Journal of Health and Medical Sciences

Bellaouchi, Ahlam, Amrani, Yasmine El, Ayoubi, Fahd El, Ghailan, Rachid, Eabdenbitsen, Adil, Oulali, Noureddine, Bouziane, Mohamed, and Daoudi, Abdelkrim. (2019), Epidemiological Profile of Facial Fractures at the Department of ENT and Maxillofacial Surgery at the Mohammed VI University Hospital Oujda Morocco. In: *Journal of Health and Medical Sciences*, Vol.2, No.4, 532-536.

ISSN 2622-7258

DOI: 10.31014/aior.1994.02.04.82

The online version of this article can be found at:
https://www.asianinstituteofresearch.org/

Published by:
The Asian Institute of Research

The Asian Institute of Research *Journal of Health and Medical Sciences* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of Medicine and Public Health, including medicine, surgery, ophthalmology, gynecology and obstetrics, psychiatry, anesthesia, pediatrics, orthopedics, microbiology, pathology and laboratory medicine, medical education, research methodology, forensic medicine, medical ethics, community medicine, public health, community health, behavioral health, health policy, health service, health education, health economics, medical ethics, health protection, environmental health, and equity in health. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Journal of Health and Medical Sciences* aims to facilitate scholarly work on recent theoretical and practical aspects of Health and Medical Sciences.

Asian Institute of Research
Connecting Scholars Worldwide

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Journal of Health and Medical Sciences
Vol.2, No.4, 2019: 532-536
ISSN 2622-7258

DOI: 10.31014/aior.1994.02.04.82

Epidemiological Profile of Facial Fractures at the Department of ENT and Maxillofacial Surgery at the Mohammed VI University Hospital Oujda Morocco

Ahlam Bellaouchi[1], Yasmine El Amrani[1], Fahd El Ayoubi[1], Rachid Ghailan[1], Adil Eabdenbitsen[1,2], Noureddine Oulali[2], Mohamed Bouziane[2] Abdelkrim Daoudi[2]

[1] Department of ENT and Maxillofacial Surgery, University Hospital of Mohammed VI, Oujda, Morocco
[2] Department of Anatomy, Oujda Medical School, Oujda, Morocco

Correspondence: Adil Eabdenbitsen, Department of Anatomy, Oujda Medical School, Oujda, Morocco.

Abstract
Maxillofacial trauma is defined by the structures located between the capillary line upward and the tip of the chin downward. Our study is retrospective, covering 112 cases of extensive facial fractures over a period of two years from October 2016 to October 2018. Soft tissue lesions are excluded from our study. The goal is to define the epidemiological profile of facial fracture victims in Oujda and to adapt therapeutic modalities to local contexts. The incidence was highest in the 21 to 30 age group (36.6%). There were 7.6 men for a woman. The most common etiologies were in descending order; traffic accidents (60%), assaults (29%), sports accidents (6%). The frequency of these traumas increased in summer, especially in July-August. Mandible and nasal bone were the most affected (48.21% and 21.42%). In 16.96% of cases, it was a polytrauma. Head trauma was associated in 7.14% of cases.

Keywords: Facial Trauma, Maxillofacial Fractures, Epidemiology

Introduction

Maxillofacial trauma represents a big part of the activity at the ENT and maxillofacial surgery department of Mohammed VI University Hospital. Therefore, specific preventive measures and treatment regimens adapted to the national epidemiological particularities are essential for the management of facial fractures. There has been no previous epidemiological study on facial fractures in Oujda. The purpose of this study was to describe the epidemiological characteristics of maxillofacial fractures our town.

Material & methods

This is a retrospective epidemiological study over a two year period from October 2016 to October 2018, for which we have treated all the files of patients with maxillofacial trauma. 112 cases were recorded of patients

treated at our department. A sheet was prepared for each patient and the following information was recorded: sex, age, date of trauma, etiology, fracture site and clinical aspects.

