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Trauma to anterior teeth in a Nigerian tertiary health facility

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Abstract

Background: Trauma to anterior teeth is often neglected when not associated with pain, shocking sensation, discolouration and abscess.

Objective: To determine the distribution and pattern of presentation of trauma to anterior teeth using Ellis classification.

Methodology: A retrospective review of the hospital records of patients who attended and had oral clinical evaluation done in Preventive dentistry clinic of the Department of Preventive Dentistry, University of Nigeria Teaching Hospital, Enugu State, Nigeria from January 2014 to December 2015.

Results: A total of 59 patients were clinically evaluated, 25(42.4%) were males, 34(57.6%) were females giving a male to female ratio of 1:1.4 The age range of the patients was 17 to 68 years with a mean age of 29.5 ± 11.8 years. Maxillary central incisors were affected the most. $P=0.037$, $P\text{-value}=0.031$, $P\text{-value}=0.016$.

Conclusion: Effort needs to be applied to create better awareness on benefits of prompt and adequate treatment following trauma to anterior teeth.

Keywords: Anterior teeth, trauma, health facility

Introduction

Anterior teeth play a major role in biting, speech and aesthetics. Trauma to anterior teeth is often neglected when not associated with pain, shocking sensation, discolouration and abscess. Traumatic dental injuries are often due to collision with people or inanimate objects, road traffic accidents, sports, and violence [1]. These injuries if left untreated can cause, pain, psychological/ esthetics problem [2], pulpal necrosis, dental abscess and periapical pathosis, that could affect quality of life of affected individuals [3, 4]. Dental injuries commonly involve anterior teeth of the upper jaw [5]. Predisposing factors of dental trauma could be related to the person's anatomic features such as increased overjet, inadequate lip coverage of the upper anterior teeth etc [6-8]. In Nigeria, the high spate of violence, increased participation in sporting activities and road traffic crashes have contributed immensely to traumatic dental injuries (TDI), thus making it an important oral health problem [9]. The issue of delay in seeking proper dental treatment is a global health problem and scientific research had shown that many factors are responsible for delay in seeking early intervention on oral health-related problems [10-19]. Some of these factors include limited access to qualified dental personnel, heavy engagements at work, ignorance, stress associated with dental visits, transportation problems, dental anxiety, ignorance, and poverty, just to mention a few [10-19].

The complications of untreated trauma to anterior teeth, may include one or a combination of the following: pulp necrosis, pulp canal obliteration, tooth discolouration, apical periodontitis, ankylosis, resorption, dento-alveolar abscess, apical granuloma or cyst [20-23]. Traumatic injuries to teeth and their supporting structures vary in severity ranging from enamel microcracks, complicated crown fracture, root fracture to avulsions [9, 24]. The most frequent type of injury is uncomplicated crown fractures [9, 25-26]. Studies have reported traumatized teeth to be more prevalent among males [22, 24] single tooth involvement as the most predominant, [24, 27] and maxillary incisors as being the most commonly affected [24, 28]. The most frequently traumatized teeth are the maxillary central incisors [29-31]. Road traffic accident (RTA) was reported to be the commonest cause among adults in some studies [24, 32] Accidental damage to orodental tissues during endotracheal intubation and general anesthesia

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has also been reported among adults [33]. Late hospital presentation was reported as the usual practice, [28, 34-35] reported treatment given ranged from no active treatment, composite restorations to elaborate dental procedures such as root canal therapy or extraction of the affected teeth [22, 35].

Classification of diseases is the act or process of grouping diseases based on their similarities and code diagnoses, symptoms and procedures to facilitate communication among health care providers and researchers [36]. The classification of traumatic dental injuries [37] helps dental practitioners on: universal nomenclature, understanding severity of dental injuries, arriving at correct diagnosis and treatment as well as to predicting prognosis of traumatic dental injuries. Classification aids in planning the management of dental injuries and aids in describing traumatic dental injuries in epidemiological studies [36]. There are various studies and reports on trauma to anterior teeth in other parts of the country, Africa and the World. The aim of this study is to determine the distribution and pattern of presentation of trauma to anterior teeth using Ellis classification in order to contribute to the existing data on trauma to anterior teeth in Nigeria and the West African sub-region. It will also compare findings with published reports from Nigeria and other countries of the World.

Material and Methods

A retrospective review of the hospital records of patients who attended and had oral clinical evaluation done in Preventive dentistry clinic of the Department of Preventive Dentistry, University of Nigeria Teaching Hospital, Enugu State, Nigeria from January 2014 to December 2015 was done. University of Nigeria teaching hospital is a tertiary health facility serving many local government areas of Enugu State and neighbouring States. The demographic and clinical data, such as age, sex, diagnosis using Ellis classification and tooth/teeth affected were retrieved from the patients' records and analyzed using SPSS version 20. Medical records with incomplete data were excluded. Ethical clearance for this study was sought from Ethical Committee of University of Nigeria Teaching Hospital, (HREC, UNTH) Enugu, and obtained before commencement. Data were analysed using a computer software programme, Statistical Package for Social Sciences (SPSS) Version 20. P values < 0.05 were accepted

as being statistically significant.

