No. 3 Volume 16 April 1988 Page 99–150

Journal of Cranio-Maxillo-Facial Surgery

Official Publication of the European Association for Cranio-Maxillo-Facial Surgery

The tubes ensure a stable foundation and support for severely lacerated nasal tissue, providing an immediate acceptable shape, appearance and function.
The long duration of the tubes in situ enhances healing by the stimulation of granulation tissue formation bridging mucosal gaps. The technique decreases the number of tracheostomies performed and reduces their duration when this has been necessary.
After removal of the tube the normal parabolic shape of the nasal vault is preserved.

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J. Cranio-Max.-Fac. Surg. 16 (1988) 126–129

A Comparative Study on Maxillofacial Fractures in Central and Eastern Anatolia

A Retrospective Study

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Submitted 19.3.1987; accepted 12.6.1987

Summary

The present report is an analysis of 190 patients with maxillofacial fractures from East Anatolia, and 212 patients with maxillofacial fractures from Central Anatolia. The aetiology, types, sites, sex, age, treatment and the results are discussed. These showed a high male : female ratio. The highest incidence was seen in the second and third dacades and the lowest incidence in the seventh decade. The predominant causative factor in this study was traffic accidents, followed by fights and falls. Fractures of the body of the mandible, and Le Fort I fractures in the midface, were the most common fractures in this study.

Key-Words

Maxillofacial fracture – Retrospective study – Trauma – Epidemiology

Introduction

Many studies have previously been reported concerning maxillofacial injuries and their treatment (*Donaldson*, 1961; *Killey*, 1977; *Ajagbe* and *Daramola*, 1980; *Ellis* et al., 1985), but the profiles of the trauma mechanisms and aetiology seems to be changing continuously, relative to geographical area, in each decade.

The aim of the present study is to analyse and compare the aetiologies, types, sites and treatments of maxillofacial fractures in Central and Eastern Anatolia.

Patients and Methods

The survey represents a large and significant sample, as patients were treated by various departments. Data, collected in this study, were obtained for the East Anatolian (E.A.) population from the Department of Maxillofacial Surgery, Faculty of Dentistry, University of Dicle and for the Central Anatolian (C.A.) population from the Department of Maxillofacial Surgery, Faculty of Dentistry, University of Ankara, and Department of Otorhinolaryngology, Faculty of Medicine, University of Ankara, Turkey.

The series comprised 402 patients (E.A.: 190, C.A.: 212) with maxillofacial fractures who were treated in three departments, in two different areas, between January 1982 and June 1986.

The records of the patients were evaluated. The factors considered were age, sex, cause of injury, types and anatomical sites, and mode of treatment (Fig. 1–3).

Results

149 of the E.A. patients (78.42%) were male and 41 (21.58%) were female. 158 of the C.A. patients (74.53%) were male and 54 (25.47%) were female (Fig. 1).

The most common fractures in this study were mandibular body fractures (E.A.: 31.37%, C.A.: 23.01%) followed by angle fractures (Table 1). In the E.A. group body/angle combined fractures, in the C.A. group symphysis fractures were third in prevalence. Tab. 1 shows the anatomical distribution of mandibular fractures.

LeFort I fractures were seen as the most common midface fractures in both groups (E.A.: 27.45%, C.A.: 25.86%; Table 2). In the E.A. group, LeFort II (25.49%), in the C.A.

Table 1 Anatomical site of mandibular fractures

Anatomical site	Number of patients (E.A.)	%	Number of Patients (C.A.)	%
Symphysis	18	17.65	17	15.04
Body	32	31.37	26	23.01
Angle	18	17.65	19	16.81
Ramus	2	1.96	2	1.77
Condyle	7	6.86	9	7.97
Body/Symphysis	1	0.98	2	1.77
Body/Angle	13	12.75	16	14.16
Body/Ramus	3	2.94	2	1.77
Body/Condyle	5	4.90	7	6.19
Symphysis/Condyle	1	0.98	3	2.66
Angle/Symphysis	1	0.98	7	6.19
Angle/Condyle	1	0.98	3	2.66
Total	102		113	