Results

The average age of our patients was 29 years old. The sex ratio was 6.7 / 1 with male predominance in all age groups (figure 1). The peak frequency of fractures was between 20 and 30 years old in both sexes. August and July are in order of frequency the busiest in terms of maxillofacial trauma, with respectively: 18 and 15 patients (figure2)

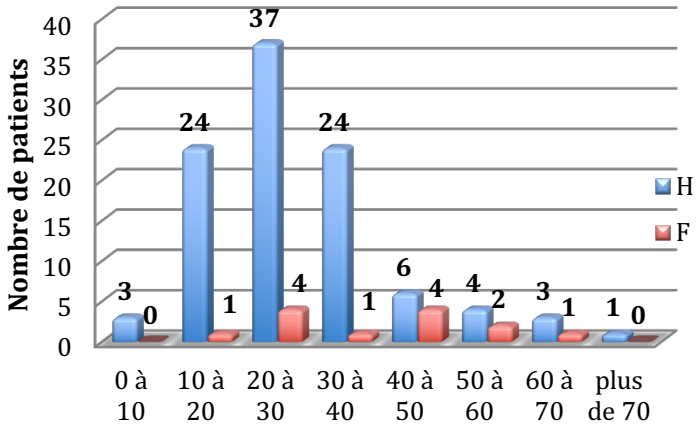

Figure 1. Age according to gender

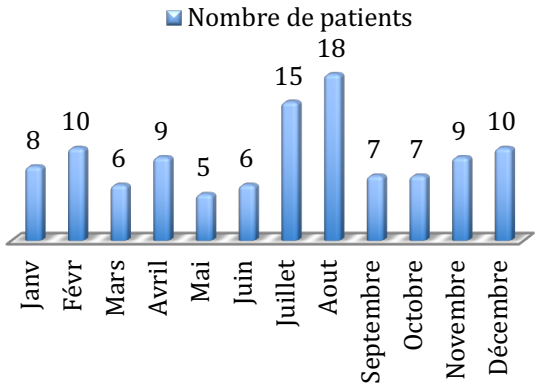

Figure 2. Monthly distribution

The etiologies of facial fractures in our study are represented by traffic accidents with 60% of cases, assaults totaling 29%, the remaining 11% of cases include sports accidents, work accidents, home accidents and other various etiologies. 57% of traffic accidents involved a two-wheeled vehicle (motorized or not) (figure3).

Traffic accidents were the leading cause of fractures in age groups above 10 years old, while between ages one and ten, home accidents were the most common (figure 4).

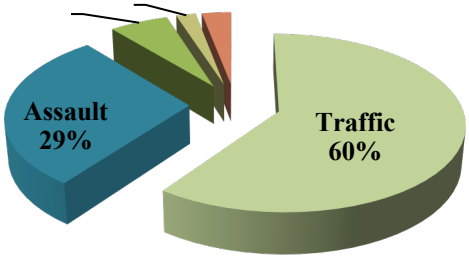

Figure 3. Etiology percentages

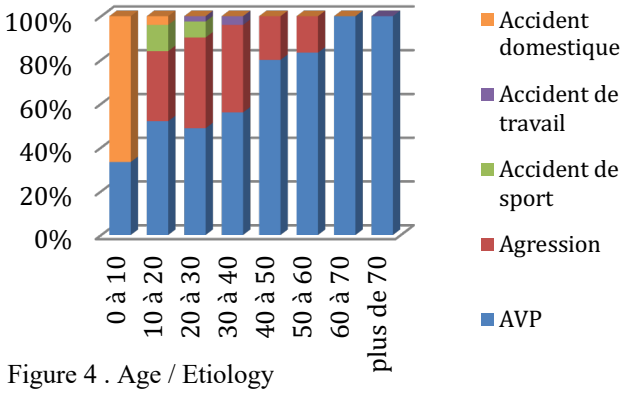

Figure 4 . Age / Etiology

Pain and ecchymosis/edema were the main complaints (figure 5). Fractures were associated with facial wounds in 39% of cases, divided according to facial areas in the figure (figure 6).

