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TOOTH BRUSHING BEHAVIOUR AND DENTAL ABRASION AMONG THE DIAMOND WORKERS OF BAPUNAGAR AREA ,EAST AHMEDABAD , GUJARAT

Periodontology

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ABSTRACT

Aim: To Assess Tooth Brushing Behaviour And Dental Abrasion Among The Diamond Workers Of Bapunagar Area ,East Ahmedabad , Gujarat.
Materials and methods: Four Hundred patients [126 female and 274 male] who had a cervical abrasion was examined.Information on patient age , gender , frequency and technique of brushing , type of tooth brush and which hand to use for brushing , frequency to change a brush was obtained. Data was analysed statistically.
Results : The study revealed a statistically significant relationship between abrasion and age groups as well as genders. Statistically significant difference was found between abrasions and tooth brushing method and which hand use for brushing and type of tooth brush.
Conclusion : The prevalence was higher among males as compared to females. The prevalence of lesions was higher in older age group. The horizontal tooth brushing technique and hard tooth brush was significantly associated with the occurrence of cervical lesion .diamond workers who was used right hand for tooth brushing and abrasion was common in a left side and vice versa.

KEYWORDS

diamond worker, dental abrasion , tooth brushing behaviour

INTRODUCTION

Loss of hard tissue at the cervical area of teeth, and not due to caries, has been observed, investigated and categorised under various names, including abrasion, erosion and attrition depending on a etiology.

Being the subject of our study, abrasion is defined as the pathological wearing away of dental hard tissue by mechanical forces1-3 . Although the clinical appearance of these lesions varies, they frequently appear to be wedge-shaped defects having a bright surface, normal hardness and colour, and a sharp border3-5. Tooth brushing is the simplest and most effective way to meet oral-hygiene requirements for removing bacterial plaque from tooth surfaces. However, cervical dental abrasion caused by improper toothbrushing6-7. Problems with brushing are commonly related to technique, duration, daily frequency, and the force applied when brushing8-11.

In addition, Radentz et al.12 have determined that the composition and amount of dentifrices play an important role in the development of abrasive lesions. Previous studies4-12 have revealed that cervical toothwear lesions increased with age.However, the prevalence of cervical abrasion lesions by gender is equivocal. Radentz et al.12 reported that males have more lesions than females, while Sangnes and Gjermo13 reported a slightly higher prevalence in females. This study has been carried out to determine whether there is a correlation between dental abrasions and the frequency and technique of tooth brushing as well as to examine abrasion prevalence according to age and gender.

Aim

To Asses Tooth Brushing Behaviour And Dental Abrasion Among The Diamond Workers Of Bapunagar Area ,East Ahmedabad , Gujarat.

Materials and method

A questionnaire based survey was conducted among 400 diamond workers of Bapunagar area, East ahmedabad , Gujarat over a period of two and half months.

All the diamond workers who were willing to give informed consent and above the age of 18 years were included.

A self explanatory questionnaire was designed to assess tooth brushing behaviour and dental abrasion. The questionnaire of 11 Questions were handed to diamond workers .

They were informed about aims and objectives of the study.

Questionnaire was prepared both in English and Gujarati (local language) to get better understanding of questions by the diamond workers.

Questionnaire
Name of patient
sex : male / female

1] Age of patient
A] 21 TO 30
B] 31 TO 40
C] 41 TO 50
D] More than 51

2] education of the patient
A] illliterate
B] secondary and higher secondary
C] graduate
D] post graduate or more

3] how you clean your teeth ?
A] with charcol
B] with finger
C] with brush
D] with datan

4] what you use with datan ,brush and finger?
A] salt
B] tooth powder
C] tooth paste
D] any tooth powder

5] How many times you clean your teeth in a day ?
A] one time
B] two time
C] three time
D] more than three time

6] How do you brush your teeth ?
A] horizontal
B] vertical

C] circular
D] irregular

7] At which frequently do you change your brush?
A] 3 month
B] 6 month
C] 1 year
D] don't know

8] Which type of brush do you use?
A] soft
B] hard
C] medium
D] don't know

9] Which hand do you use for tooth brushing ?
A] left
B] right

10] How many members are there in your family ?

11] What is your total family income per month?

Statistical analysis

The collected data was analysed by using statistical package for social sciences 20 software.

Descriptive statistics were employed and results were presented as percentages.