Table 2 Anatomical site of midface fractures

Anatomical site	Number of patients (E.A.)	%	Number of patients (C.A.)	%
Le Fort III	1	1.96	-	-
Le Fort II	13	25.49	11	18.97
Le Fort I	14	27.45	15	25.86
Proc. alveolaris	9	17.65	14	24.12
Midpalatal (vertical)	5	9.80	6	10.34
Fossa canina	4	7.85	3	5.17
Zygomatic complex	5	9.80	9	15.52
Total	51		58	

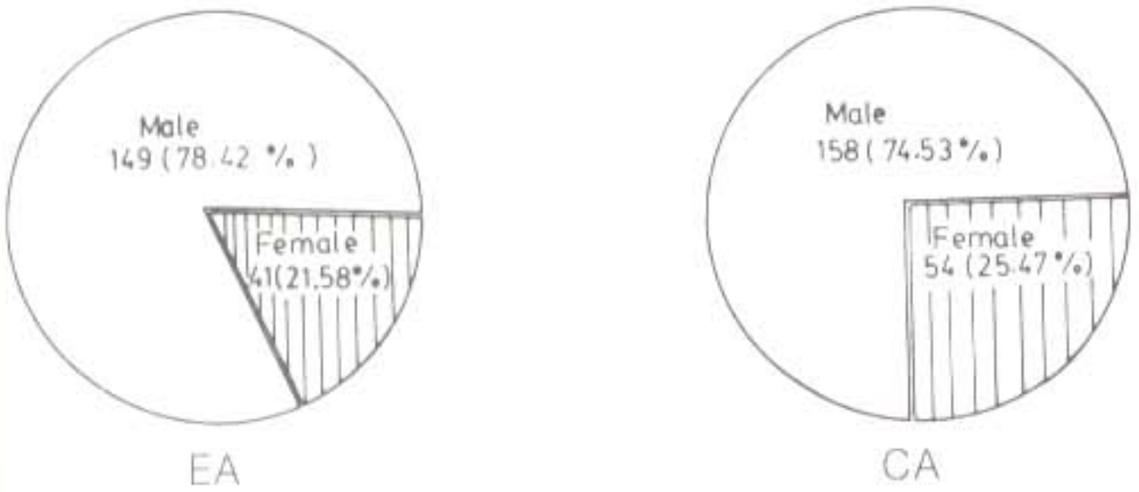

Fig. 1 Distribution according to sex in the two areas.

