

EPIDEMIOLOGICAL AND CLINICAL FEATURES OF DENTAL TRAUMA IN ADULT VICTIMS OF HETEROAGRESSION

HORAȚIU DURA¹

¹“Lucian Blaga” University of Sibiu

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Abstract: The study investigates the epidemiological and clinical features of dental trauma regarding permanent dentition in patients - victims of physical aggression. We retrospectively reviewed 762 victims of heteroaggression who addressed the forensic service for facial and dental traumatic injury, during a 10-year follow-up. Demographic data (gender, age, residence) and clinical features (type of dental traumatic injury, type of the tooth affected) were taken into consideration. The incidence of traumatic dental injury is relatively constant, with a mean of 76 cases per year and no significant difference between the residents of urban or rural areas. Traumatic dental injury mostly affected young adults, mean age of the patients being 33.11 years. Men are over 4 times more likely to experience a dental trauma in violent context. Maxillary central incisors are 7 times more affected than other teeth of the superior arch and 10 times rarer than central incisors of the mandibular arch. The most common type of traumatic injury was tooth fracture (80%), followed by abnormal mobility (about one third of cases). Traumatic dental injuries represent a dental public health problem with long lasting complications or lifetime disabilities with important impairment on lifestyle and life quality.

INTRODUCTION

Dental trauma is both a health issue and a forensic one due to legal implications. The traumas of dento-maxillary apparatus in general and the dental ones in particular, along with other problems of modern dentistry (dental caries, inflammatory diseases of periodontium, dento-maxillary abnormalities) are of public interest in terms of their incidence. A systematic review of statistics published during a period of 12 years estimated that about one-third of preschool children, one quarter of school-age children and one-third of adults experienced at least one dental trauma throughout their lives.(1)

Chewing, eating, social and occupational problems due to an untreated dental trauma affects 20 times more an individual, compared to a healthy individual.(2,3) In addition, the treatment of these conditions is not always successful and could continue throughout life. The results of such an event are often dramatic for the person involved in terms of physical, mental and social impact. Dental evaluation identifies injuries to the hard dental tissue and injuries of the periodontal or supporting tissues of the tooth. The key point of the examination is represented by tissue injuries (lacerations, de-gloving), tooth or tooth missing parts, tooth mobility etc. The morpho-functional features of dento-alveolar lesions consist of rich vascularisation and innervation, as well as the presence of an important microbial flora in the oral cavity, conferring to traumatic lesions certain characteristics and repercussions on the physiological acts of mastication, swallowing, phonation and mimics.(4,5)

In conducting the study we started from the premise that dental traumas are important health issues both from society and individual point of view. From a society perspective, dental traumatic pathology is important due to the incidence, cost of care and subsequent legal implications. From an individual perspective, the consequences of such an event are often

dramatic due to the physical, psychological impact and the resulting social handicap.

AIM

The aim of the study is to investigate socio-demographic and clinical features of dental trauma issues in the activity of forensic department.

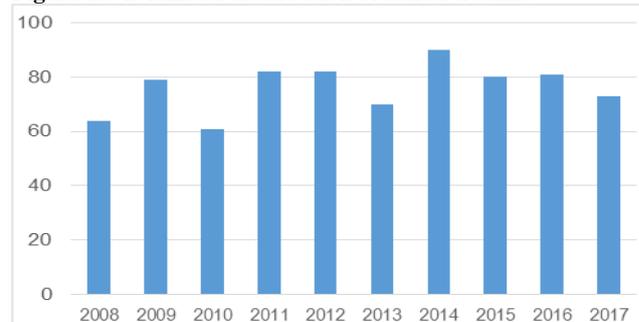
MATERIALS AND METHODS

We conducted a retrospective study on 762 forensic certificates for dental-oral trauma issued by Sibiu County Forensic Department between 2008 and 2017.

RESULTS

During the 10 years of the study, 13803 forensic certificates were issued, of which 762 (5.52%) were addressed to patients with dental traumatic injuries. There was a total of 1068 traumatized teeth.

