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ORIGINAL RESEARCH

Assessment of Pediatric maxillofacial trauma

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ABSTRACT:

Background: The facial injury leaves everlasting impact on psychological development and behavior of patients. The present study was conducted to determine the cases of maxillofacial trauma in children. **Materials & Methods:** The present study was conducted on 126 children with trauma. Maxillofacial trauma involving facial bones and reason for trauma was recorded. **Results:** Age group 6-8 years had 40 boys and 26 girls, 9-11 years had 20 boys and 24 girls and 12-15 years had 10 boys and 6 girls. Maxilla was involved in 30, angle in 28, zygoma in 12, nasal bone in 12, body in 25 and symphysis in 19. The difference was non-significant ($P > 0.05$). The reason for trauma was road side accident in 31, fall in 40, sports injury in 45 and domestic violence in 10. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that common reasons for pediatric trauma are the road side accidents, sports injury and fall.

Key words: Children, Trauma, Symphysis

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INTRODUCTION

Facial trauma associated with severe injury is real challenges to surgeons, and there is subsequent functional and esthetic impact to the growing child and the economic and emotional

burden to the patient and family can be overwhelming.¹ Anatomic and developmental differences between pediatric patients and adults alter the diagnosis and management of injury. This lower incidence of facial fractures partially reflects the underdeveloped facial skeleton and paranasal sinuses of preadolescent children leading to craniofacial disproportion and additional strength of the maxilla and mandible from unerupted dentition.²

These fracture patterns and mechanisms of injury varies with age. Cranial and central facial injuries are more common among toddlers and infants, and mandible injuries are more common among adolescents. Although bony craniofacial trauma is relatively uncommon among the pediatric population, it remains a substantial source of mortality, morbidity and hospital admissions. Continued efforts toward injury prevention are warranted.³

Two peaks have been observed in the frequency of such fractures: The first, at the age of 6 to 7 years, is associated

with the beginning of school attendance. The second, at 12 to 14 years, is related to increased physical activity and participation in sports during puberty and adolescence.⁴ The present study was conducted to assess the cases of maxillofacial trauma in children.

MATERIALS & METHODS

The present study was conducted in the department of Pedodontics. It comprised of 126 children age ranged 6-15 years of both genders. All were informed regarding the study. Ethical approval was obtained from institute prior to the study.

Patient information such as name, age, gender etc. was recorded. Maxillofacial trauma involving facial bones and causes of trauma was recorded. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Age wise distribution of patients

Age group (Years)	Boys	Girls
6-8	40	26
9-11	20	24
12-15	10	6

Table I shows that age group 6-8 years had 40 boys and 26 girls, 9-11 years had 20 boys and 24 girls and 12-15 years had 10 boys and 6 girls.

Graph I Age wise distribution of patients

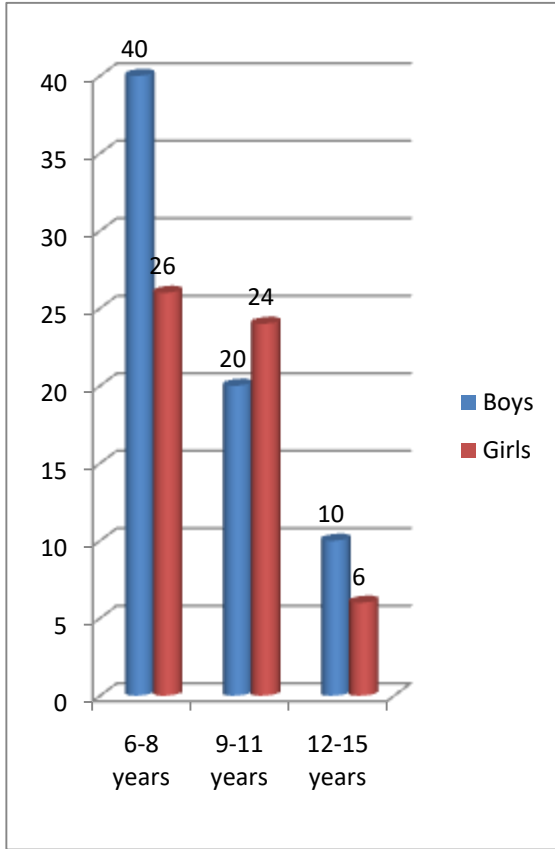


Table II Trauma in children

Site	Number	P value
Maxilla	30	0.5
Body	25	
Zygoma	12	
Angle of mandible	28	
Nasal bone	12	
Symphysis	19	