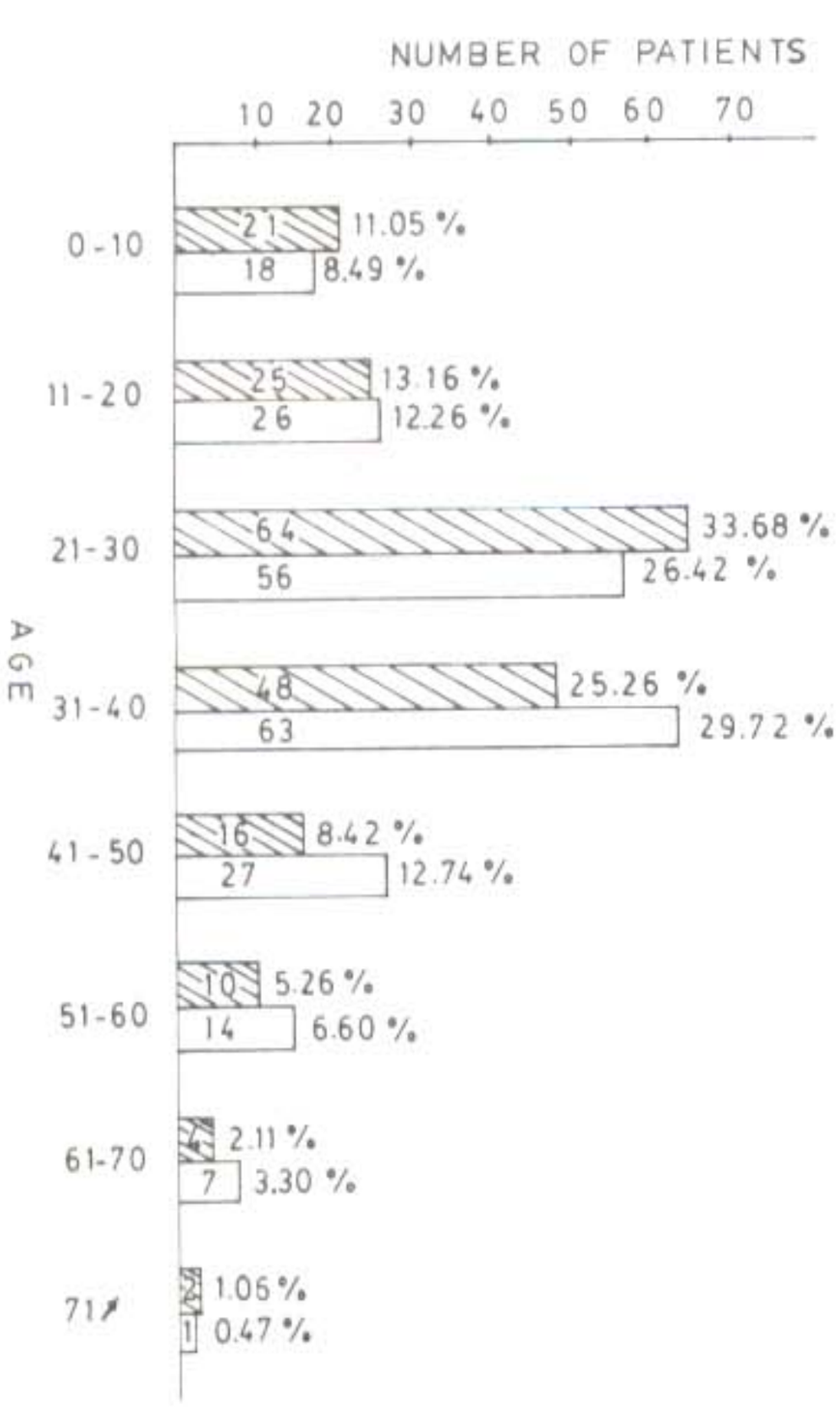

Fig. 2 Distribution according to age (E.A. = hatched, C.A. = white).

