INTRODUCTION

Dentoalveolar fracture (DAF) is quite common and usually seen as an emergency. Dentoalveolar fracture may be defined as that fracture in which displacement, subluxation, avulsion or fracture of the teeth occurs in association with fracture of the alveolus. Alveolar process is that part of the mandible and maxilla, which surround and support the teeth. The alveolar process is formed with the development and eruption of teeth and conversely it gradually diminishes in height after the loss of teeth. Trauma to the oral region occurs frequently and comprises 5% of all injuries. Approximately 50% of the children are exposed to dental trauma before school leaving age.

METHODOLOGY

This descriptive study was carried out at oral and maxillofacial surgical unit, Khyber College of Dentistry, Peshawar Pakistan. Study duration was six months and was conducted on 100 patients with dentoalveolar injuries. Patients with Crown infraction, uncomplicated crown fracture, concussion, and isolated soft tissue injuries were excluded. Written consent of the patients or from attendants was obtained through proforma. Clinical examination was performed on each patient. Periapical radiographs were taken of each patient and orthopantomogram were taken when considered necessary.

RESULTS

Hundred cases of dentoalveolar fractures were included in this study to determine the etiology, age & gender distribution. The age range was 3-60 years with mean age 18.17 years (Std Deviation 13.08). The overall age distribution showed the peak incidence was in the 1st decade of life (36%), followed by the 2nd decade (35%) and a sharp decrease in incidence after the second (13 cases in the 3rd decade). i.e. 71% of the patient population presented in the 1st and 2nd decades of life and 84% of all dental trauma occurred before 30 years of age. (Table 1). DAF was common in males (73%), as compared to females (27%). The male to female ratio was (2.7: 1). (Fig 1)

Road traffic accidents (RTA) were the major causes of DAF (39%), followed by fall (31%). Unorganized playing contributed (8%) followed by Sports accidents (7%), Violence (5%), work accidents (4%) and fire arm injury were both (4%). (Table 2). Road traffic accident was 71.4% in the 1st and 2nd decade, while 76% of the fall was also in 1st and 2nd decade.

Key words: Khyber College of Dentistry, fractures, dental trauma

1 Oral and Maxillofacial Surgeon, Lecturer, Khyber Girls Medical College, Peshawar. H.No.431, Street No. 14, E.5, Phase-7 Hayat Abad, Peshawar, Pakistan. Phone: 0092 91 5863303, Mobile: 03005669116, E. mail: meetmeshi@yahoo.com

2 Assistant Professor, Khyber College of Dentistry, Peshawar
DISCUSSION

Dentoalveolar fractures are most frequent and serious among the youngest age group. Greater incidence of dental injuries occurs through the age of 18 to 23 years. Many other studies show that childhood is the most susceptible period for occurrence of facial trauma and the peak age is 8 years. The result of this study are in agreement with the above studies and shows greater incidence of DAF in 3 to 10 years of age. This is explained by Oikarinin, that young children do not possess enough motor co-ordination to minimize injuries when striking their face against objects. The present study also showed greater incidence of dentoalveolar trauma in patients ranging from 11 to 20 years (35%) and this was in agreement with other studies carried out by Da Silva and Zuhal et al. This study shows a trend of trauma occurrence in school-age patients, possibly as a result of more playing activities of these individuals. This can also be attributed to increased unsupervised physical activity and sports in this age group. The results also agree with the findings and suggestions of Ogunlewe and Oji C. that as the children grow older, maturational changes in their facial anatomy make them more susceptible to orofacial fractures. In addition, children older than 12 years tend to become more independent and involved in more social activities with less parental protection.

Boys have more traumatic dental fractures (22.4%) than girls (12.6%). According to Gassner, male to female ratio is 3.3:1. This difference in the gender distribution is supported by previous studies, and differs with Gutmann who reported equal involvement of males and females. The explanation for these findings could be the historically active role played by men in our society, while females are mostly confined to home. Moreover, girls are more mature in their behavior than boys, who tend to be more energetic and inclined towards vigorous outdoor activities.

