

Maxillofacial Trauma at LOMÉ (TOGO): About 501 Cases

Haréfétégúéna Bissa*, Essobozou Plaodèzina Pegbessou, Saliou Adam, Winga Foma, Tagba Essolam, Essobizou Amana, Bathokédéou Amana, Eyawèlhon Kpemissi

ENT and Cervicofacial and Maxillofacial Surgery Unit, Sylvanus Olympio Teaching Hospital of Lomé, Lomé, Togo
Email: *christophebissa@hotmail.fr

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Abstract

Objective: We conducted a retrospective study to determine the epidemiological profile and describe the diagnostic aspects of maxillofacial trauma. **Methods:** It was a retrospective descriptive study over 20 years (January 1995-December 2014) in Oral and Maxillofacial Surgery Department of the Sylvanus Olympio Teaching Hospital in Lomé. All the hospitalized patients for facial trauma were included. **Results:** 501 cases of facial trauma were retained with an annual incidence of 25 cases. The average age was 33 years and the most represented age groups are those of 20 to 29 years (35.53%) and 30 to 39 years (30.14%); and the sex ratio was 9. Traffic roads accidents represented the main circumstance (89.81%) and the motorcycle was the most involved (80.34%). Patients were admitted in the first week (75.65%) with 35.93% on the first day. The maxillofacial CT-Scan was the most requested radiological examination (33.75%). Bone lesions were: mandible (31%), zygomatic (23.26%) and maxillary (18.99%). Dental lesions were found in 68 cases. Extra-facial lesions were found in 44 cases. The patients were treated in the first week (62.48%) and in the first day after admission (20.76%). **Conclusions:** Maxillofacial trauma is increasing, mainly in young adults due to road traffic accidents.

Keywords

Maxillofacial Trauma, Fractures, Clinical Study, Lomé

1. Introduction

The maxillofacial region is highly exposed during trauma. The first cause of these traumas is road traffic accidents, responsible for one death every 30 sec, one million deaths and nearly 25 million injuries worldwide each year [1]. In

addition, there has been an increase in these traumas due to the increase in road traffic (motorways, number of vehicles and motorbikes increasing, road safety standards not respected) and other causes described in particular in certain regions (sports, aggressions, wars, ...) [2]. According to the report on the state of world road safety in 2013, the mortality rate attributable to road traffic accidents was highest in Africa; it was at 24.1 per 100,000 inhabitants. Maxillofacial trauma mainly affects the young man. In Togo, considering the extreme youth of the population with 60% under 25 years and 54% of potential labor force (15 - 64 years) [3], given the scarcity of studies on the issue, it appeared to us appropriate to carry out this study in order to describe the epidemiological and diagnostic aspects of facial trauma.

2. Methods

All the patients hospitalized for facial trauma in the Department of Oral and Maxillofacial Surgery at the Sylvanus Olympio Teaching Hospital from January 1995 to December 2014 (period of 20 years) were included in this study. The database that was created included medical history, symptoms, clinical signs, and radiological findings on facial bone fractures, dentoalveolar trauma, and soft tissue lesions. The following parameters were analysed: type and frequency of injury, age and gender distribution, monthly and yearly distribution, circumstances and cause of accidents, and concomitant injuries. The data was entered into an electronic database (Excel, Microsoft, 2010).

The Sylvanus Olympio Teaching Hospital is a Tertiary Center hospital in Togo, with a capacity of nearly 1300 beds and located in Lomé the capital. Togo, a country of 6,200,000 inhabitants, is located on the west coast of Africa. Life expectancy at birth is 57.5 years.

3. Results

3.1. Epidemiological Aspects

During the 20-years period, 604 cases of facial trauma were recorded but 501 cases (82, 95%) were retained for this study. Six (6) patients were hospitalized in 1995 and 74 cases in 2013 and 2014. The **Figure 1** shows the yearly-distribution. The high frequency was observed in August, 52 cases in all years combined. The 501 patients were divided into 450 men (89.82%) and 51 women (10.18%). The average age was 33.70 years with extremes of 2 years and 80 years. The 20 - 29 and 30 - 39 age groups were the most represented with 35.53% and 30.14%. The **Figure 2** shows the distribution of patients by age and sex. The distribution in the socio-professional category shows 29.97% of workers and 16.34% of military. One hundred and eighty patients (35.93%) were admitted within 24 hours after the trauma, 199 (39.72%) between day 1 and day 7 and three patients (0.60%) more than one year after trauma.