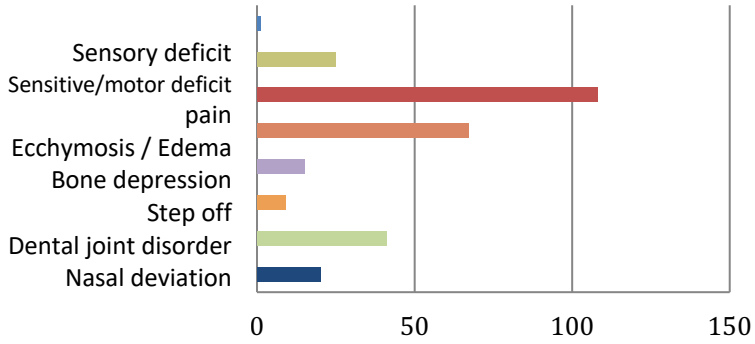

Figure 5. Clinical sings

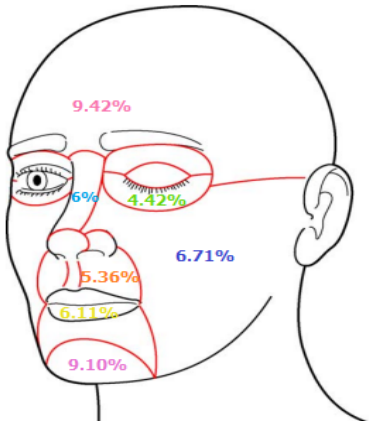

Figure 6. Facial wounds

Associated lesions were essentially skull trauma with 7.14% of fractures and lower limbs 5.35% (Table 1). Fifty-four patients (48.21%) suffered mandibular fractures. In 54.6% of cases, the lesion affected the middle third of the face and in 2.67% the upper third (Table 2). The dominant mandibular fractures are angular fractures at 42.3% (figure 7). The angular and parasymphyseal fractures are the most common association (table 3). The dominant etiology for mandibular fractures is (figure8).

Table 1 : Associated lesions

	Number of patients	%
Skull	8	7.14%
Spine	1	0.89%
Upper limbs	5	4.64%
Lower limbs	6	5.35%
Thorax	4	3.57%
Abdomen	3	2.67%
Pelvis	2	1.78%

Table 2 . Site of fracture

Site of fracture	Number of patients	Percentage %
Lower third	**54**	**48.21%**
Mandibular fracture	54	48.21%
Middle third	**61**	**54.46%**
Fracture of maxilla	12	10.71%
Zygomatic fracture	21	18.75%
Nasal bone fracture	24	21.42%
Orbital fracture	18	16.07%
Upper third	**3**	**2.67%**
Frontal fracture	3	2.67%

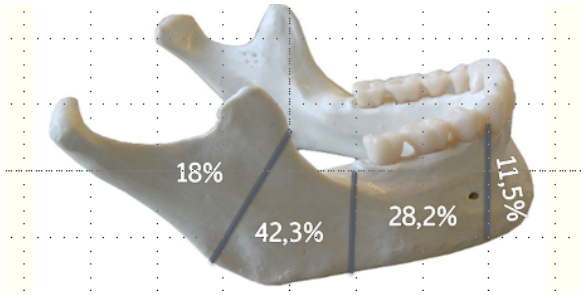

Fig 7 : distribution of mandibular fractures

Table 3. Bifocal mandibular fractures

	Number	Percentage
Angular + Parasymphyseal	10	41.67%
Angular + condylar	5	20.83%
Angular + symphyseal	3	12.50%
Condyar + parasymphyseal	5	20.83%
Condylar + Parasymphyseal	1	4.17%

Discussion

The epidemiological profile of maxillofacial trauma in the region of Oujda is that of a Muslim country heading towards westernization. The significant amount of traffic accidents makes it necessary to undertake a serious public health reflection and a political effort aiming to its prevention. The trauma's epidemiological profile varies according to demographics, cultural habits, industrial environment, transports, political climate, country's legislation (especially concerning road safety ever since Morocco adopted the new Highway Code) and hospital recruitment. The population of our study is very much representative of the general Moroccan people, due to the largely rural and urban recruitment in our department.

Facial fractures affect mainly the young male (30 years old on average). This is explained by risky behaviors during sports practice, motorcycling, driving and violent altercations [Gassner et al. .2001]. In Japan [Iida et al., .2001][Iida et al. 2002], the dominant age group is between the ages of ten and twenty. While in Tunisia, the dominant age group was similar to our study (20 to 30 years old). As for sex ratio, it largely varies in the literature. Our sex ratio (6,7/1), is at the upper limit with a female minority. Polish, Marrakchi and Tunisian series come close behind [Bouguila et al. 2008] [Qachab et al. 2011]. On the other hand, the sex ratio in Italy approaches equality (1.81/1) [Bonavolonta et al. .2017]. Summer holidays encourage people to do more activities and road trips. This makes it the busiest period in most studies.

