Main Article

CLINICAL STUDY OF MAXILLOFACIAL TRAUMA IN KASHMIR

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ABSTRACT: *The present study of 206 cases admitted with maxillofacial trauma reveals that road traffic accidents account for 67 cases (32.52%) followed by missile injury 55 cases (26.70%), fall 39 cases (18.93%), bear slap 21 cases (10.19%), assault 14 cases (6.80%) and others 10 cases (4.86%). The cases of maxillofacial trauma were also analysed according to age and sex distribution and type of injury.*

It was found that road traffic accidents was the commonest cause of injury in males (34.21%) and in females the commonest cause of injury was fall (35.18%). Maximum number of cases 72 (34.95%) were found in the age group of 21-30 years and the mixed type of injury was common (60.68%) and mostly involving the middle third of face. Difficulty in chewing was the commonest presentation in road traffic accident.

Key Words: *Maxillofacial trauma (MFT), Road traffic accidents (RTA), Missile injury, Fall, Bear slap*

INTRODUCTION

Maxillofacial trauma is very frequent, the causes of which may be road traffic accidents, fall, missile injury, assault, sports injury, etc.[1,2] The maxillofacial bony complex is comprised of maxilla, zygoma and nose, constituting the middle third of the face. As the number of high speed accidents increases so does the complexity of injuries. The cause of maxillofacial trauma varies with age and sex.[3] The mean age of presentation is between 2nd and 3rd decade of life,[2,4,5] and with respect to sex distribution previously males were more commonly involved, now both sexes are almost equally involved because of change in life style. Maxillofacial trauma may occur alone or with other injuries like laryngotracheal trauma, penetrating neck injuries, cervical spine injuries, orbital injuries, chest and abdominal trauma and other skeletal injuries.

MATERIALS AND METHODS

The study was carried out on 206 patients, from Feb, 1999 to Jan, 2001. A detailed history with respect to sex, age, residence and clinico-symptomatology was taken. Cases were allocated to, 6 different groups of etiologies and 3 types of injuries. Patients with maxillofacial trauma were adequately evaluated and also those patients with associated head, chest and abdominal injuries were referred as and when required. Routine investigations CBC, blood grouping, chest X-ray, X-ray of paranasal sinuses and facial bones and CT scan when required was done. Patients were treated conservatively and surgically.

The study excluded all those patients who were treated on OPD basis and who were dead on arrival or with associated craniocerebral injuries.

RESULTS

Road traffic accidents account for most of the maxillofacial injuries (32.52%) followed by missile injuries (26.70%), fall (18.93%), bear slap (10.19%), assault (6.80%) and others (4.86%). (Table 1). Maxillofacial trauma was common in males (73.78%) and male to female ratio was 2.8:1. The most vulnerable age group was found to be 21-30 years (34.95%). (Table 2). Maximum numbers of road traffic accidents (45.15%) were reported from urban areas while 21 bear slap cases (10.19%) belonged to the hilly rural areas of Kashmir Valley. Maximum patients had mixed type of injury i.e soft tissue and bone involvement (60.68%) mostly involving the middle third of face. (Table 3). Fractures of zygoma was common followed by maxilla, nasal bones and frontal bone. Lefort III was the commonest type of maxillary fracture followed by Lefort II and Lefort I. In our study 35 cases underwent tracheostomy for airway obstruction. History, Clinical Examination, X-ray PNS and CT scan had diagnostic accuracy of 98.4%. Difficulty of chewing was commonest symptom followed by signs of cerebral concussion and nasal bleeding. Out of 206 cases, 8 died mostly due to the hypovolumnic shock, in rest of the cases fracture reduction with soft tissue reconstruction was done.

DISCUSSION

In the present study road traffic accidents was the commonest cause of maxillofacial injury (32.52%)

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Table 1: Sex distribution and etiology of maxillofacial trauma

Mode of injury	Overal		Males		Females	
	No.	%	No.	%	No.	%
Road Traffic Accidents	67	32.52	52	25.24	15	07.28
Missile Injuries.	55	26.70	44	21.35	11	05.34
Falls	39	18.93	20	09.70	19	09.22
Bear Slap	21	10.19	18	08.73	03	01.46
Assault	14	6.80	11	05.33	03	01.46
Others	10	4.86	07	03.39	03	01 .46
a) Dog Biles	06	02.91	04	01.94	02	00.97
b) IndusirialAccidenis	03	01.46	03	01.46	00	00.00
c) Home Accidents	01	00.49	00	00.00	01	00.49
Total	206	100	152	73.78	54	26.22