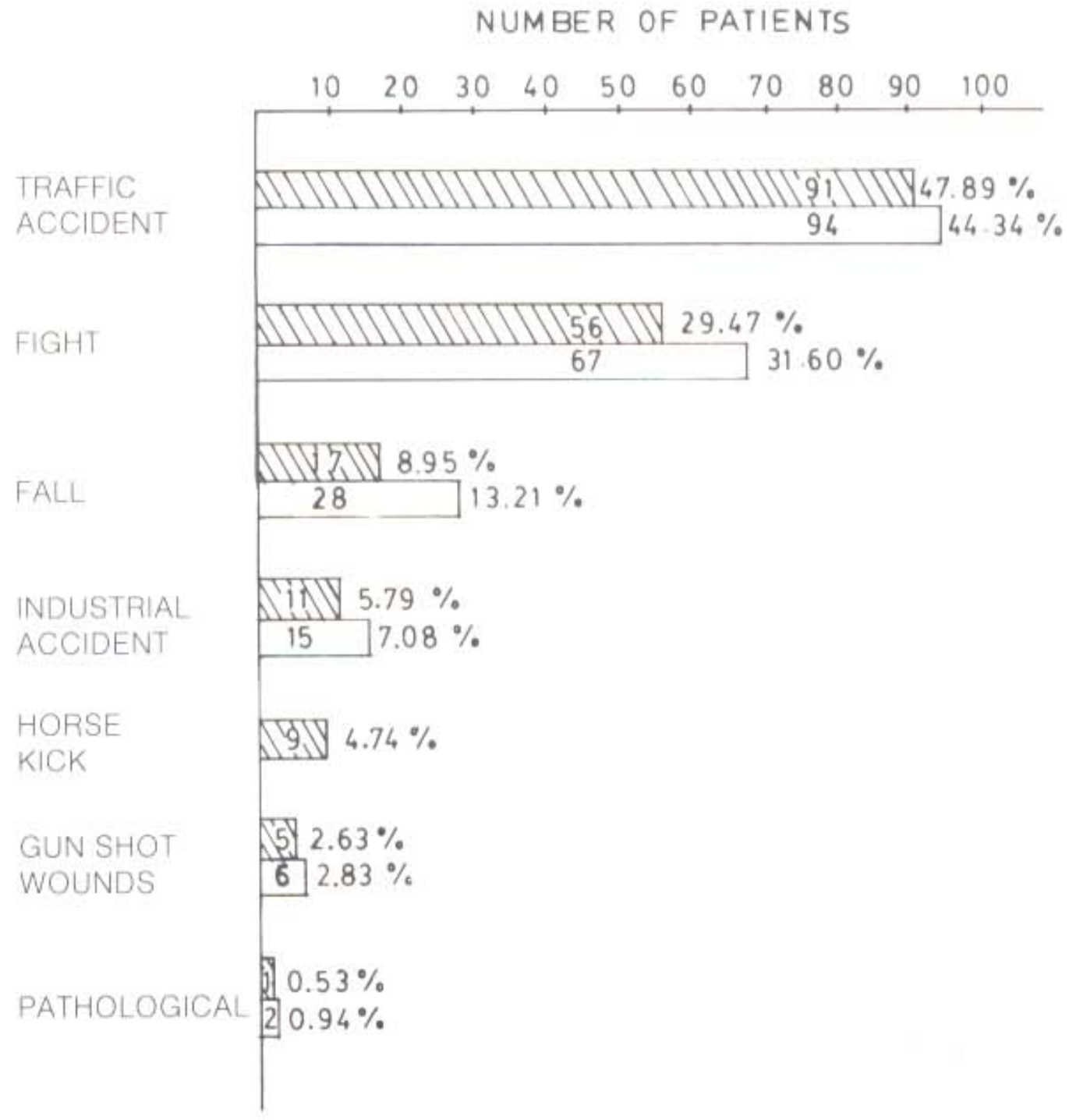

Fig. 3 Causes of injuries (E.A. = hatched, C.A. = white).

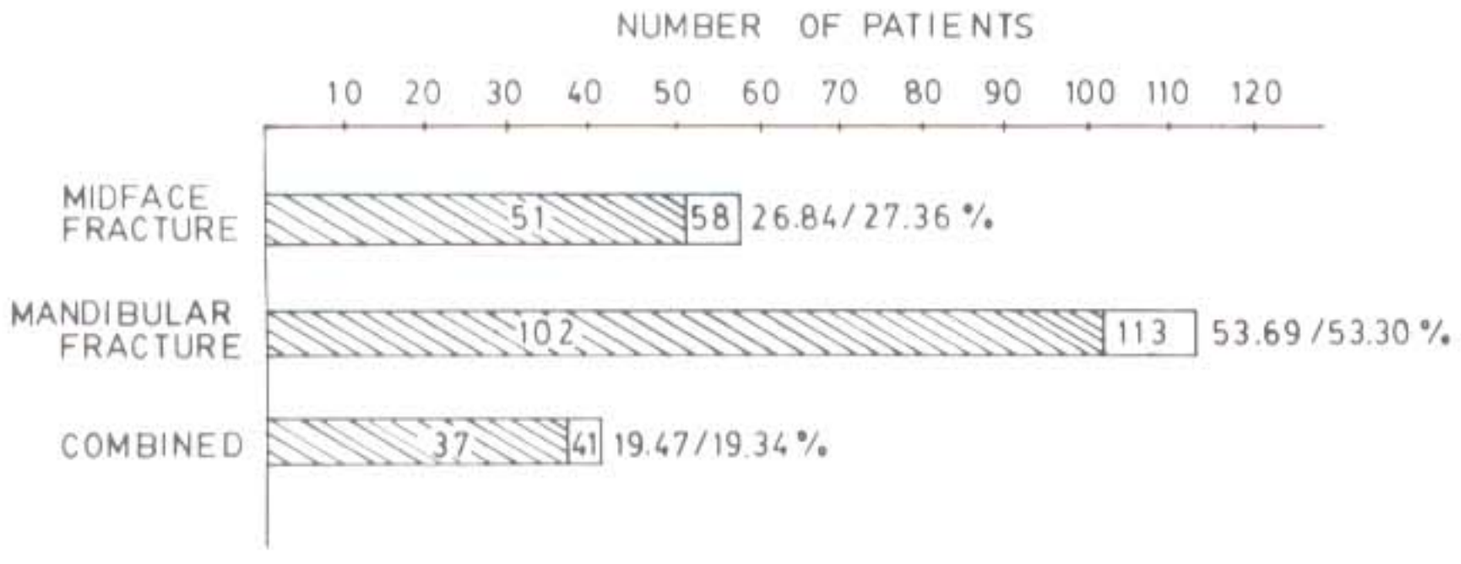

Fig. 4 Incidence of different types of fracture (E.A. = hatched, C.A. = white).

