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# ORTHODONTIC CARE IN COMPREHENSIVE TREATMENT OF PATIENTS WITH SEVERE PERIODONTAL PATHOLOGY

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#### Abstract

Periodontal diseases, along with dental caries, occupy a leading place in prevalence among the population of most countries. The occurrence of periodontal tissue pathology is influenced by various etiological factors, mainly complications of other diseases of the dental system: failed restorations, foci of chronic odontogenic infection, malocclusion, secondary adentia. Therefore, patients who require coordinated complex work of dentists of various specialties come to see a periodontist. Clearly planned patient management requires the elimination of foci of chronic infection, correction of tooth position, stabilization of mobile teeth using adhesive technologies, rational prosthetics and implantation.

Keywords: periodontal pathology, orthodontics, complex treatment.

#### Introduction

Due to the insufficient level of medical literacy of the majority of the population, many adult patients come to a periodontist by referral from an orthopedic dentist when any type of prosthetics will be difficult in terms of reliability and aesthetics. One of the symptoms of moderate and severe stages of generalized periodontitis is the so-called "fan-shaped divergence of incisors", i.e. a change in the position of the anterior group of teeth on the upper and lower jaws associated with their vestibular deviation and the formation of tremes. This condition worries patients, as it is associated with a deterioration in the aesthetics of a smile and pronounced tooth mobility. The classic periodontal solution to eliminate tooth mobility is splinting. However, in this category of patients, it cannot be adequately carried out due to the visibility of the periodontal splint in the treme area and its increased fragility. It is at this point that an orthodontist traditionally enters the chain of consultations. The lack of a single treatment plan and understanding between specialists cannot lead to any satisfactory results in this group of patients. However, in cases of moderate to severe periodontal pathology, when full-fledged orthodontic treatment with braces is associated with an increased risk of losing any teeth, in cases where the patient refuses orthodontic treatment with braces for economic reasons, we in any case try to carry out a compromise orthodontic correction.

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## **Results of the study**

The mechanism of occurrence of tremas in periodontitis is associated with changes in the myodynamic system: loss of bone tissue around the teeth as a supporting structure and age-related decrease in the tone of the orbicularis oris muscle. Considering that these patients traditionally do not have tooth rotation in the anterior region with a satisfactory position of the anterior group of teeth in height relative to each other, we close the tremas in the anterior region using orthodontic elastics. Orthodontic buttons are vestibularly fixed to the most distal teeth in the dental row. Between them, passing vestibularly along the entire dental row, an orthodontic elastic of light force (60 grams) is put on. To prevent slipping of the elastic in the anterior region, composite "visors" are installed on the vestibular surface of two incisors in the center of the crown. The patient is recommended to change the elastics independently twice a day. A control visit is scheduled once a week. In most cases, complete closure of tremas takes 1-1.5 months. Then the patient is transferred to a periodontist for temporary or permanent splinting, after which the necessary endodontic treatment, surgical intervention, implantation and rational prosthetics are carried out. Patient G.N. complained of tooth mobility, bleeding, purulent discharge from periodontal pockets. During an objective examination, the patient had hyperemia and swelling of the gingival margin, an abundance of dental plaque, bleeding during probing, purulent discharge from periodontal pockets, grade 2-3 tooth mobility, bone resorption up to 1/2 and in certain areas up to 2/3 of the root surface. The depth of the periodontal pockets ranged from 5 to 6 mm or more in different areas. Partial adentia. Multiple tremas, fan-shaped divergence of teeth. Odontogenic cyst in the area of teeth 13 and 14. Diagnosis: "Chronic generalized periodontitis of severe degree, neutral bite, bimaxillary protrusion, tremas in the anterior part of the upper and lower dental arches, odontogenic cyst on the upper jaw in the area of the 13th, 14th teeth." Concomitant diagnosis: "Insulin-dependent diabetes mellitus, hypertension."

Treatment progress. Stage 1, periodontal (conservative): professional hygiene; removal of supraand subgingival dental plaque with one-stage closed curettage; correction of hygiene skills; prescription of conservative therapy in the form of rinsing with 0.05% chlorhexidine solution, Tantum Verde, use of echinacea extract in lozenges for 7 days. Stage 2, therapeutic and surgical: endodontic treatment of the 13th tooth, removal of the 15th, 14th, 26th teeth. Cystectomy and resection of the apex of the 13th tooth. Stage 3, orthodontic: given the presence of tremas in the anterior section of the upper and lower dental arches and reduced tone of the orbicularis oris muscle, it was decided to carry out the initial stage of orthodontic correction with the improvement of the myofunctional state using the LM-activator device. The device was selected 2 sizes smaller than that corresponding to the initial size of the anterior section, for the initial closure of the tremas. Tremas in the anterior section of the lower and upper dental arches were closed. Stage 4, periodontal (conservative): temporary splinting of teeth on the upper and lower jaws (Respond arches, 0175 (Ormco)). Stage 5, therapeutic: endodontic treatment of teeth 12, 11, 21, 22, 23, 24. Stage 6, periodontal (surgical): flap surgery in the upper jaw area using bone chips and PRP gel. Stage 7, therapeutic: contouring the cutting edge; removing the temporary retainer from the teeth on the upper jaw; splinting on the upper jaw; splinting material Fiber Kore, restorative material Estelite; splint correction. Stage 8, orthopedic: manufacturing a nylon removable denture for the upper jaw. Stage 9: performing dental volumetric tomography on the Morita device of zones 46-



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43 and 36-33 to determine the level of bone tissue and the possibility of preserving the teeth. Stage 10, therapeutic: performing endodontic treatment of teeth 46, 45, 44, 43, 36, 35, 34, 33 taking into account the endodontic treatment protocol. Stage 11, therapeutic: removing the temporary retainer from the teeth of the lower jaw; splinting of teeth 46, 45, 44, 43 and teeth 36, 35, 34, 33. Splinting material: Glasspan tourniquets. Filling material: Estelite. Stage 12, surgical: extraction of teeth 42, 41, 31, 32, due to their high mobility and bone resorption level, extraction of this group of teeth was discussed with the patient initially and was performed at the final stage, to save space for a removable denture. Stage 13, orthopedic: manufacturing of a removable plate denture for the lower jaw.

## Conclusion

The treatment result is observed for three years. The condition of hard and soft tissues is stable. The patient feels comfortable and has no complaints about bleeding, tooth mobility, feels comfortable when wearing and using the prosthesis. Professional hygiene and monitoring of the splint condition are carried out once every 6 months. In the future, the work will be monitored, allowing for various adjustments. Early planning of assistance to patients with periodontal tissue pathology by different specialists allows solving complex clinical situations, optimizing treatment time and provides a choice for both dental specialists and patients.