

PATTERN OF FACIAL FRACTURES IN CHILDREN

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ABSTRACT

The objective of this study was to determine the pattern of maxillofacial bone fractures and list the causative factors of trauma in children. It was a descriptive case study and was carried out in Oral and Maxillofacial Surgery Department of Oral and Dental Hospital, Khyber College of Dentistry, Peshawar from 2nd April 2007 to 2 September 2007.

A self-administered structured Proforma having history and clinical examination related information in addition to some conceptual statements pertaining to a maxillofacial trauma was used to collect data. Data were collected from 100 patients.

Result showed male to female ratio 2.5:1 and the highest incidence was found in the age group of 5–8 years. The main etiological factor was fall (57%). It was concluded that Fall and Road Traffic Accident (RTA) were the highly significant risk factors.

Key words: Maxillofacial fractures, Causes, Children

INTRODUCTION

Maxillofacial trauma can range from minor injury to disfigurement that last for lifetime. Pediatric facial trauma differs from adult trauma because the face in child is not fully formed and future growth will be a factor how the child heals and recovers. Maxillofacial fractures in children are less common when compared with adults.^{1,2}

Major injuries affecting the face are associated with hyperactivity of the child.³ Fall, road traffic accidents (RTA), assault and child abuse are the most frequent risks of facial bone fractures in children. Other risks may be animal hit or bite or firearm injuries (FAI).^{4,5,6}

METHODOLOGY

A total of one hundred children with maxillofacial trauma formed the subject of the study which was conducted at Khyber College of Dentistry, Peshawar from April 2007 to September 2007.

Patients above 16 years of age and those who had suffered maxillofacial trauma but did not show clinical

or radiographic fracture of facial bones were excluded. Before collecting information, a written informed consent was taken from parents or guardian. A thorough history taking and clinical examination was completed for each patient. Information about the variables of the study (causes i.e fall, road traffic accident, sports, fire arm injury, assault, animal hit or bite and any other) written in the proforma was collected. Finally the fracture was confirmed on clinical and radiological examination. The standard radiographs were periapical, orthopantomogram, posterior anterior view of face, para nasal sinuses (Waters) view, sub mento vertex (Jug Handle) view, true lateral and lateral oblique view of face as and where needed. The selection of radiographs was according to the case.

The data collected were analyzed by Statistical Package for Social Sciences (SPSS) version 10.

RESULTS

100 maxillofacial fractures were recorded. The highest incidence was in males 72 (72%) and females 28 (28%), with the male to female ratio of 72:28 (2.5:1) Fig 1.

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Most fractures were seen in the age group of 5-8 years (36%), followed by 9-12 years (32%), 13-16 years (18%) and the least number of fractures were seen in the age group of 0-4 years (14%) Fig 2.

Minimum age was recorded as 2 years and maximum 16 years. Age range of patients in the survey was 2-16 years.

The leading cause of trauma in the study was fall (57%), which accounted for more than one half of the injuries. Beside fall, children were injured by RTA (30%), sports (1%), FAI (2%), assault (5%), machines and industrial (2%), animal hit or bite (1%) and others (2%). Table 1

TABLE 1: RISK FACTORS OF MAXILLOFACIAL TRAUMA IN CHILDREN

Risk factor	Frequency	Percent
Fall	57	57.0
RTA	30	30.0
Sport	1	1.0
FAI	2	2.0
Assault	5	5.0
Machine/industrial	2	2.0
Animal bite	1	1.0
Other	2	2.0
Total	100	100.0