Table 3 Treatments used

Treatment	Number of patients (E.A.)	%	Number of patients (C.A.)	%
Acrylic splint	80	42.11	14	6.60
Arch bar fixation	69	36.32	140	66.04
Trans-osseous wiring	3	1.58	7	3.30
Mini plates	4	2.10	-	
Prosthodontic fixation + extraoral bandage	3	1.58	12	5.66
Extraoral bandage only	2	1.05	1	0.47
Trans-osseous wiring + arch bar fixation	18	9.47	28	13.21
Acrylic splint + circum-mandibular wiring	5	2.63	8	3.77
Acrylic splint + circum-mandibular wiring + circum-zygomatic wiring	6	3.16	2	0.95
Total	190		212	

group, fractures of the Proc. alveolaris (24.14 %) were second in prevalence.

The majority of 190 E.A. patients were treated by intraoral self-curing-acrylic splints (42.11 %). In contrast, most of the C.A. patients were treated by only arch bar fixation (66.04 %; Table 3). Open reduction with trans-osseous wiring was used in only a small number of patients (Table 3). In the E.A. group, 4 out of the 5 displaced zygomatic arch fractures were replaced by the *Gillies* (1927) approach and an intraoral approach. One of the fractures was treated by the *Caldwell-Luc* approach. The patients with zygomatic fracture in the C.A. group were similarly treated by the same techniques, some cases involving the orbit through a lower lid incision. For stabilization in cases of delayed zygomatic arch fractures, following reduction, extraoral self-curing-acrylic bows were used for a period of 3 weeks (*Güven*, 1987).

Discussion and Conclusions

The aetiology, type and site of maxillofacial fractures vary depending on many factors. The geographic area, the socio-economic status of the population area will vary and affect the results of studies. However, most of the results of the many studies performed by different authors reveal that maxillofacial fractures are commonly caused by trauma such as traffic accidents, alleged assault, industrial and sporting accidents (*Blevins* and *Gores*, 1961; *Rowe* and *Killey*, 1968; *Adeyeke*, 1980; *Khalil* and *Shaladi*, 1981; *Abiose*, 1986). The results of the present study indicate that the most frequent cause of maxillofacial fractures is traffic accidents. Fights and assaults are found to be the next most common cause (Fig. 3). It is interesting to note that these results are not much higher than the results of the study on the same community reported by *Borçbakan* et al. (1978).

The results of our study show a high male : female ratio. This extreme disparity in incidence was found to be unique when compared with the results of *Abiose* (1986), *Nair* and *Paul* (1986) and *Taher* (1986).

In our study, the peak incidence was found in the 21–30-year age group of the E.A. community, while it was highest in the 31–40-year age group of the C.A. community (Fig. 2). Our findings confirm the other studies which indicate that young people suffer more trauma (*Borçbakan* et al., 1978; *Nair* and *Paul*, 1986; *Taher*, 1986).

The percentage of paediatric fractures was higher when compared with the study of *Ellis* et al. (1985), *Abiose* (1986), *Nair* and *Paul* (1986) and *Taher* (1986).

Previous studies have reported that mandibular fractures are common facial injuries treated by maxillofacial surgeons and that they occur twice as frequently as midfacial fractures (*Adeyeke*, 1980; *Khalil* and *Shaladi*, 1981). The results of the study of *Kelly* and *Harrigan* (1975), and *Adeyeke* (1980) confirm our findings. Mandibular body fractures are the most common fractures seen in our study. This observation is also in agreement with the studies by *Ellis* et al. (1985), *Abiose* (1986), *Nair* and *Paul* (1986). The majority of the fractures in the middle third of the face were situated at the LeFort I level (Fig. 4). *Abiose* (1986) found a similar distribution in his study.

The treatment of maxillofacial fractures varies from surgeon to surgeon. However, treatment should be related more to the type of injury than to the desire of an individual surgeon to practice a particular technique. In our study most of the patients had no surgical intervention. Simple techniques of reduction and fixation were preferred.

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