Results

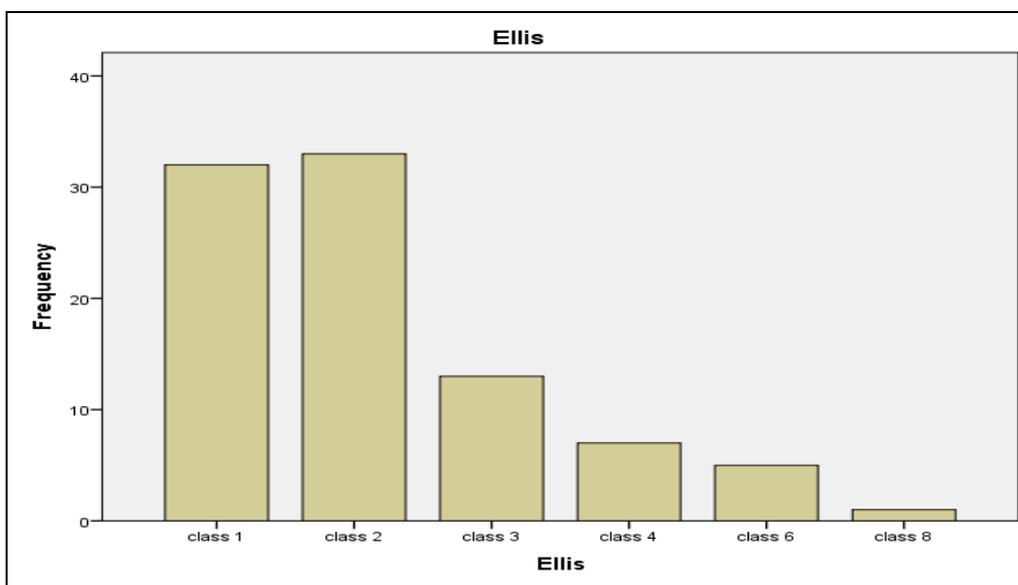
A total of 59 patients were clinically evaluated and Ellis classification of dental trauma was used in making the diagnosis , 25(42.4%) were males,34(57.6%) were females giving a male to female ratio of 1:1.4 The age range of the patients was 17 to 68 years with a mean age of 29.5 ± 11.8 years as shown in Table 1. Trauma to anterior teeth was seen more in the 20-29 years age group, this was followed by the 30-39 years age group as shown in Table 1. The total number of anterior teeth affected by trauma was 91 as shown in Table 2, maxillary teeth were more affected than mandibular teeth as shown in Table 2. The maxillary central incisors were affected the most. Traumatized anterior teeth were more on the right side of the dental arch. Patients presented more with Ellis class II followed by Ellis class I as shown in figure 1. P=0.037, P-value =0.031, P-value =0.016

Table 1: Socio-Demographic Characteristics Of Patients

Variable	Number	Percent
Gender		
Male	25	42.4
Female	34	57.6
Age group(yrs)		
10-19	7	11.9
20-29	31	52.5
30-39	12	20.3
40-49	4	6.8
50-59	3	5.1
60-69	2	3.4
	59	100
P-value = 0.037		

Table 2: Anterior teeth affected by trauma

Variable	Number	Percent
Central incisors	72	79.1
Lateral incisors	18	19.8
Canines	1	1.1
P-value = 0.016		
Maxillary teeth	74	81.3
Mandibular teeth	17	18.7
	91	100



P-value =0.031

Fig 1: Ellis classification seen among the affected teeth

Discussion

The mouth is the portal for life-sustaining water and food. It is also a primary mechanism for human communication [38]. Anterior teeth play a major role in biting, speech and aesthetics. In this study, trauma to anterior teeth was more in the 20-29 age group, this could be due to increased physical activity in the age group, the finding was in agreement with previous studies [9, 39]. The correlation between age and traumatized anterior teeth was statistically significant. P-value = 0.037. Maxillary teeth were affected more than mandibular teeth, and was similar to previous reports [23, 40, 43]. Another finding in this study was that the maxillary central incisors was mostly affected by trauma, it was consistent with previous studies [2, 5, 9, 23, 43-44]. The most common type of injury was the uncomplicated crown fracture (enamel-dentine fracture) seen in (71.5%) of the traumatized teeth, similar findings were observed by many studies [2, 5, 23-26, 41-43]. The correlation between diagnosis and traumatized anterior teeth was statistically significant. P-value = 0.016. Females had been reported to be more concerned about their oral health and they appear to be more motivated to utilize oral health care services [45-47]. In this study, trauma to anterior teeth was seen more in females than males and was contrary to previous studies [2, 22, 24, 40, 48]. The correlation between diagnosis and side of the dental arch with traumatized anterior teeth was statistically significant. P-value = 0.031. This study showed a female preponderance that could be because females have more aesthetics concerns and are more motivated to utilize oral health care services than males.

Conclusion

Trauma to anterior teeth is often neglected when not associated with pain, shocking sensation, discolouration and abscess. The issue of delay in seeking proper dental treatment is a global health problem. Effort needs to be applied to create better awareness on benefits of immediate clinic attendance with prompt and adequate treatment following trauma to anterior teeth.

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