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STATE OF ORAL HYGIENE AND WAYS TO IMPROVE IT

The issues of inflammatory periodontal diseases are relevant not only due to the wide prevalence of this pathology, but also due to the fact that methods of treatment do not always effectively prevent relapses of inflammation in the surrounding dental tissues after successful therapy.

Malocclusion and dental crowding play a significant role in the occurrence of periodontal tissue diseases [2,4,5].

The treatment of dental anomalies is aimed not only at improvement of the aesthetic appearance of the patient, but is, by itself, an element of prevention of periodontal diseases. However, the use of modern fixed orthodontic devices can lead to a deterioration of state of oral hygiene and thereby cause or increase inflammatory processes in periodontal tissues [1,3,6].

The purpose of our study was to determine the state of oral hygiene before and during orthodontic treatment of dental anomalies, as well as to determine the impact of hygienic and therapeutic measures on the dynamics of changes in oral hygiene.

We examined patients with dental crowding aged from 18 to 25 years, who received orthodontic treatment with the use of braces.

The patients were divided in two groups: group 1 consisted of patients, who had concomitant chronic catarrhal gingivitis (20 people), group 2 included patients with healthy parodontium (20 people).

Following indexes were used to determine oral hygiene:

- J. Silness, H. Loe indexes were used to determine the intensity of soft plaque formation index: the amount of soft calcular deposit in the pre gingival area was examined on 4 surfaces: 16, 26, 36, 46 teeth using a probe and from two surfaces (labial and lingual) 11, 31 teeth [7];
- K. Stallard index was used to determine the area of plaque accumulation behind the

coloration of the vestibular surfaces of 16, 11, 26, 31, teeth and lingual surfaces of 36,46 teeth [1].

The results of the examination of patients during their first visit are presented in Table 1.

Table 1

State of oral hygiene during the first visit

Group	Silness-LoeIndex (points)	StallardIndex (points)
1 group	1,39±0,1	1,49±0,09
2 group	0,75±0,09	0,78±0,02

In addition, the state of hygiene was determined depending on the degree of occlusion of the jaws. The analysis of the condition of periodontal tissues and oral hygiene in cases of various degrees of jaw occlusion showed that the indicators of the studied indexes are directly dependent on the degree of jaw occlusion and have more pronounced values at occlusion of II and III categories than at the jaw occlusion of I category. Thus, hygiene indexes in cases of the jaw occlusion of II and III categories of were higher by 20.2% for Silnesss-Loe index and by 13.2% for Stallard index in comparison to occlusion of the I category.

All patients had professional oral hygiene performed and had hygiene training before the start of orthodontic treatment. The patients received recommendations on the use of toothbrushes, toothpastes, brushes and flosses.

The patients of group 1 were additionally treated for chronic catarrhal gingivitis, this treatment included: brushing of teeth twice a day with Lacalut active toothpaste, taking Cyclo 3 Fort medication – 1 capsule 2 times a day for 14 days and rinsing the oral cavity with Forteza solution 3-4 times a day.

Lacalut active toothpaste is a preventive toothpaste. It strengthens the gums, reduces their bleeding and protects against periodontitis.

Pharmacological action: antiseptic, anti-inflammatory, hemostatic, anticariotic, increases the resistance of tooth enamel to acids.

It facilitates the removal of plaque (adhesive paste substances containing the molecules

of chlorhexidine), reduces inflammation in the gum tissue and bleeding (allantoin and bisabolol), provides astringent effect, strengthens gums, reduces sensitivity of tooth enamel for cold and hot, sweet and sour (aluminum lactate), strengthens the structure of tooth enamel and prevents caries (aluminum fluoride).

Indications: gingivitis, dental plaque or stone, bleeding from the gums, periodontopathy, caries (treatment and prevention).

1 capsule of Cyclo 3 Fort medication contains the dry extract of Ruscus (*Ruscus aculeatus*) with a titrated content of sterol heterosides (150 mg), hesperidin methylhalcone (150 mg), ascorbic acid (100 mg);

Pharmacotherapeutic group: vasoprotectives, capillary stabilizing agents. The medication has veinotonic, lymphotonic and angioprotective properties.