Figure no. 1. Annual distribution of dental trauma

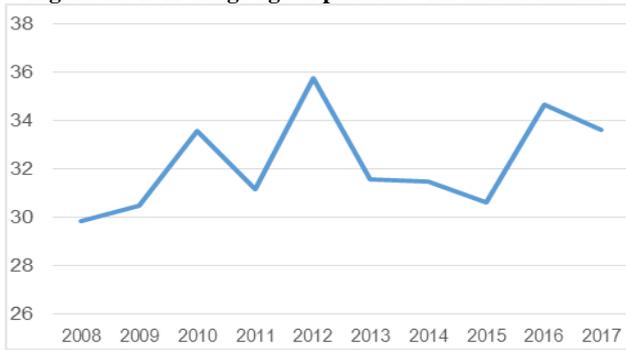


The mean age of patients who had dental traumatic injuries was 32.27 years, the age extremes being 5 and 79 years respectively.

¹Corresponding author: Horațiu Dura, Str. Lucian Blaga, Nr. 2A, Sibiu, România, E-mail: horatiudura@yahoo.com, Phone: +40269 436777
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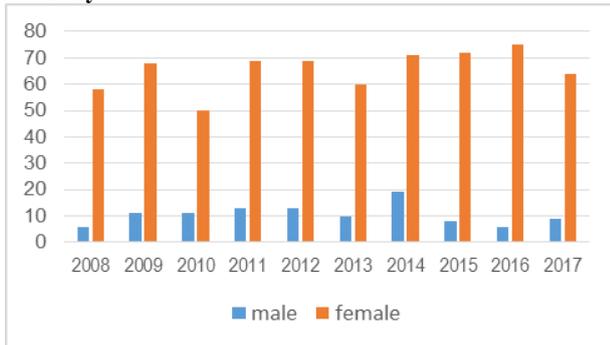
CLINICAL ASPECTS

Figure no. 2. Average age of patients with dental trauma



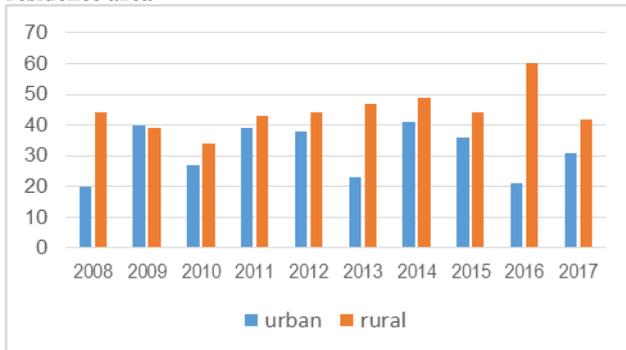
The proportion of male patients with dental traumatic injuries was more than 4 times higher than that of women (656 versus 106 cases).

Figure no. 3. Gender distribution of traumatic dental casuistry



In the study group, the incidence of traumatic dental injuries was 1.3 times higher among rural residents (446 versus 316 cases).

Figure no. 4. Distribution of dental traumatic pathology by residence area



The teeth in the front (upper and lower) area were approximately 7 times more frequently affected by mechanical trauma than lateral teeth (917 versus 144 cases). There is a significant difference in the risk of mechanical traumatic injury to the front teeth of the upper arch (88), from the lower arch (56 cases). The left upper central incisor followed by the upper right incisor (213, respectively 204 cases) was affected most frequently, and the least affected were: the lower right canine and the lower left canine (7 and 16 cases, respectively). In many subjects, dental trauma was diagnosed in both upper incisors, the incisal edge.

The most common dental trauma was dental fracture (616 cases), followed by abnormal tooth mobility (239 cases). The fewest types of dental trauma were crown infractions and luxations (1 and 3 cases respectively).

