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Original Research

Effect of oral hygiene on Orthodontic Treatment- A Clinical Study

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ABSTRACT

Background-White spots, discoloration, recession, root resorption occur during orthodontic treatment if proper hygiene not maintained. The aim of this study was to report the effect of oral hygiene on ortho treatment. **Materials and Method-**100 patients were observed during ortho treatment thoroughly and proper oral hygiene instructions were given to each and every patient. Patients who follow oral hygiene during fixed orthodontic treatment observed with no white spots, decalcification, discoloration on their teeth. People who unable to follow oral hygiene white spots, decalcification, discoloration visible on their teeth. **Result-**One hundred patients were studied who maintain their oral health while ortho treatment do not develop side effects such as white spots, discoloration of the teeth as compared to other people who unable to maintain their oral hygiene while ortho treatment. 90% people suffer white spots, discoloration of teeth who unable to maintain oral hygiene during ortho treatment. **Conclusion-**Oral hygiene plays very important role in the ortho treatment.

Key Words-White spots, discoloration, oral hygiene

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INTRODUCTION

Braces set up for lifetime of straighter, healthier tooth, but without the right care long lasting damage as well.¹ Most visible of these are white stain common side effect of braces that is often only discovered after their removal.² These stains can be permanent if untreated but there are ways to minimize the damage to your smile. It may darken over time but white spots are actually an early sign of tooth decay. The minerals that form the protective layer around your teeth or enamel have slightly yellow hue.³⁻⁵ When that enamel is stopped away, the sensitive white tissue beneath is exposed.⁶⁻⁸ Braces make it more difficult to clean your teeth thoroughly, trapping food debris and allowing plaque to bury. Regular brushing and flossing along with healthy dietary choices will go long way toward keeping your braces clean. If you are patient, child with braces, supervise brushing and flossing to ensure your child is caring for his or her teeth properly.^{10,11} Home dental care is essential but it is no substitute for regular dental exams. you should always follow a recommendation cleaning and check up schedule particular while you or your child will wear braces. The most common negative side effect of orthodontic treatment with fixed appliances is the development of incipient carious lesions around brackets and bands.¹² The irregular surfaces of brackets, bands and wires and other attachments limit naturally occurring self cleaning mechanisms such as movement of the oral musculature and saliva. Since orthodontic appliances make plaque removal more difficult,

patients are more susceptible to carious lesions.¹³ Certain bacterial groups such as mutans streptococci and lactobacilli, which are present in the plaque, ferment sugars to create an acidic environment which over time leads to development of dental caries.⁸⁻¹²

MATERIALS AND METHOD

Data were collected from patients in which discolored teeth were discovered during orthodontic treatment followed by white spots, ditches on anterior surface of teeth. Some people complain of swollen gingiva followed by root resorption and recession. In this survey discoloration was detected under natural light, dental light, intraoral photograph were acquired. Their photograph were then compared to previous photograph and first panel (dentist, patient, dental hygienist) confirmed the discoloration.

RESULTS

Oral hygiene instructions were given to all patients during fixed orthodontic treatment. Some people do not follow oral hygiene instructions and they suffer from side effects of orthodontics due to their poor oral hygiene. 90% people suffer yellow discoloration of teeth, 80% white spots visible on their teeth after ortho treatment, 75% people suffer from tooth decay. Majority of people

suffer from gingivitis which is 95%.80% people suffer from gum recession. During radiograph visibility 75% people observed with

Table 1: People Who Unable To Maintain Oral Hygiene

S.No.	People Who Unable To Maintain Oral Hygiene	% Of People
1.	Yellow discoloration of teeth	90
2.	White spots	80
3.	Ditches on the anterior surface of teeth	40
4.	Tooth decay	75
5.	gingivitis	95
6.	Gum recession	80
7.	Root resorption	75

Table 2: White spots and discoloration of teeth

	White spots and discoloration of teeth	PRESENT/ABSENT
1.	Maxillary, Mandibular central incisors	PRESENT
2.	Maxillary, Mandibular lateral incisors	PRESENT
3.	Maxillary , Mandibular cainines	PRESENT
4.	Maxillary, Mandibular premolar	ABSENT
5.	Maxillary , Mandibular molar	ABSENT