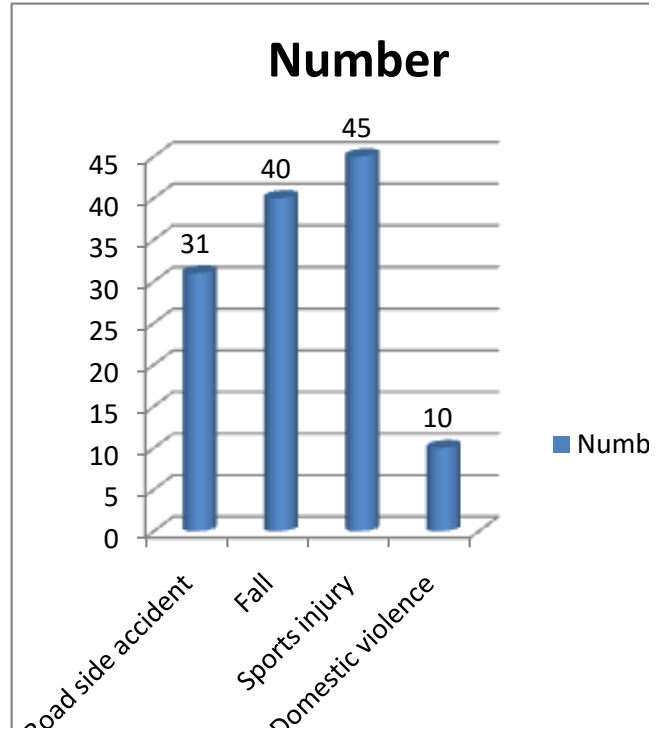
Table II shows that maxilla was involved in 30, angle in 28, zygoma in 12, nasal bone in 12, body in 25 and symphysis in 19. The difference was non-significant ($P > 0.05$).

Graph I shows that reason for trauma was road side accident in 31, fall in 40, sports injury in 45 and domestic violence in 10. The difference was significant ($P < 0.05$).

DISCUSSION

The maxillofacial region is the most exposed part of the body and is more vulnerable to trauma. Maxillofacial injuries of children and adolescents are less common than adults.

Graph II Reason of trauma



The facial injury leaves everlasting impact on psychological development and behavior of patients.⁵ Although many make a good recovery, morbidity includes temporary or permanent disfigurement, loss of function and psychosocial problems. Facial trauma may, rarely, be life threatening. The spectrum of craniofacial injuries is related to the specific developmental stage of the craniofacial skeleton. Falls during leisure activities, both at home and on the playground, collisions, bicycle accidents and different sports activities have been reported as the primary causes of facial injury in young children and teenagers worldwide.⁶ The present study was conducted to assess the cases of maxillofacial trauma in children.

In present study there were 126 children with maxillofacial trauma. Age group 6-8 years had 40 boys and 26 girls, 9-11 years had 20 boys and 24 girls and 12-15 years had 10 boys and 6 girls.

Thorén et al⁷ found that such fractures are found more in boys and their prevalence increases with age. The main causes of pediatric facial fractures are motor vehicle accidents, falls and sports-related injuries. Nasal fractures are by far the most prevalent type of facial fracture among children of all ages, but mandibular fractures are the type of pediatric facial fracture most commonly seen in the hospital setting. Closed reduction was selectively applied in condyle fractures and dentoalveolar trauma. The treatment options are open reduction and plate fixation in children. There is no need for wire suspension and only occasional need for IMF. Titanium plates are removed after fracture healing. Fractures of the pediatric facial skeleton have special characteristics, and specific knowledge is necessary for their diagnosis, management and follow-up.

We observed that maxilla was involved in 30, angle in 28, zygoma in 12, nasal bone in 12, body in 25 and symphysis in 19. Stylogianni et al⁸ found that the most common facial fractures were mandible, nasal and maxillary/zygoma. The most common mechanisms of injury are motor vehicle collisions, violence and falls. These fracture patterns and mechanisms of injury varies with age.

We found that reason for trauma was road side accident in 31, fall in 40, sports injury in 45 and domestic violence in 10. Subhashraj et al¹⁰ found that Maxillofacial fractures accounts for 93.3% of total injuries. The mean and standard deviation for the age of the patients were 35.0±11.8 years and with a minimum age of 5 years and maximum age of 75 years. Adults from 20 to 40 years age groups were more commonly involved, with a male to female ratio of 3:1. There was a statistically significantly higher proportion of males more commonly involved in accident and injuries (P <0.001). The most common etiology of maxillofacial injury was road traffic accidents (RTA) followed by falls and assaults, the sports injuries seem to be very less. In RTA, motorized two-wheelers (MTW) were the most common cause of incidents. The majority of victims of RTA were young adult males between the ages of 20 to 40 years. The malar bone and maxilla were the most common sites of fracture, followed by the mandible. The right side of the zygomatic complex was the predominant side of MTW injury. The majority of the zygomatic complex fractures were treated by conservative management. Open reduction and internal fixation were performed for indicated fracture patients.

CONCLUSION

Authors found that common reasons for pediatric trauma are the road side accidents, sports injury and fall.

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