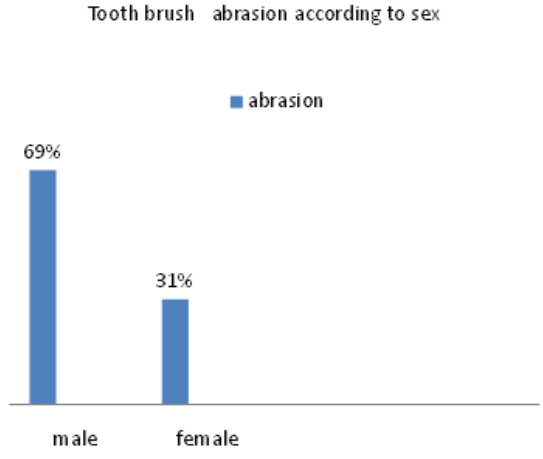
Result

The prevalence was higher among males (69 %) as compared to females(31%) [graph 1]. Diamond workers who was used right hand for tooth brushing and abrasion was common in a left side (48.67%)and vice versa(51.33%) [graph 2]

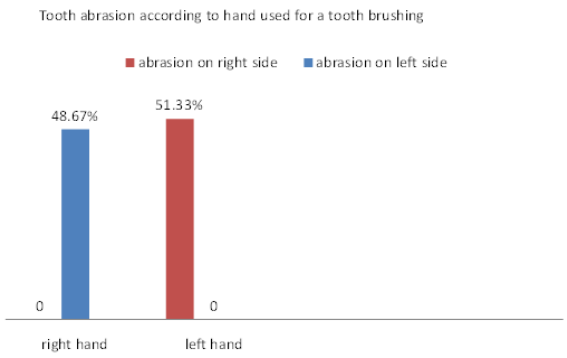
The prevalence of lesions was higher (36.28 %) in older age group [graph 3]. The horizontal tooth brushing technique (61%) and hard tooth brush(63%) was significantly associated with the occurrence of cervical lesion [graph 4 & 5]. Workers who were changing their toothbrush yearly had more dental abrasion(61.61%) as compared to those who were changing their toothbrush by 3 to 6 months. [graph 6]

Demographic data of studied population

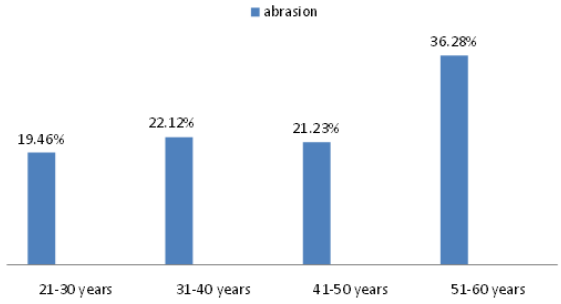
Characteristics	Frequency [out of 400]	Percentage
Sex	Male [274] Female [126]	68.5% 31.5%
Age	21 - 30 yr - [68] 31- 40 yr - [130] 41 - 50 yr - [118] 51 -60 yr - [84]	17% 32.5% 29.5% 21%



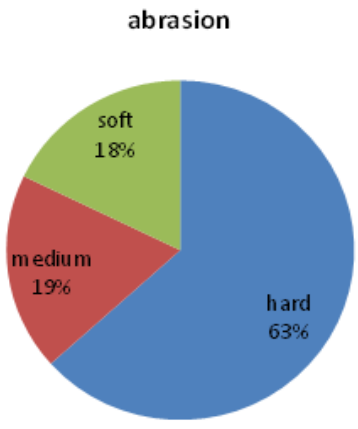
[Graph 1] Tooth brush abrasion according to sex



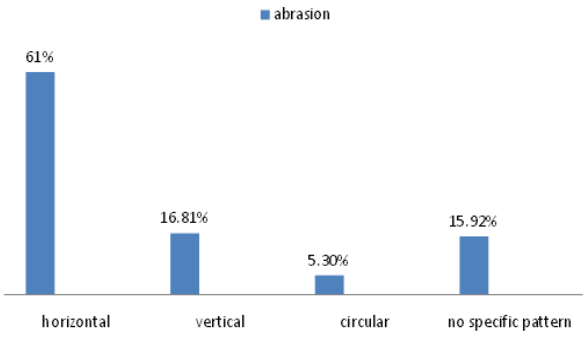
[Graph 2] Tooth abrasion according to hand used for a tooth brushing



