

Epidemiological pattern and etiology of Oral and Maxillofacial Trauma: A Retrospective Study among Patients from a Portuguese Central Hospital

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Introduction

The human being as a whole encompasses four fundamental aspects: function, organism, psychological facet, and social interaction. Whenever one of these aspects is affected, bodily harm occurs. There are several types of trauma, where the most common are those caused by physical injuries, constituting one of the major health concerns worldwide [1-22]. Their causes differ from country to country [3,4,6,12,23-46], with the main causes being traffic accidents, falls and assault.

Therefore, the present study aims to evaluate in the form of an observational retrospective clinical study, the etiology and types of oral and maxillofacial injuries in Portugal.

Methods

An observational retrospective study was conducted in the Stomatology Service at the “Centro Hospitalar Lisboa Norte” (CHLN), covering the period from 2018 to 2020. The target population were patients aged 21 years or over, who presented oral and maxillofacial injuries. The charts of all patients were reviewed, and the data was compiled using Excel. Subsequently, data were transferred and analyzed using the Statistical Package for the Social Sciences (SPSS), version 27.

Results

384 patients were included in this study, 49.48% females and 50.52% males. The year 2018 had 188 patients with trauma, 2019 with 175 and 2020 with 81 (Table 1). The most frequent cause of maxillofacial injuries was falls, which accounted for 44.3% (170 patients), followed by assault (24.7%, 95 patients) (Figure 1). Falls are more frequent in women (60.4%), whereas men suffered more from assault (33.5%). There is also an association between the etiology and age (p -value < 0.001 ; contingency coefficient = 0.526), the younger individuals present more assaults, while with increasing age there are more falls.

Of the 384 patients, 314 have soft tissues injuries, 57 present bone fractures, 192 have periodontal injuries, 176 with dental injuries and only 5 have neurological ones. The bone fractures are frequent in the mandibular region (20 patients) and Figure 2 shows the bone fracture distribution. Uncomplicated crown fractures were the main type of dental injuries in the upper incisors.

Regarding the type of treatment performed was surgical in 218 patients, dental in 79, conservative in 210 and pharmacological in 278 patients. The most frequent pharmacological treatment was prescription of painkillers.

Table 2 – Sex distribution according to decades of age and year

| Year/Age | 21-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-93 | Total |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|------------|
| 2018 | 35 | 26 | 19 | 13 | 20 | 8 | 6 | 1 | 128 |
| 2019 | 37 | 43 | 42 | 11 | 21 | 13 | 8 | 0 | 175 |
| 2020 | 27 | 16 | 17 | 6 | 9 | 4 | 2 | 0 | 81 |
| Total | 99 | 85 | 78 | 30 | 50 | 25 | 16 | 1 | 384 |

Keywords:

Oral and maxillofacial trauma;
Oral and maxillofacial injuries;
Retrospective Study.

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Conflict of interest:

The authors declare no conflict of interests

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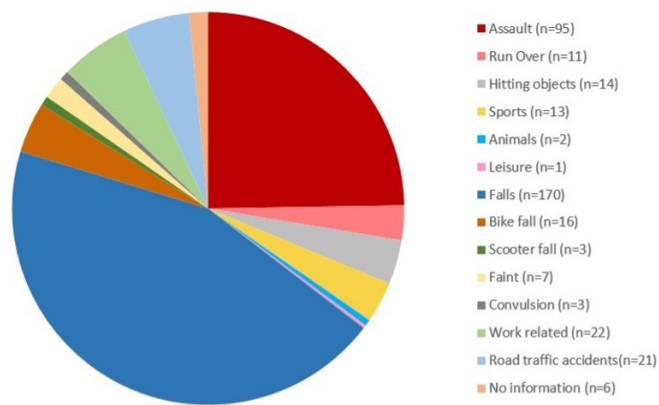


Figure 1 - Distribution of the etiology of trauma

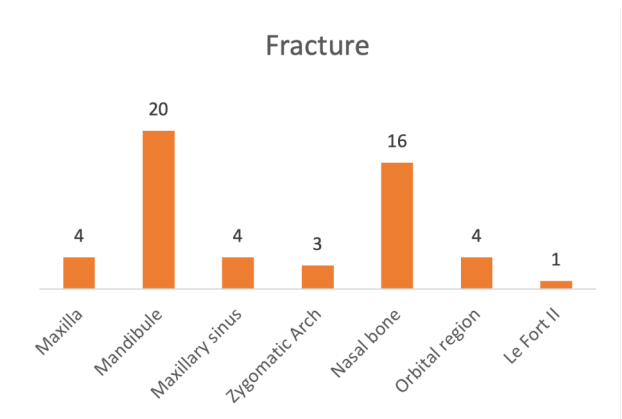


Figure 2 - Distribution of the fractures

Discussion

The year 2020 has a lower number of traumas, which is in agreement with the current pandemic situation [47,48,49] because people spend more time at home. Falls, that in the present study were considered as the most prevalent etiology are only described as such in the studies by Mahmoodi et al. [7], Brucoli et al. [50] and Toivari et al. [51]. The high probability of occurrence of these types of injury etiology in women, as well as with increasing age, is supported by some authors [50,52-54].

Most studies carried out in European countries show a trend in assault, which has become the main cause in recent years [16,23,30,48,49,55]. As mentioned in the systematic review by Barbosa et al. [56], road traffic accidents have been decreasing in Portugal since 1994, when road safety rules were implemented. Regarding the type of injuries, it is worth noting the lack of European studies that treat soft tissue and dental injuries, as most focus only on studying fractures and their treatments.

Most articles indicate the mandible as the main site of fractures [13,15,51,53,57-60], which is in agreement with our results. The difference between the occurrence of fractures in the mandible and nasal bone is minimal. The peculiar shape, location, mobility, presence of unerupted 3rd molars and lesser bone support compared to the maxilla are some of the factors that make the mandible susceptible to fracture. For the dental injuries, the upper central incisors are described as the most affected with fracture [61,62], being the uncomplicated crown fracture the most frequent [7].

As for the most performed type of treatment, pharmacological is the main, followed by surgical, conservative and finally dental. Some authors also mention that surgical treatments are more frequently performed than conservative ones [30,54]. This discrepancy may be related to cultural differences between the populations analyzed in each study, e.g. the fact that in Portugal the difference between sexes is not so pronounced. It should be noted that the sample under study does not translate statistical results extended to the Portuguese population, as it is a convenience sample, consisting of patients from the Centro Hospitalar Lisboa Norte. However, this is a Central Hospital from the capital of Portugal.

Conclusions

Falls were the most common cause of maxillofacial trauma, followed by assault.

Road traffic accidents have been decreasing over the years, probably due to strict road safety measures. Males and adults were more affected by assaults, while females and elderly people present a higher prevalence of falls.

The year 2020 shows an evident decrease in injuries compared to the remaining years due to the current pandemic situation. As for dental injuries, the upper incisors were frequently affected by uncomplicated crown fractures. The prescription of painkillers is the most used therapy, followed by surgical treatment.

Ethics committee and informed consent

Study performed was approved and realized in accordance with the ethical standards specified by the Health Ethics Committee of the Faculty of Dental Medicine, University of Lisbon, Lisbon, Portugal.

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