



**ATTITUDE OF PATIENTS TOWARDS ORAL HYGIENE DURING
ORTHODONTIC TREATMENT**

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ABSTRACT

A study was performed to assess the attitude of the Orthodontic patients towards maintenance of oral hygiene. A questionnaire was put forth to 100 patients who were undergoing Orthodontic therapy to evaluate the oral hygiene aid they used. The patient's oral hygiene practices before starting Orthodontic therapy had been compared with the oral hygiene measures taken during orthodontic therapy to see if they have increased their efforts at maintaining oral hygiene during orthodontic treatment. Results showed that though there was a significant improvement in most of the patients, there were still a group of patients who have taken no additional efforts to improve on their oral hygiene practices.

KEY WORDS: Oral Hygiene, Patient Attitude, Orthodontic Treatment, Additional Care



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INTRODUCTION

Maintaining a proper oral hygiene goes a long way in preventing any form of dental disease. Accumulation of plaque on the tooth surface may result in the formation of white spot lesions on the surface of the teeth. White spot lesions are nothing but areas of enamel demineralization caused by the acids released by the bacteria present in plaque. These white spots are the precursors of dental caries. There are number of factors that result in increased accumulation of plaque on the surface of the teeth, malocclusion being one of them. Orthodontic treatment corrects malocclusion and gives self-confidence to the patient by improving the facial aesthetics and the patient's smile¹. Further, aligning the teeth in their proper positions helps to reduce the accumulation of plaque and calculus. However during treatment, there is an increase in plaque retention that is caused by the irregular surfaces of the Orthodontic brackets. The patient is totally made aware of this fact and is instructed on how to maintain a good oral hygiene. The patient is also asked to avoid certain foods that are sticky so as to avoid further food accumulation on the

surface of the brackets. The Orthodontist can only advice he patient and it is entirely up to the patient to maintain his oral hygiene. Hence this study was conducted to see if the Orthodontic patients actually took additional care to maintain their oral hygiene during the course of their Orthodontic treatment.

MATERIALS AND METHODS

100 patients undergoing Orthodontic treatment were selected for the study. The patients included in the study had been under Orthodontic treatment for various periods of time that ranged from 3 months to 20 months. For the 100 patients, the average number of months under Orthodontic treatment at the time of this survey was calculated to be 10 months. All the 100 patients were provided a questionnaire with fourteen questions (Table 1) that are related to their care for oral hygiene and the results were then obtained. The questionnaire was framed such that the oral hygiene practices of the patient prior to orthodontic treatment and during the course of orthodontic treatment could be compared. The study has been approved by the institution review board.

Table 1
Attitude of Patients towards Oral Hygiene during Orthodontic Treatment

1.	How long have you been undergoing Orthodontic treatment?	Average of 10 months	
2.	Are you aware that you have to take additional care towards Orthodontics treatment?	Yes	93
		No	7
3.	The number of times you used to brush daily prior to start of Orthodontic treatment?	Once	55
		twice	45
4.	Time spent on brushing (each time you brush) prior to start of Orthodontic treatment?	1 minute	20
		1-2 minutes	45
		2-3 minutes	29
		More than 3 minutes	6
5.	Did you have the habit of using a mouth wash regularly prior to start of Orthodontic treatment?	Yes	34
		No	66
6.	Did you have the habit of using any interdental brush any other interdental aid before start of Orthodontic treatment?	Yes	23
		No	77
7.	How often do you have your teeth cleaned by your dentist prior to start of Orthodontic treatment?	Once in 6 months	24
		Once in a year	33
		Once in 2-3 months	11
		never	32
8.	How many times do you brush your teeth after starting Orthodontic treatment?	Once	33
		Twice	67
9.	How much time do you spend for brushing (each time you brush) after starting Orthodontic treatment?	1 minute	20
		1-2 minute	20
		2-3 minutes	39
		More than 3 minutes	21
10.	What type of tooth brush do you use at present while undergoing Orthodontic treatment?	Regular toothbrush	53
		Orthodontic toothbrush	47
11.	Do you use any interdental brush while undergoing Orthodontic treatment?	Yes	34
		No	66
12.	Do you use a mouthwash regularly after the starting of Orthodontic treatment?	Yes	56
		No	44
13.	Do you use gargle after every meal while undergoing Orthodontic treatment?	Yes	45
		No	55
14.	How often do you get your teeth cleaned by your dentist while undergoing Orthodontic treatment?	At each visit of Orthodontic treatment	28
		Once in every 3 months	17
		Once in 6 months	37
		Others	18