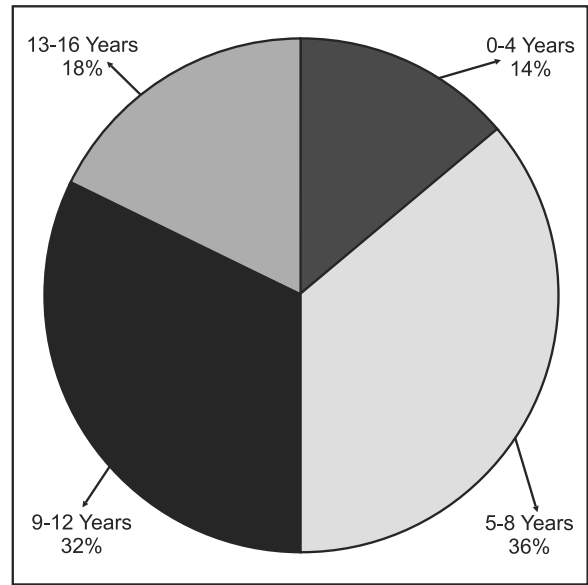


Fig 2: Age wise distribution of the patients

DISCUSSION

There has been interest worldwide to document and report risk factors of facial bone trauma.^{7,8} Maxillofacial injuries are very significant, in long term they could be serious particularly from psychological point of view. Distortion of face, speech and mastication difficulties are often the result of these injuries.⁹

The rationale (purpose) of the study was to determine the various risk factors of maxillofacial fractures in children reporting at Khyber College of Dentistry, Peshawar and to share these information with general dental practitioners in far flung areas and the professional colleges, so that they could recognize the problem and manage it or refer these patients to the specialized centers in time to avoid complications. The patterns of risk factors of facial trauma observed in this study reflect the general trends found in previous facial trauma review.¹⁰

In the present study boys were more involved in fractures of facial bones than girls and the ratio of 2.5:1 is higher than the value quoted previously by Al Boosi and Perriman (2:1), Stylogianni (1.4:1.6), and near to Hall and Morgan (2.3:1). However, MacLennan reported no sex predilection.¹¹

Social, cultural and environmental factors vary from one country to another and even within the same country. These have been reported to influence the incidence and risk factors of maxillofacial trauma.⁴

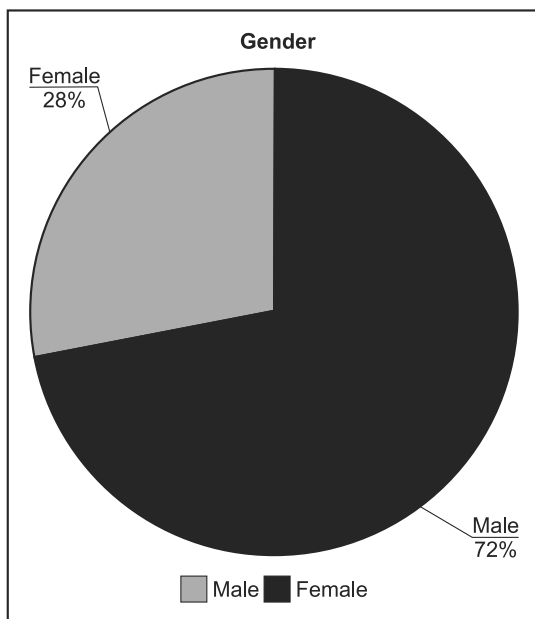


Fig 1: Gender Distribution

An increasing male to female ratio found in this study is due to male dominant society. Male are more actively involved in outdoor activities, more careless and less restrictions are over them by the parents. In this culture female children are not given permission to take part in outdoor activities by their parents.

Trends in maxillofacial trauma in children are dictated by various factors, the most important of which is age.¹² In the present study maximum facial bone fractures occurred during the age of 5-8 years. During this age child moves from a state of dependence to one of independence. As this is school going age he or she is more prone to risk factors of maxillofacial trauma like Fall and RTA.

In the present study the highest incidence occurred in the age group of 5-8 years and lowest 0-4 years, which is comparable to the study of Ogunlewe.¹³

Age 2 years and below, the facial bone fractures were not documented in Pakistan which is also the case in this study, where as it is 1% mentioned in other studies.^{14,15}

The road and outside environment remain the most common cause of trauma in children like other studies.^{16,17}

Fall was the most common risk factor as was shown in a study done in Germany.¹⁸ Young children are reported to sustain injuries from low velocity forces e.g. fall.⁴

RTA and assault do not coincide with the study done by G. Dimitroulis¹⁹ because of introduction of safety legislation such as compulsory wearing of seat belts by all the passengers and better condition of roads in western countries.

The cases of FAI in the present study are less as compared to study done on adult patients.²⁰ Only two cases due to machine/industrial accidents were seen. Small number of such cases seen in this region are probably due to the fact that there are very few industrial units in this area. Of particular interest in the study is the declining incidence of sports injuries. This is due to lack of sport facilities.

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