Public road accidents accounted for 89.81% of cases followed by attacks or fights with 6.79%. There were 9 cases of facial trauma per gun. Motorbikes were

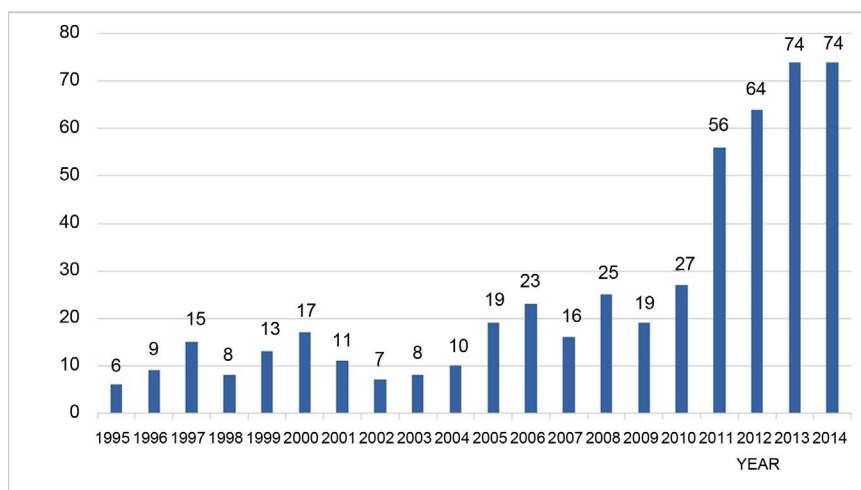


Figure 1. Distribution per year.

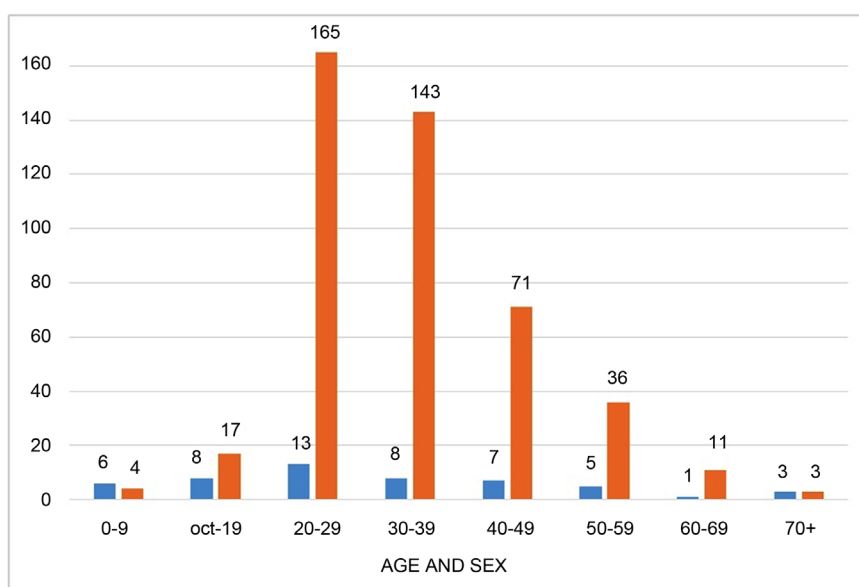


Figure 2. Distribution per age and sex.

involved in these accidents in 64.56% of the cases (**Table 1**).

3.2. Diagnostic Aspects

All the facial injuries are illustrated in **Table 2**. Soft tissue lesions (isolated or associated) were found in 482 cases (96.21%) and predominated in the oral and nasal (32.45%), chin (17.2%) and jugal (12.34%) regions.

The diagnostic methods were essentially the standard radiographs of head, face and dental until 2010, then CT-scan with an average of 48 per year from this year. Bone lesions were present in 440 patients (87.82%), with a total of 632 fractures. Four hundred fractures (63.30%) were on the midface and 196 (31.01%) at mandible. The mandibular fractures were 43% simple and 30.5% complex (more than 3 lines). These fractures were at symphyseal and

Table 1. Distribution by professional category.

	Effective	Percentage (%)
Traders	22	8.56
Motorbike drivers	25	9.73
Farmers/Breeders	14	5.45
Students	28	10.89
Teachers	10	3.89
Officials	24	9.34
Military	34	13.23
Health officers	12	4.67
Household	6	2.33
Workers/Artisans	77	29.96
Religious	2	0.78
Athletic	3	1.17
Total	257	100.00

Table 2. Distribution according to injuries observed.