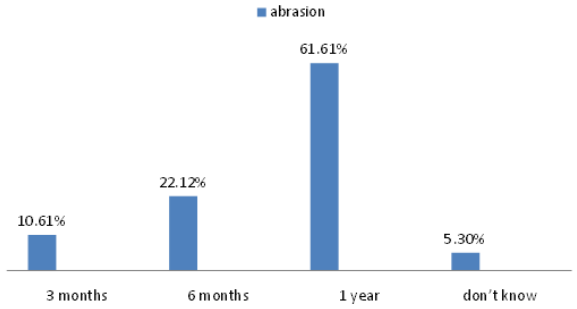
[Graph 3] Tooth brush abrasion according to age of patient



[graph 4] Tooth brush abrasion according to type of tooth brush



[Graph 5] Tooth brush abrasion according to type of tooth brushing technique



[Graph 6] Tooth brush Abrasion according to duration of a change a tooth brush

Discussion

The etiology of cervical abrasion is multifactorial and is a combination of several types of wear factors, such as age, diet, gingival recession, periodontal health, dentifrice, speed, and pressure used during brushing, which are interrelated. It is clear that tooth brushing plays an important role. The present results confirm an association between improper tooth brushing, method of tooth brushing, changing of toothbrush, clean teeth, and abrasion, in general, clinical wear of tooth. However, many things remain unknown regarding the causes of abrasion. Therefore, the etiology of the wedge-shaped lesion is highly complicated, as there are wide variations in the clinical characteristics of these lesions14.

Previous studies4-12 revealed that cervical toothwear lesions increased with age. Our study, too, determined that the frequency of tooth brushing abrasions would increase with age and that the difference between age groups was statistically significant ($p<0.001$).

Radentz et al12 reported that the frequency of cervical abrasions was higher in males than females, and that the difference between the genders came nearer to being of statistical significance. We, in our study, determined that the prevalence of tooth brushing abrasions was higher in males and that there was a statistically significant difference between tooth brushing abrasions and genders ($p<0.01$).

Bergstrom and Lavstedr15 reported in their study that the frequency of cervical tooth wear lesions was higher in those who brush at least twice daily,compared to patients who brush less often and that this increase was statistically significant.

Brushing technique has also shown statistically significant results with the formation of wedge-shaped defects. It has been shown that depending on the tooth brushing technique, forces of different severity and shapes would occur in the cervical region of teeth. These differences in the techniques have become influential in the investigation of relations between them and the prevalence of cervical tooth lesions. Present study has reveled higher prevalence of cervical abrasion in those subjects who brushed their teeth horizontally, and the difference was statistically significant. the study conducted by Litonjua et al.,[6] shown similar result.

The stiffness of bristles available as soft, medium, and hard also added to the presence of lesions. Those subjects who used hard toothbrushes showed more cervical lesions than those using soft toothbrushes. But here the force used may have an additive effect. Yadav et al16, Borcic et al17, and Masato et al18,have also reported similar results in their studies.

Statistically significant relationship was found between hand preference and tooth-brushing abrasion in this study. diamond workers who was used right hand for tooth brushing and abrasion was common in a left side and vice versa. No statistically significant relationship was found between hand preference and tooth-brushing abrasion in study by Mehmet at al19 in 2010

However, the effects of brushing behavior on tooth abrasion were statistically significant. Therefore, dental surgeon should advice patients regarding proper brushing techniques to prevent severe cervical defects. Further neurological studies that investigate the cognitive abilities and neuromuscular factors of left- and right-handed individuals are needed to better understand the effects of handedness on cervical tooth defects and oral-hygiene performance.

Conclusion

From the present study it can be concluded that The prevalence was higher among males as compared to females. The prevalence of lesions was higher in older age group. The horizontal tooth brushing technique and hard tooth brush was significantly associated with the occurrence of cervical lesion .diamond workers who was used right hand for tooth brushing and abrasion was common on a left side and vice versa. So it is hereby recommended that the population must be educated and guided with appropriate prophylactic measures that are effective for oral cleanliness but still harmless to oral tissues. So we as dentists and our paradental staff be wholeheartedly involved in preventing such lesions by teaching correct tooth brushing techniques. To prevent this problem from becoming worse and become a burden on our society, dental professionals should try to combat the problem from its early stages.

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