Radius And Ulna	6	2.83
Pelvis	6	2.83
Facial Bone	4	1.89
Ulna Only	3	1.42
Vertebra	3	1.42
Fibula Only	2	0.94
Scapula	2	0.94
Total	212	100

Table-2: Fracture Distribution Involving On Axial Bones

Fracture Distribution	No of cases	%
Upper Limb	65	30.66
Lower Limb	127	59.91
Others	20	9.43
Total	212	100

Table-3: Fracture Involving Joints and Associated with Dislocations

Joints	No of cases	%
Upper Limb Joints		
Shoulder	2	12.5
Wrist	1	6.25
Lower Limb Joints		
Ankle	8	50
Hip	3	18.75
Knee	2	12.5
Total	16	100

Table-4: Simple Dislocation

Dislocations	No of cases	%
Hip	3(Post:2right & 1left)	42.86
Shoulder	2(Ant:1right & 1 Left)	28.57
Ankle	2	28.57
Total	7	100

DISCUSSION

In our retrospective planned study most common age group was between 18-45 years followed by >45 years. Age group between 18-45 years the most productive, highly stressful period & mobile group aiming to settle in life accounting for 67.42%. Above 45 years age group are generally prone to trauma because of age factor accounting for 20%. Age grouped in our scenario was similar to Meena et al[5] involving 3rd & 4th decade; & Okoro et al[6] study showed 4th decade population was more commonly involved. Jhan et al[7] study showed that between age group of 20 – 40 years, 53 % of the victims were involved in a tertiary hospital in South India.

Male to female ratio in present study was 4.73:1 which was slightly higher when compared to Swarnkar m et al[8] (3.9:1) & in contrast both Meena et[5] al & Okoro et al[6] studies showed male to female ratio of 1.8:1

In our study lower limb involvement (59.91%) is much higher compared to upper limb (30.66%) involvement, which was in similar to Okoro i o etal[6], Akiodeo et al[9] & Achibong et al[10]. But in another study done by Meena et al[5] showed upper limb (70%) more commonly involved than lower limb (20%). Because of varied risk factors, road traffic varies from one location to another location, thus the overall most common bone involved in present study was femur (22.17%) followed by only tibial involvement (13.21%). And in the upper limb humerus (8.01%) was the most common bone followed by clavicle (7.55%) & radius (6.60%). Present study includes fractures more commonly due to RTA, which was incomparable with other studies[11, 12, 13]

CONCLUSION

The study reviews the incidence of fractures due to RTA, is more and on par with other tertiary teaching hospital. Among of 132 cases admitted 212 fractures & dislocation was noted. Male (82.56%) was more common than females (17.42%). The age group most commonly involved was between 18-45 years (67.42%). The fracture was more common in the femur (22.17%) & dislocation was common in hip (42.86%) because of high velocity injury**.** It is need to stress upon the multi level approach Highly skilled and trained trauma team; use of Effective drugs, including broad spectrum antibiotics that can cover gram positive, gram negative, aerobes & anaerobic organism; and immunoglobulin's should be made available in the casualty so that fractures and dislocations with crush injuries are managed without complications like septicaemia and tetanus and can deliver proper care, thereby preventing morbidity and mortality.

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