Table 2: Age distribution

Age in years	Overall No. (%)	Road traffic accidents No. (%)	Missile injuries No. (%)	Fall No. (%)	Bear slap No. (%)	Assault No. (%)	Others No. (%)
0–10	26 (12.62)	03 (01.46)	06 (02.91)	11 (05.34)	—	—	06 (02.91)
11–20	39 (18.93)	15 (07.28)	14 (06.79)	04 (0.1.94)	05 (02.42)	—	01 (0.48)
21–30	72 (34.95)	26 (12.62)	20 (09.71)	07 (03.39)	09 (04.37)	07 (03.39)	03 (01.46)
31–40	38 (18.45)	09 (04.37)	09 (04.37)	11 (05.34)	03 (01.46)	06 (02.91)	—
41–50	20 (09.71)	08 (03.88)	04 (01.94)	04 (01.94)	04 (01.94)	—	—
51–60	08 (03.88)	04 (01.94)	02 (0.97)	01 (0.49)	—	01 (0.49)	
≥ 61	03 (01.46)	02 (0.97)	—	01 (0.49)	—	—	—

Table 3: Types of injury

Type of injury	Overall No. (%)	Road traffic accidents No. (%)	Missile injuries No. (%)	Fall No. (%)	Bear slap No. (%)	Assault No. (%)	Others No. (%)
Soft Tissue Only	37 (17.96)	13 (06.31)	03 (01.45)	04 (01.94)	11 (05.34)	01 (00.48)	05 (02.42)
Bone Only	44 (21.36)	—	22 (10.68)	16 (07.77)	—	04 (01.94)	02 (00.97)
Mixed	125 (60.68)	54 (26.21)	30 (14.56)	19 (09.22)	10 (04.85)	09 (04.36)	03 (01.45)
Total	206 (100)	67 (32.52)	55 (26.69)	39 (18.93)	21 (10.19)	14 (08.25)	10 (04.85)

followed by missile injuries (26.70%), similarly road traffic accident was the commonest etiological factor of maxillofacial injury as reported in various studies,[6-11] though Nakamura and Gross[12] attributed 59% of cases to intended violence and only 17% to automobile accidents. The missile injuries account for 26.70% of cases with maxillofacial trauma forming the second largest group due to the political turmoil in the valley.

The most common age group involved was 21-30 years (34.95%). These age groups correlate with the age group of 15-33 years in the studies.[9-17] The highest incidence in this

age group is due to the fact that this age group shows more activity in sports, fights, violent activities, industry and high speed transportation.

With respect to sex distribution, males comprised 152 cases (73.78%) and females 54 cases (26.22%), forming the male to female ratio of 2.8 :1. This male prepondence correlated with the study of Gussack et at[18] which shows male prepondence of 76-83%. A male : female ratio varying from 2:1 to 4:1 was reported by others,[13-15,17,19,20] This sex distribution is consistent with our series. The high percentage of males in our study could be attributed to the fact that men are mostly involved in the outdoor activities and are also exposed to violent interactions.

Maximum number of maxillofacial injuries were from urban area (Srinagar city) making people more prone to road traffic accidents while as bear slap cases belong to hilly (rural) areas where these people reside.

In our study 21 cases (10.19%) of maxillofacial injuries resulted from bear slap. No case of such injuries is documented in the available world literature. In one such patient of bear slap (Figure 1) in present series, soft tissue injuries were reconstructed by using various forehead flaps.

Middle third of face was commonly involved which is in accordance with Shepherd et al.[21] In our study soft tissue injuries constitute 17.96% only, bones only 21.36% and mixed in 60.68% cases, which is contrarary to the study of Karyouti[22] in which soft tissue injuries constituted 38.9%, bones 37.9% and mixed 23.7% only. The high percentage of mixed injuries in our series is attributed to the road traffic accident. Mixed injuries were treated by fracture reduction under local and general anaesthesia. Any airway obstruction was relieved with the help of tracheostomy.

It is recommended that use of helmets, seat belts & lower speed limits should be stressed for preventive measures besides avoiding violent activities.

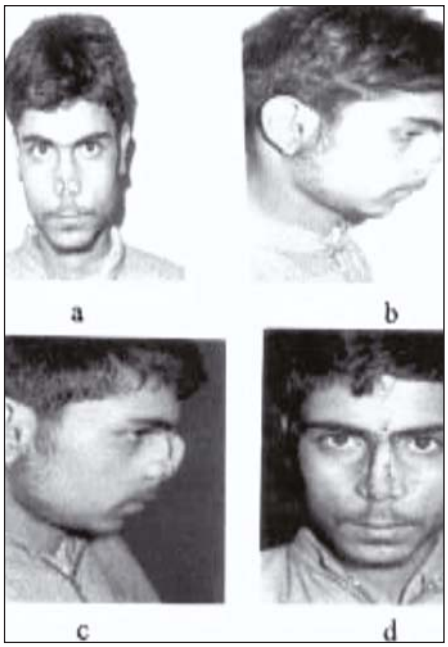

Figure 1: (a) preoperative anterior view. (b) preoperative lateral view. (c) preoperative forehead flap used for reconstruction of bear slap. (d) after six weeks postoperative appearance

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