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## ORTHODONTIC TREATMENT OF PATIENTS WITH PERIODONTAL DISEASES

**Abstract:** One of the most difficult tasks in dentistry is the orthodontic treatment of patients with periodontal diseases. This article covers the periodontal disease and prevention of oral diseases.

**Key words:** oral cavity, periodontal, teeth, treatment.

Orthodontic treatment of adult patients with periodontal diseases is one of the most difficult tasks in dentistry. Currently, inflammatory periodontal diseases occupy the second place in frequency and prevalence among all dental diseases. According to WHO, in 70% of cases, malocclusion is characteristic of this category of patients. At the same time, malocclusion exacerbates the severity of morphofunctional disorders in the periodontium, which in turn complicate anomalies in the position of teeth and occlusion in general.

The most important task of a practicing physician is to preserve the health and well-being of the patient. In dentistry, this means, first of all, the prevention of diseases of the oral cavity. If, despite the ongoing prevention, the destruction of teeth and periodontal tissues occurs, then it is periodontal treatment that becomes the foundation on which further dental treatment will be based. Any restoration, from a small seal to a complex bridge-like structure on implants, can be performed only when the supporting periodontal structures are healthy and not inflamed. Inflammatory periodontal diseases are currently the most common diseases in the world. Every day there is more and more evidence of the influence of periodontal diseases on systemic health.

Periodontal diseases arise and develop throughout a person's life and occur in childhood, adolescents and adults. Periodontal is a complex of tissues

surrounding the tooth, having a genetic and functional community: periodontal, alveolar bone, gum with periosteum and tooth tissue. The periodontium performs a number of important functions: barrier, trophic, reflex regulation of masticatory pressure, plastic and shock-absorbing. With inflammation of periodontal tissues, these functions are disrupted, the degree of which increases with the duration of the course of inflammation, especially when the destruction of the bone of the alveolar processes joins the inflammatory destruction of soft tissues, causing the mobility of teeth, a significant lesion of the functional activity of the chewing apparatus up to the loss of teeth. It is characteristic that as the local inflammatory reaction becomes heavier and its generalization simultaneously increases its detrimental effect on the state of the general protective mechanisms of the body and a number of organs and systems, i.e. a vicious circle is formed, which significantly complicates the solution of therapeutic tasks.

With the progress of civilization and changes in socio-economic conditions, the prevalence of periodontal diseases has increased dramatically. Currently, they are somewhat less common in young people, and at the age of over 40 years more common than caries. According to Grudyanov and Barere (1994), only 12% of the population have a healthy periodontal disease, 53% have initial inflammatory phenomena, 23% have initial destructive changes, and 12% have moderate and severe lesions. In persons aged 35 years, the proportion of initial periodontal changes progressively decreases by 26-15%, with a simultaneous increase in moderate and severe changes up to 75%.

Modern epidemiological data indicate not only the significant prevalence of periodontal pathology in children and adults, but also the influence on the frequency of the disease of such factors as: dental deposits; oral hygiene; poor-quality dentures, orthodontic structures and fillings; dental deformities; diet; features of drinking regime and oral respiration; medications, and also transferred and concomitant diseases.

Thus, Wolf notes that most epidemiological studies reflect the momentary state (the average indicators for the disease at any given time). Only Loe and colleagues in 1986 conducted a long-term study of attachment loss in two groups of patients: Norwegian students and teachers, and Sri Lankan tea plantation workers. Then they compared the ethnic and socio-economic differences of these groups. As the results showed, in the Norwegian group, the average attachment loss per year is 0.1 mm, and in the Sri Lankan group - 0.2–0.3 mm. The most frequent lesions in both groups were in the molar area. Epidemiological studies practically do not distinguish between rare early forms of the disease, which occur very quickly in young patients (aggressive periodontitis), and chronic periodontitis, which is widespread throughout the world, usually having a slow course. According to sociological studies, true aggressive forms are very rare in Europe and the USA (2-5% of all cases). Exact figures concerning aggressive localized periodontitis are known: in Europe it occurs in 0.1% of young people, and in Asia and Africa the incidence rate is higher (up to 5%).

Thus, predisposing factors of periodontal diseases can be bad habits, such as alcohol and smoking, environmental (environmental pollution) and occupational hazards. From the standpoint of psychosomatics, the factors predisposing and permitting the development of the disease are considered, the starting point (resolving, triggering) of the development of the disease are difficult life situations. Trigger links are often defined by concepts such as stress, defined not as a set of environmental influences, but rather as an internal state of the body, in which the implementation of its integrative functions is complicated and as chronic psycho-emotional stress. According to the data, periodontal diseases are widespread among the world's population. Early manifestations of inflammatory periodontal diseases are registered at the age of 10 to 20 years, 80% of children suffer from gingivitis. Periodontal diseases adversely affect the digestive function, the psycho-emotional sphere, reduce the

body's resistance to the action of infectious and other factors, lead to sensitization of the patient.

Based on the analysis of literature data, the following conditions have been identified for the orthodontic treatment of adult patients with inflammatory periodontal diseases:

- Non-aggressive forms of periodontitis;
- Periodontitis not complicated by severe concomitant somatic pathology;
- Loss of attachment of teeth not reaching the apical third, lesion of furcations no more than 1-2 degrees;
- Improvement of periodontal status in response to periodontal treatment;
- Good, stable level of oral hygiene, regular attendance of the patient for hygiene procedures;
- Patient motivation;
- The opportunity to visit the dentist at the appointed time.

To achieve successful results in patients with malocclusion on the background of paradont pathology, a full range of diagnostic measures for the condition of the periodontal tissues is necessary.

Orthodontic treatment, carried out without taking into account the condition of the periodontal tissues, leads to the appearance and aggravation of inflammatory phenomena in the parotid tissues, which makes it difficult to move teeth. In case of paradontitis, orthodontic treatment is possible only after the elimination of the acute phase of the disease or during remission, after active anti-inflammatory therapy.

Thus, the high prevalence of inflammatory periodontal diseases, significant changes in the dental system of the patient make this a social and general medical problem, therefore, the prevention of periodontal diseases is the fundamental basis of the public health system. For prevention, it is necessary to define a set of state, collective, family and individual measures aimed at

preventing and preserving human health. Orthodontic movement of teeth with periodontal lesion is associated with certain difficulties and is somewhat different from conventional orthodontic treatment:

- a reduction in the amount of force used is required, since this force is distributed over a smaller root surface. The amount of force used should decrease in proportion to the loss of bone tissue;

- moving teeth over long distances leads to deterioration of the periodontal condition;

- changing the biomechanics of tooth movement (force system) due to the displacement of the resistant center of the tooth closer to the tip. Braces must be fixed higher, according to the degree of exposure of the roots;

- with severe periodontitis and pronounced destruction of bone tissue (more than 1/2 the length of the root), it is necessary to immediately fix the teeth with an immersion splint;

- it is mandatory to conduct selective testing after completion of orthodontic treatment;

- orthodontic treatment of patients with chronic inflammatory periodontal diseases should end with prosthetics and permanent splinting of the dentition.[2]

Conclusions. Orthodontic treatment of patients with periodontal diseases leads to the elimination of functional overload and restoration of chewing efficiency. To achieve success in treatment and obtain stable long-term results in patients with periodontal diseases, an integrated approach with the participation of a group of specialists is necessary.

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