The veinotonic effect of Ruscus extract occurs due to two levels of adrenergic mechanisms, namely:

direct stimulation of postsynaptic alpha adrenoceptors of smooth muscle cells of vessel walls;

indirect effect due to the release of noradrenaline from granules of presynaptic nerve terminals.

Angioprotective effect. The medication reduces the penetrance of human capillaries (it was demonstrated with the help of Landis test), and also increases the resistance of capillaries (it was confirmed by the method of induction of petechiae in the skin under rarefaction). A significant increase in capillary resistance was observed in the first hour after the dose intake. This effect is mainly associated with the action of ascorbic acid.

Forteza is a solution for the oral cavity. The actual substance of Forteza medication is Benzydamine—anon-steroidal anti-inflammatory drug with analgesic and anti-exudative properties. In addition, when applied topically, Benzydamine acts as a disinfectant and has a local anesthetic effect on the oral mucosa. Its effectiveness in topical use is explained by the ability to penetrate the epithelial layer and reach effective concentrations in inflamed tissues. When applied topically in prescribed concentration, Benzydamine is absorbed by the mucous membrane, but its concentration in the blood plasma is so low that it cannot have any pharmacological effect.

Indications: symptomatic treatment of irritation and inflammation of the oropharynx; pain caused by gingivitis, stomatitis, pharyngitis; dentistry after tooth extraction or for

preventive purposes.

Forteza is a solution for rinsing. It is used only for rinsing of the oral cavity. Do not exceed the recommended dose.

The adults and children over 12 years of age rinse the mouth for 20-30 seconds using one measuring cap (15 ml) of the rinse solution. Then one need to spit out the liquid without swallowing it. The rinse dose (15 ml) can be diluted with the same amount of water, if necessary.

The procedure is to be repeated 2 – 3 times with intervals of 3 – 4 hours. It is recommended not to use the medication for more than 7 days.

Taking professional hygiene measures and monitoring the quality of individual hygiene, as well as prescribing a medical and preventive complex for chronic catarrhal gingivitis, led to a significant improvement in the condition of periodontal tissues and oral hygiene (Table 3).

The state of oral hygiene in cases of dental crowding in the course of orthodontic treatment

Table 3

Time of examination	Indexes			
	1 group		2 group	
	<i>Silness-Loe</i> (points)	<i>Stallard</i> (points)	<i>Silness-Loe</i> (points)	<i>Stallard</i> (points)
After carrying out of preventive measures and during fixation of the device	0,58 ± 0,06	0,59 ± 0,06	0,65 ± 0,02	0,68±0,04
1 month after the fixation of the device	1,35 ± 0,1	1,44 ±0,1	1,18 ± 0,06	1,06 ± 0,06

3 months after the fixation of the device	1,09 ± 0,05	1,16 ± 0,05	0,92 ± 0,04	0,96 ± 0,05
6 months after the fixation of the device	1,20 ± 0,09	1,20 ± 0,05	1,06 ± 0,05	1,12 ± 0,08

A month after the fixation of the device, the patients of groups 1 and 2 showed a deterioration in the dynamics of hygiene indexes. The patients of group 2 also show symptoms of inflammation in periodontal tissues, although there were none before the start of orthodontic treatment. These inflammation symptoms were reflected in changes of the parameters of periodontal indexes.

3 months after the fixation of the braces, the adaptation to the orthodontic device was observed, hygiene skills were developed and, as a result, the indicators of hygiene indexes improved. At the same time, it should be noted that the patients of group 1, who received the above described complex of medication to eliminate the symptoms of chronic catarrhal gingivitis before the start of orthodontic treatment, showed significantly better oral hygiene in different periods of orthodontic treatment.

Thus, the prevention of periodontal diseases in patients with dental anomalies on the background of orthodontic treatment with braces is the relevant problem. One of the most important principles of its solution is timely training of hygiene skills, even before fixation of fixed orthodontic devices, thorough professional hygiene during orthodontic treatment, the appointment of local antiseptics and preventive medication aimed at increasing of local protective factors.

For this purpose, we recommend the medical and preventive complex for the prevention of inflammatory periodontal diseases, which includes: brushing teeth twice a day with Lakalut active toothpaste, taking Cyclo 3 Fort medication – 1 capsule 2 times a day for 14 days and rinsing the mouth with Forteza solution 3 – 4 times a day.

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