The etiologies of facial trauma are completely correlated to the geographic and socioeconomic context of the country. In countries like Morocco [Qachab et al. .2011], Italy[Bonavolonta et al. .2017], Tunisia and Brazil, Traffic accidents are the main cause of facial trauma [Brasileiro et al. 2006][Bouguila et al. 2008]. In the meantime, countries with an old population prone to home accidents and very disciplined drivers like Canada [Al Dajani et al. 2015] have home accidents as the first cause of facial fractures. In other regions like the French Alps, ski accidents are the main cause [LeBeau et al. 2006].

It is almost unanimous in the literature that the mandibular fracture is by far the most common facial fracture [Brasileiro et al. 2006][Bouguila et al. 2008][Parluska et al. 2006]. It is the first facial bone to hit the ground is case of a fall. The most common forms of bifocal mandibular fractures according to [Gola et al. 1994], are the parasymphyseal fractures associated with contralateral angular or contralateral condylar fractures. These results are consistent with the results of our series.

Conclusion

Facial fractures are more and more frequent. Better knowledge of their epidemiology has several implications: setting therapeutic priorities, research on preventive measures, legal, medical and social assessment and of bodily injury.

References

Brasileiro BF, Passeri LA. Epidemiological analysis of maxillofacial fractures in Brazil: a 5-year prospective study. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006;102:28–34.

Gassner R, Tuli T, Hachl O, Rudisch A, Ulmer H. Craniomaxillofacial trauma: a 10-year review of 9543 cases with 21 067 injuries. J Craniomaxillofac Surg 2003;31:51–61.

Iida S, Kogo M, Sugiura T, Mima T, Matsuya T. Retrospective analysis of 1502 patients with facial fractures. Int J Oral Maxillofac Surg 2001;30:286–90

Iida S, Matsuya T. Paediatric maxillofacial fractures: their aetiological characters and fracture patterns. J Craniomaxillofac Surg 2002;30:237–41.

Qachab S. Mansouri N. Profil épidémiologique de la traumatologie maxillofaciale à Marrakech. Etude rétrospective sur une année à propos de 312 cas. 2011 thèse n°132.

Bouguila J, Zairi I, Khonsari RH, Jablaoui Y, Hellali M, Adouani A. Epidémiologie de la traumatologie maxillofaciale à Tunis. Rev Stomatol Chir Maxillofac 2008;109:353-7.

Bonavolontà, P., Dell'aversana Orabona, G., Abbate, V., Vaira, L. A., Lo Faro, C., Petrocelli, M., … Califano, L. (2017). The epidemiological analysis of maxillofacial fractures in Italy: The experience of a single tertiary center with 1720 patients. Journal of Cranio-Maxillofacial Surgery, 45(8), 1319–1326.

Al-Dajani, M., Quiñonez, C., Macpherson, A. K., Clokie, C., & Azarpazhooh, A. (2015) Epidemiology of Maxillofacial Injuries in Ontario, Canada. Journal of Oral and Maxillofacial Surgery, 73(4), 693.e1–693.e9. doi:10.1016/j.joms.2014.12.001

Brasileiro, B. F., & Passeri, L. A. (2006). Epidemiological analysis of maxillofacial fractures in Brazil: A 5-year prospective study. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 102(1), 28–34. doi:10.1016/j.tripleo.2005.07.023

Lebeau J, Kanku V, Duroure F, Morand B, Sadek H, Raphae¨l B.Traumatismes faciaux au CHU de Grenoble : étude épidémiologique de 961 dossiers sur une période de 365 jours. Rev Stomatol Chir Maxillofac 2006;107:23–9.

Parulska, O., Dobrzyński, M., Bazan, J., & Całkosiński, I. (2017). Epidemiological assessment of maxillofacial fractures in the inhabitants of Lower Silesia, Poland in 2002–2006 – Pattern of maxillofacial fracture. Polish Annals of Medicine, 24(2), 158–165.

Gola R, Cheynet F. Fractures de la mandibule. Encycl Méd Chir, Stomatologie 1994;22:14.