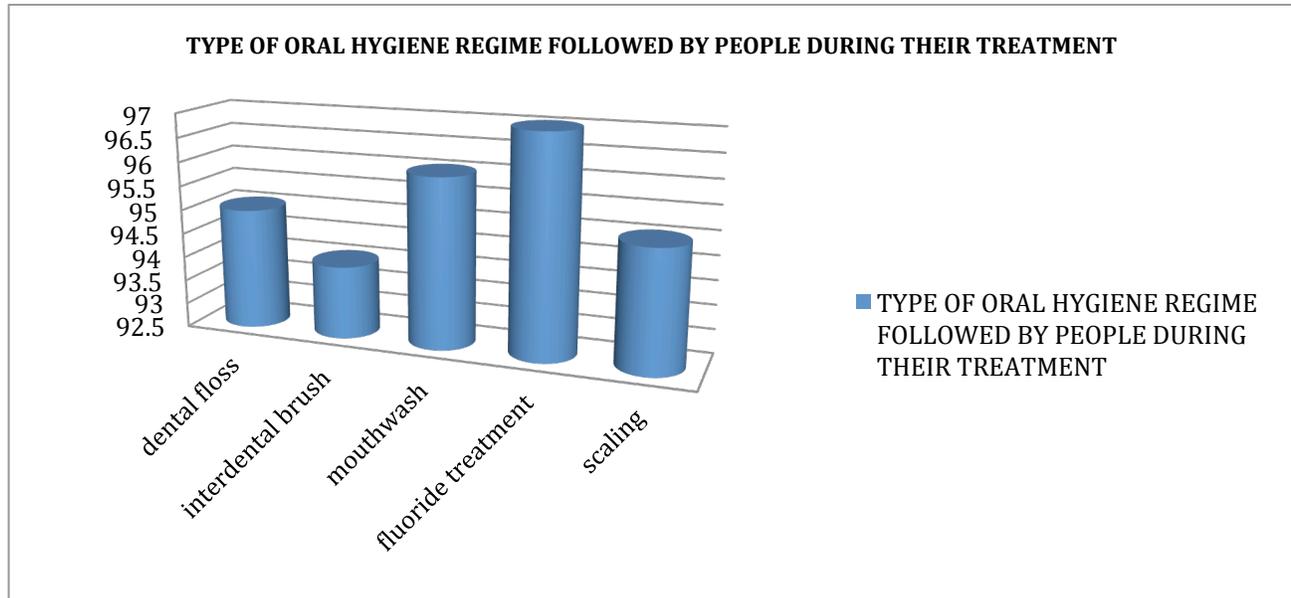
Table 3: People Who Follow Proper Oral Hygiene During Fixed Orthodontic Treatment

	People Who Follow Proper Oral Hygiene During Fixed Orthodontic Treatment	% of people
1.	Yellow discoloration of teeth	0
2.	White spots	0
3.	Ditches on the anterior surfaces of teeth	3
4.	Tooth decay	0
5.	Gum recession	5
6.	Root resorption	60
7.	Gingivitis	0, few have little swollen gingiva

root resorption and the white spots visible on maxillary anterior teeth including maxillary and mandibular incisors. There is no sign of white spots on mandibular premolars and molars. On the other side those people who use proper oral hygiene regimes which include dental floss, mouth washes, fluoride treatment, scaling, interdental brushes during orthodontic treatment suffers no sign of decalcification, white spots, discoration But some people suffer from little swollen gingival ,no root recession but root resorption visible in very few patients.

DISCUSSION

Out of 100 patients, the anterior teeth including maxillary central incisor,cainine,lateral incisor were highly discolored on the areas where braces were placed to the patient. We suspected this was because of both the teeth have single long root which may cause PBF (pulpal blood flow) to be more easily disturbed.^{5,6} No discoloration occurred in molar because they have multiple roots which result in few disturbances in PBF(pulpal blood flow).



White spots is very common adverse effect of orthodontic treatment. Decalcification is considered to be the first step towards cavitation. Decalcification of enamel occurs in 80% of orthodontic patients and most effected teeth are maxillary incisors. These lesions can develop within four weeks, which is the typical time span for orthodontic follow up. The prevention protocol for decalcification includes plaque control through brushing of the teeth with fluoridated tooth paste. Daily rinsing with 0.02% or 0.05% sodium fluoride solution can also minimize decalcification of enamel. Additionally, fluoridated solutions may delay the progression of lesions. Application of fluoride varnish twice a year or a combination of antibacterial and fluoride varnish may reduce the incidence of decalcification.^{2,6} If decalcification is observed after removal of orthodontic appliances, the practitioner should not rush into the management of these lesions.³ Time should be given for possible re-mineralization of these white spots.² In the cases the patient should be instructed to continue with the plaque control protocol, which includes daily rinsing with fluoridated solutions. 100 patients were observed who has not missed their scaling appointments and unfollow orthodontics instruction of brushing teeth twice a day.⁸ 90% patients suffered from yellow discoloration of teeth. 80% Patients suffered from white spots. 40% patients suffered from ditches on the anterior surface of teeth. 75% patients has seen with decalcification. Majority of 95% people suffered from gingivitis.^{6,5} 80% people suffered from gingival recession and 75% people suffered from root resorption. On the other side patients who follow instructions of the orthodontics with proper fluoride treatment and proper scaling.⁹ After 3 month are follow orthodontics instructions of brushing teeth twice a day. No discoloration of teeth seen among any patient. No visible white spots seen among any patient. Few ditches seen on the anterior surface of teeth.² There is no sign of any tooth decay (Decalcification) seen in any patient. Gingiva of the patients when observed have observed the very little swelling but not any severe signs of gingivitis observed. Root resorption seen among patients with the proper brushing twice a day along with fluoride treatment.^{2,6} People followed proper oral hygiene regime which includes regular dental floss, tooth brushing twice a

day after meal, fluoride treatment, mouth wash, scaling.¹ People who followed this regime have very little side effects of orthodontics treatment as compared to other people who unable to follow orthodontists oral hygiene instructions.^{6,8} Good oral hygiene is very important to ensure successful orthodontic treatment. Maintaining good oral hygiene in orthodontics is one of elements related to compliance.

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