Figure no. 5. Topographic distribution of dental trauma in the upper dental arch

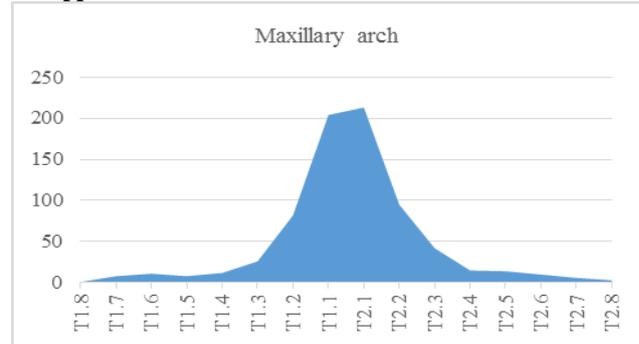


Figure no. 6. Topographic distribution of dental trauma in lower dental arch

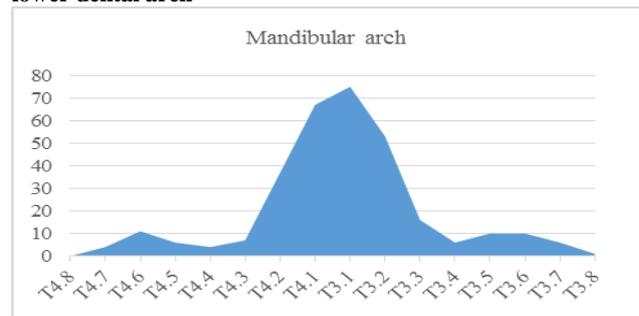
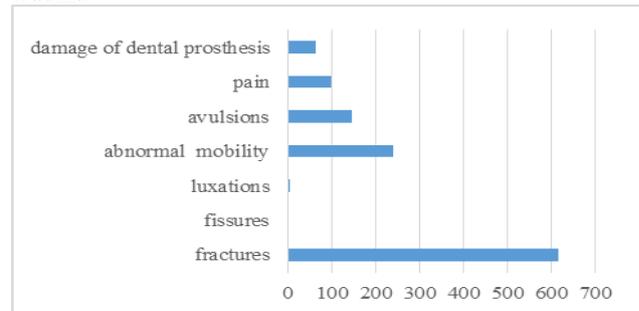


Figure no. 7. Distribution of casuistry by type of dental trauma



DISCUSSIONS

In a 10-year Spanish study, 545 patients were evaluated registering a total of 1438 traumatized teeth with an average of 2.39 ± 1.69 teeth affected per patient. There was a nearly 3-fold lower prevalence of the males (2.4:1). The data of the two studies are consistent with the topography of traumatic lesions. Significant differences from the literature appear with regard to the age of the patients. In both the Spanish and Swedish studies, most patients with dental trauma are under 20 years of age.(6,7)

From a forensic perspective, dento-alveolar lesions raise many forensic and legal issues. The critical analysis of literature reveals a great diversity of interpretations. If the approach of each tooth as an organ is considered to be overwhelmed in most of today's concepts, there are still discussions about the failure of a masticatory unit (three teeth, one of which is an antagonist). There are also divergences of opinions regarding the notions of disfigure and permanent physical disability with posttraumatic invalidity in case of phonation or permanent mastication disorders. Complex forensic issues are raised regarding the duration of the medical care of the traumas that occur on a pre-existing pathological field (periodontitis, caries, devitalizations, obturations). The appreciation of the traumatic origin of dental

CLINICAL ASPECTS

lesions of low intensity also raises problems, which can be a result of periodontitis at the level of the soft parts.(8-12)

The forensic examinations are interested in post-traumatic lesion coding capable of generating functional disorders, and the explanation of the disturbances is made only by defining and describing the lesions and not by using the general term of trauma, a term explaining how these injuries were produced.(11,12,13)

CONCLUSIONS

Traumatic dental injuries represent a public dental health issue with long lasting complications or lifetime disabilities with important impairment on lifestyle and life quality.

Dento-alveolar trauma secondary to fictitious violence is a constant pathology in dental and forensic services. The share of dental traumatic pathology with forensic implications is significant and relatively stable over time, accounting for approximately 6% of forensic work addressed to the living people.

In terms of socio-demographic characteristics, dental traumas mainly affect the male gender (86%), mostly the young adults (the mean age = 32 years), with a relatively equal share between urban and rural areas.

From a morphological and functional point of view, in most cases, dental traumas are polytraumas that concern several different anatomical elements. The type of trauma most commonly encountered is tooth fracture, suggestive of mechanical traumatic agent force.

Dento-alveolar lesions raise many forensic and legal issues mainly due to differences in views regarding the concept of tooth as an organ, as well as the notions of infirmity, disability and disfigure.

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