	Effective	Percentage (%)
Soft tissues only	46	9.18
Bones only	17	3.39
Soft tissues and bones	368	73.46
Soft tissues + bones + alveolodental trauma	55	10.98
Soft tissues + alveolodental trauma	13	2.59
Temporomandibular joint trauma	2	0.40
Total	501	100

parasymphysal (38.77%) at the body (20.41%). One hundred and forty-seven (23.26%) fractures were zygomatic dominated by the Zingg type B (29.25%). **Table 3** shows the distribution of fracture by seat.

Dental lesions found in 68 cases, included 51.47% of dental dislocations. Extra-facial lesions were found in 44 cases: upper-body in 22 cases (50%), intracranial in 10 cases (22.73%), lower-body in 7 cases (15.91%), spinal in 3 cases (6.82%) and chest in 2 cases (4.54%). The patients were treated in the first week (62.48%) and in the first day after admission (20.76%). Two patients were treated more than 3 months after hospitalization.

4. Discussion

Our study is a 20 years-period, we describe the details of admitted patients in the only one Oral and Maxillofacial Department in Togo. It was not possible to include those with facial trauma, who were treated at Dental/General Surgery

Table 3. Distribution by fracture seat.

		Effective	Percentage (%)
Lower floor	Mandible	196	31.01
	Facial disjunctions	43	6.80
	Zygomatic bone	147	23.26
Midface	Nasal bones	36	5.70
	Maxillary	120	18.99
	Orbital frame	54	8.54
Upper Floor	Frontal bone	36	5.70
Total		632	100

Unit. The data were reliable because we have a strict record that is retrospectively examined. The fact that the study is carried out in a single center constitutes a limit.

In Lomé, the overall rate of facial trauma is 10.29% with an incidence of 30.2 cases per year. This frequency, is much lower than that found in France (28.1%) [4] and Benin (30%) [5] but it reflects the increasing in the facial trauma in Lomé comparing with the study of Boko (6.82%) [6]. Maxillofacial trauma mainly affected the young man (30 years on average) as shown in this study: 65.67% between 20 and 39. This confirms reports that young men are prone to risk-taking behaviour, resulting in a relatively high incidence of incidents in this group. But in Japan, a high incidence between 10 to 20 years has been reported. Facial traumas are more common in men than women; our study sex ratio = 9/1, responding to the data of others studies (sex ratio between 2/1 and 12/1) [7]. In developed countries, women are more socially present and the sex ratio can reach 2/1 [8] [9].

In Lomé, facial trauma is mainly due to traffic accidents (89.81%) predominant on bicycles (64.56%). In the developed countries these were automobile accidents, while in our study, as in some countries in Africa and Asia, bicycles were involved. This result is not surprising since road traffic growing disproportionately with road infrastructure is dominated by bicycles. Although the literature reports the high incidence of traffic accidents, interpersonal violence has been reported by Olsanya as the most common [10].

The mandible was the predominant location of the fractures followed by the zygomatic bone and the maxilla. The mandible has been documented to be the most common bone fractured in the maxillofacial complex following trauma [9] [11]-[17]. The symphyseal and parasymphyseal were the most affected mandibular regions in our study; this result contrasts with that of other authors: Bolaji [18] in the United States the angle was the main seat with 36.32% of the mandibular fractures; the condylar region predominated with 28% in the according to Rocton [19] in France. It's known that the resistance of bone is less strong at angles and condylar neck [11] [12] [13] [14] [19] [20]. We can explain these dif-

ferences by the mode of occurrence, the mechanism and the violence of the shock that caused these fractures.

In another light, the zygomatic complex has usually been documented to be the commonest site of midfacial fracture [7] [10] [21]. This was followed by the Le Fort II fracture. However, some other authors have documented nasal complex fracture as the commonest midfacial fracture followed by zygomatic complex fracture [7] [10] [11] [12] [13] [21]. This difference may be attributable to the fact that plain radiograph, which is the most common mode of imaging in our environment may not readily detect nasal complex fractures [10] [22].

If the time taken to manage patients in our study is sometimes very long, it is short in European series: 30 hours according to Blan [23] and 24 hours after according to Lebeau [4]. The long waiting period in this series could be explained by the realization of the preoperative balances and the financial difficulties in our circles. This exposes the patients to vicious consolidations, infectious complications and disabling functional.

5. Conclusion

The maxillofacial trauma incidence is increasing in Togo. Most of them occur as a result of road traffic accidents, affecting the young adult male worker of the 2nd and 3rd decades and involving bicycles. Skeletal lesions predominate in the mandible and are often associated with lesions of the soft tissues.

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Ethical Approval

Authors obtained the approval of the ethics committee of the center for the conduct of this study.

Conflict of Interest

Authors declare that there is no any conflict of interest.

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