ORIGINAL ARTICLE

Prevalence of Tooth Wear in Permanent Dentition of Pakistani Adults

MUHAMMAD WASEEM ULLAH KHAN[1], HAFIZ NASIR MAHMOOD[2], ALIYA FATIMA[3]

ABSTRACT

Aim: To determine the Prevalence of Tooth Wear (Non-Carious Tooth Surface Loss) in permanent dentition of Pakistani adults so that need for preventive or restorative care can be assessed.
Methods: This Descriptive Cross Section Survey was conducted at 3 Outpatient Departments of de'Montmorency College of Dentistry, Lahore from 01-05-2016 to 30-04-2017. 2500 subjects from the General Outdoor were clinically examined for Signs of Non Carious Tooth Surface Loss including occlusal/ incisal faceting, smooth and shiny lesions of dental erosion, sharp V-shaped or saucer shaped abrasive lesions in the cervical areas of teeth.
Results: Total 965 patients had signs of Tooth Wear out of which 642 were Males. The Prevalence of Tooth Wear was 38.6% and twice more common in Males.
Conclusion: Tooth Wear is a common finding in our adult population. Although it is a preventable and easily treatable condition when diagnosed in the initial stages but if left untreated it can incur high treatment costs and discomfort for the patients. It is suggestible that the dentists carry out screening for this type of tooth surface loss as a part of their routine clinical exam.
Keywords: Tooth Wear, Dentition, Permanent

INTRODUCTION

Tooth Wear or Non-Carious Tooth Surface Loss is a natural physiological process which takes place throughout life but if the rate of this loss is accelerated it jeopardizes the survival of teeth and is considered as pathologic[1, 2].

Conventionally, the terms Attrition, Abrasion, Abfraction and Erosion are used to refer to this Non-Carious Tooth Surface Loss[3]. Attrition is basically the loss of tooth surface caused by tooth to tooth contact during mastication or contact between occluding or approximal tooth surfaces. It presents in the form of matching wear facets on occluding surfaces, shiny facets on amalgam contacts and possible fracture of cusps or restorations[4]. Abrasion is the loss of dental tissue caused by factors other than opposing adjacent teeth like Tooth-Brush Trauma during vigorous brushing. It is usually located at the cervical areas of teeth. The lesions are more wide than deep and the most frequently affected teeth are cuspids and premolars[4, 5]. Abfraction is another type of Tooth Wear also occurring at the cervical areas of the teeth but it is possibly caused by tensile and compressive forces during tooth flexure. It appears as deep, narrow V-shaped notches on the cervical area of the teeth with premature occlusal contact. Erosion on the other hand is chemical degradation of tooth surface not involving bacterial action. This can be caused by dietary habits (Ingestion of acidic foods & drinks) or Gastroesophageal Reflux Disease. Eroded teeth appear as having bilateral concave defects with a smooth and glazed surface. Teeth are generally free from any plaque deposits and the commonly affected areas are palatal aspects of upper anteriors and cupping lesions on posterior occlusal surfaces[6].

The Prevalence of Tooth Wear widely differs in various parts of the world[7-10]. In Pakistan there is scarcely any data available on this subject so the current study is an attempt to investigate the extent of this menace in our adult population.

[1]Assistant Professor, de'Montmorency College of Dentistry, Lahore
[2]Medical Officer, Mayo Hospital, Lahore
[3]Dental Surgeon, Jinnah Hospital, Lahore
Corresponding to Dr. Muhammad Waseem Ullah Khan, Email : veritarian@yahoo.com Cell. +923334844939

METHODOLOGY

This Cross Sectional Survey was conducted at the OPD of de'Montmorency College of Dentistry, Lahore from 01-05-2016 to 30-04-2017. Subjects included in the study were both male and female patients of age between 12-50 years with atleast 6 functional occlusal units present in the oral cavity. The Exclusion Criteria was as under

1. Pts affected by any developmental dental anomaly like Amelogenesis Imperfecta, Dentinogenesis Imperfecta, Hypodontia, Microdontia
2. Patients suffering from Dental Fluorosis.
3. Loss of more than 2 Occlusal Units.
4. Presence of Xerostomia (Dry Mouth).
5. Patients with concomitant systemic diseases including Diabetes Mellitus and Hypertension.
6. Psychologically distressed patients.