RESULTS

The results have been tabulated in Table 1. The results show that among the 100 patients chosen for the study, 93 of them were aware of the increased care required towards oral hygiene during their Orthodontic treatment period. 7 patients were unaware or had not been instructed on oral hygiene maintenance during the treatment period. Prior to the commencement of treatment 55 patients brushed only once daily while 45 brushed twice daily and the time taken for brushing varied greatly with 20 individuals brushing only for 1 minute, 45 individuals brushing for 1-2 minutes, 29 individuals for 2-3 minutes and 6 individuals for more than 3 minutes. Only 34 individuals had the habit of using a mouthwash and 23 individuals the habit of using other interdental cleaning aids before the start of orthodontic treatment. The number of times the individuals had undergone professional scaling prior to orthodontic treatment were 24, 11 and 33 for once in 6 months, once in 2-3 months and once in a year respectively, while 32 individuals had never undergone any professional cleaning before. Once the patients have commenced with the Orthodontic treatment, most patients took better care of the oral hygiene than they had before the start of the treatment. This could be attributed to the instructions given to them by their Orthodontists. 63 patients brushed twice daily while 37 continued to brush only once. The time taken for brushing increased with 21 patients brushing for more than 3 minutes, 39 for 2-3 minutes and 20 for 1-2 minutes while 20 continued to brush for 1 minute or less. The number of patients using mouthwash regularly increased to 56 and those using additional hygiene aids like interdental brush increased to 34. The patients undergoing professional cleaning also increased where 28 patients underwent scaling at every visit to the orthodontist, 17 every 3 months and 37 patients every 6 months.

DISCUSSION

Enamel demineralisation takes place as a result of bacterial activity in the plaque. B Ogaard et al found that enamel demineralization occurs as early as 4 weeks after bracket placement². The Orthodontic patient is given a lot of instructions to take additional care during Orthodontic treatment. Even then we come across Orthodontic patients who are non-compliant and do not maintain their oral hygiene. Hence it is prudent that adequate counselling is given to the patient at each visit. In this study, 93 patients said that they were aware that they had to take additional care during Orthodontic treatment while 7 said that they were not. This showed that there are some minor lapses on the part of the Orthodontists in not properly educating all their patients. Even though the awareness figures are encouraging, such lapses in patient counselling should not take place as it would lead to deleterious effect on the oral health of their patients.

There has been an improvement in the number of times the patients brushed daily after the starting Orthodontic therapy, where there was a 22% increase in the number of patients who had taken up to brushing twice daily. However, only 47% of the patients had started to use an Orthodontic tooth brush while the majority continued to use a regular tooth brush. The Orthodontic tooth brush is specifically designed for better plaque removal during Orthodontic treatment. Studies have shown that using an Orthodontic tooth brush resulted in less plaque retention³. It was also seen that an electronic tooth brush with an Orthodontic head was more effective than a manual Orthodontic tooth brush⁴. There was also an increase in the time spent by the patients on brushing. A 20% increase in the number of patients brushing for 2-3 minutes or more after Orthodontic treatment. However 40% of the patients still spent less than 2 minutes on brushing which is still a disturbing figure. A brushing time that spans 2-3 minutes is very effective in removing plaque. The amount of force used while brushing also matters. A force of 150 g has been found to be very effective⁵. There was also a 22% increase in the use of mouth wash regularly by patients after starting Orthodontic therapy while the use of inter-dental brush increased only by 10%. These improvements though encouraging, still show that there are still a large number of patients who still have to improve on their oral hygiene maintenance. Gargling after every meal tends to reduce the amount of debris on the brackets. Only 55% of the patients have admitted to gargling regularly after every meal. There has been a great improvement in the number of scaling appointments that the patients had with their dentist after the start of Orthodontic therapy. The use of fluorides has been shown to prevent caries formation. The use of fluoridated mouth rinses and tooth pastes have been shown to reduce the incidence of white spot lesions during Orthodontic treatment⁶. Topical applications of fluorides have also been found to have a great effect on preventing enamel demineralization^{7,8}. Use of fluoride releasing bonding adhesives⁸⁻¹², elastomers¹³ etc. have also shown reduction in the incidence of white spot lesions.

CONCLUSION

This study showed that even though there has been an improvement in the patients care for their oral hygiene during Orthodontic therapy, there are still a significant number of patients where improvements have to be made. This can only be achieved by regular reinforcement of the importance of oral hygiene at every single Orthodontic visit. Regular use of fluoridated tooth pastes and mouth rinses would go a long way in not only preventing white spot lesions but also in re-mineralization of the tooth surface. Use of additional aids like videos regarding the brushing technique, importance of scaling procedures etc would be useful in this endeavour.

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