Male to female ratio in this study was 2.7: 1. This difference in the gender distribution is supported by previous studies, and differs with Gutmann who reported equal involvement of males and females. The explanation for these findings could be the historically active role played by men in our society, while females are mostly confined to home. Moreover, girls are more mature in their behavior than boys, who tend to be more energetic and inclined towards vigorous outdoor activities.

Most common causes of dentoalveolar fracture are activities of daily life (household accidents), sports, acts of violence, road traffic accidents and work accidents. In developmental countries, violence followed by road traffic accident are the predominant causes, while in developing world, the causative factors are reversed.
with most being the result of road traffic accidents.  Road traffic accident was the most common etiological factor of DAF in this study. This is against the observations of other authors who reported fall as the most common etiological factor. This may be due to the fact that street playing among children is a common practice in Peshawar, and therefore children and pedestrians are hit by vehicles and motorcycles. This is peculiar to the overpopulated city of Peshawar with narrow roads but no pedestrian foot paths and zebra crossings. Most of the traffic accidents were because of that patients were not using a seat belt or safety helmet, in spite of the fact that it is mandatory. Likewise, in bicycle accidents 100% of patients were not wearing protective devices. One of the reasons for the road traffic accidents as the leading cause of dentoalveolar trauma is that, in the developing countries traffic rules are not properly observed.

According to Nilatty study carried out in Turkey, fall is the most common cause of dentoalveolar trauma in all age groups (42.7%) as compared to other etiological factors like, hit (18%), sports (16%), collision with an object (14.7%) and road traffic accident only (3.3%). According to Khan fall is the most common cause of fracture of incisors in Peshawar. A study in Brazil also showed fall to be the most common cause of dentoalveolar injuries (72.4%) followed by road traffic accident (6.8%). Fall was the second most common etiological factor accounting for 31% in this study. The reason may be the exclusion of isolated dental injuries in this study.

Unorganized playing is the 3rd common cause of DAF. As Peshawar is less developed city with few playgrounds, the children often do not play an organized sport but usually they run behind each others, and collision occur resulting in DAF. Beside this, most of the schools are situated in very small houses having no open spaces or play grounds, so the children are compelled to play on the cemented floor.

Participation in contact sports, such as hockey, soccer, football, and boxing can result in dentoalveolar fracture. Sports related DAF in this study were 7%, which differs from findings of other studies. This may be due to lack of contact sports, like skiing, ice skating, rugby, soccer and wrestling. The present study shows violence (5%) as etiological factor. This is also less than earlier studies. Although Pathans (residents of Khyber Pakhtun Khwa. Pakistan) are famous for fighting, but dramatically violence is less than in Europe and USA. This may be due to non consumption of alcohol, absence of bars and casinos. Fire Arm injuries are accounted for 4% in the etiology of DAF. This may be due to easy availability of guns. This study shows that the social and educational status of a population has a strong impact on the etiology of the DAT.

One interesting cause in this study was horse kick accounting for 2% of etiology. All of them were kochwan (equestrian). Prevalence of injuries caused by animal is largely related to cultural factors, since the cause and incidence of maxillofacial injuries vary from one country to another or from one region to another region in the same country. Horse related injuries account for a large percentage of head/ maxillofacial trauma in a pediatric farm population.

CONCLUSION

The study shows that majority of the patients were in their young age. Males were more common than females. The most common etiological factor was road traffic accident, followed by fall. In the light of present study the following recommendations are made;

To reduce the incidence of road traffic accidents, the traffic rules and regulation should be strictly enforced including use of child passenger restraints, helmet, seat belts and safe pedestrian areas. Mouth guard wearing during contact sports should be compulsory.

REFERENCES

Age, Gender distribution and Etiology of Dentoalveolar Fractures

8 Liew V, Daly C. Anterior dental trauma treated after hours in Newcastle, Australia: Comm Dent Oral Epidemiol 1986; 14: 362.