After taking verbal consent and recording demographic data, the patients were examined for any signs of Tooth Wear. The presence of wear facets on the cusp tips or occlusal/incisal surfaces, cupping lesions or fractures restorations on the posterior occlusal surfaces indicative of Non-Carious Tooth Surface Loss, lesions with sharp V-shaped or smooth borders on the cervical aspects of teeth and/or smooth glazed surface typical of erosive damage most commonly on the palatal aspects of upper anterior teeth were noted.

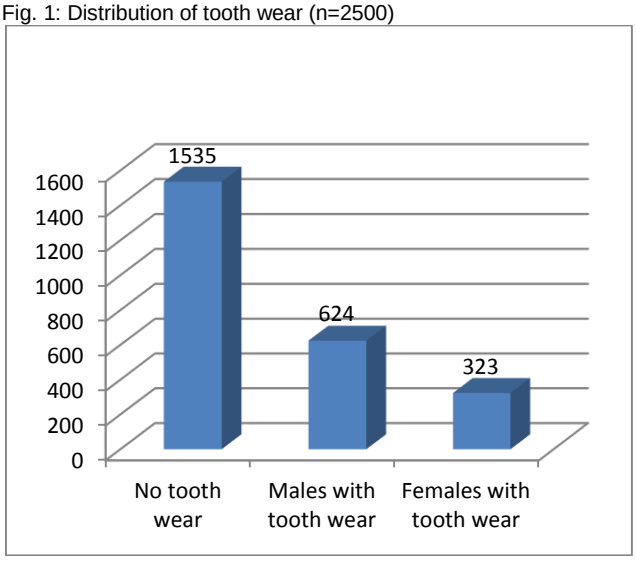
RESULTS

The data collected was analyzed using SPSS version 22. The mean age of the sample was 42 years. Out of 2500 patients, 965(38.6%) had signs of Non-Carious Tooth Surface Loss. 642(66.5%) out of 965 affected patients were males while 323(33.5%) were females. This shows that males are affected twice as many times as females by Tooth Wear.

Table 1: Frequency of Tooth Wear in Pakistani Adults

Parameter	Frequency
Number of total subjects	2500(100%)
Number of subjects affected by Tooth Wear	965 (38.6%)
Number of Males affected by Tooth Wear	642 (66.5%)
Number of Females affected by Tooth Wear	323 (33.5%)

Fig. 1: Distribution of tooth wear (n=2500)



DISCUSSION

So far there is no published data which discusses the incidence or prevalence of Tooth Wear in the adult population of Pakistan. Various studies have been performed in different parts of the world[7-10]. A study by Hang et al[7] showed that tooth wear was present in 89.4% of 15 year old adolescents of the Chinese population. They proposed that most of this Tooth Surface Loss was of erosion type and because of high intake of soft drinks and acidic fruit juices. In another study published in the Archives of Orofacial Sciences by Searah et al[8] 20% of the secondary school children in Malaysia had Pathological Tooth Wear and 92% of those affected were males. Most frequently affected teeth were present in the upper and lower anterior region.

Pineda et al[9] also studied Tooth Surface Loss in young adults of Mexico. According to them 31.7% of their subjects showed signs and symptoms of Tooth Wear and erosion was the most prevalent type of Tooth Wear. 10.8% of the affected people had lesions extending into dentine while in approximately 89.2% only enamel was affected. They also attributed this Tooth Surface Loss to the frequent intake of acidic diet including sweet carbonated drinks, fruit juices and sports drinks.

Cruz et al[10] discovered that males above 45 years of age had 20% more prevalence of Tooth Wear than females of the same age. Similarly, in school going population Tooth Wear was 1.6 times more in males. Prevalence in young adults of age 12 and above was 50%. They also showed that children with skeletal class II had greater incidence of Tooth Surface Loss than patients with skeletal class I. A literature review by Spijker et al[11] concluded that the prevalence of Tooth Wear gradually increases with age. They predicted that the percentage with severe Non-Carious Tooth Surface Loss increases from 3% at 20 years of age to 17% at 70 years of age.

The current study aimed to record a baseline for occurrence of Tooth Wear in adult Pakistani population which was found to be 38.6% with male to female ratio of 2:1. There is a need for future work in this domain and research must be done to analyze different types Tooth Wear and their correlation with predisposing factors in different age groups.

CONCLUSION

More than one third of the adult population of Pakistan is suffering from one or more forms of Tooth Wear which is alarming. Need of the hour is to create awareness regarding this growing problem and its preventive and management strategies in general public so a healthy dentition can be preserved throughout the lifespan of the population.

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