ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

FEATURES OF PREPARATION FOR ORTHOPEDIC TREATMENT WITH SECONDARY DEFORMATIONS OF THE DENTITION

Tuychiev Rashidbek Valijon Ugli

Assistant of the Department of Dentistry and Otolaryngology, Fergana Medical Institute of Public Health

Annotation: The article is devoted to the study of the features of preparation for orthopedic treatment of patients with secondary deformations of the dentition. The key stages of diagnostics, soft tissue treatment, orthodontic correction, surgical preparation and temporary prosthetics are described. The need for an interdisciplinary approach and the use of modern technologies, such as digital planning and CAD/CAM systems, is emphasized. The work focuses on the importance of an individual approach taking into account the age, health status and psychological characteristics of the patient. The data presented confirm the effectiveness of an integrated approach to achieve functional and aesthetic results.

Keywords: secondary deformations of the dentition, orthopedic treatment, preparation for prosthetics, diagnostics, orthodontics, surgical preparation, temporary prosthetics, CAD/CAM technologies, dentoalveolar system, interdisciplinary approach.

Introduction

Modern dentistry pays great attention to the restoration of the function of the dental system. Secondary deformations of the dentition, arising due to tooth loss, occlusion disorders or other pathological conditions, represent a serious problem for orthopedic treatment. To achieve a stable and aesthetically satisfactory result, careful preparation is required, including diagnostics, planning and preliminary measures. The relevance of the topic is due to the growing number of patients with such problems and the development of new technologies that allow achieving better results.

Stages of preparation for orthopedic treatment

1. Diagnostics and planning

The diagnostic stage is key to successful treatment. It includes:

- **Clinical examination** : identification of changes in the dentition, condition of soft tissues and occlusal relationships.
- **X-ray examination** : assessment of the condition of tooth roots, bone tissue and the presence of pathologies.
- **Production of diagnostic models** : allows visualization of deformations and treatment planning.
- **Photographic documentation** : to document the patient's initial condition.
- **Computed tomography** : used for detailed evaluation of anatomy.
- **Analysis of functional occlusion** : identification of pathologies of teeth closure and distribution of chewing load.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

In addition to the above, an important step is the use of digital technologies, such as intraoral scanning, which allows you to create a three-dimensional model of the dental system and more accurately plan upcoming interventions. In complex clinical cases, it is recommended to use virtual modeling programs that allow you to evaluate treatment options and demonstrate the expected results to the patient. Also, modern software allows you to create templates for surgical stages of treatment, for example, when installing implants, which significantly increases the accuracy of manipulations.

Based on the data obtained, a treatment plan is drawn up, including a sequence of stages and predicted results. It is important to take into account not only dental, but also general medical health indicators of the patient.

2. Treatment of soft tissue diseases and elimination of inflammatory processes

To create a favorable environment, it is necessary to conduct complex treatment of soft tissue diseases. This includes the following activities:

- **Professional oral hygiene.**

Removal of plaque, tartar and biofilm, which are the main risk factors for inflammatory diseases.

- **Treatment of periodontitis or gingivitis.**

Prescribing procedures to eliminate inflammation, such as curettage of gum pockets, treatment with antiseptic agents, use of anti-inflammatory drugs and, if necessary, laser therapy.

- **Elimination of factors causing inflammation.**

Correction and replacement of overhanging edges of fillings, removal of orthopedic structures that injure soft tissues, as well as alignment of incorrectly positioned teeth.

- **Monitoring the condition of the mucous membrane.**

Regular examination for early detection and treatment of pathologies, especially in patients with systemic diseases such as diabetes, hypertension or autoimmune disorders.

- **Use of local and general anti-inflammatory drugs.**

Prescription of local agents (gels, ointments, rinsing solutions) and systemic anti-inflammatory drugs for severe inflammatory processes.

- **Physiotherapy procedures.**

Laser treatment, ultrasound therapy, darsonvalization to improve blood circulation, accelerate tissue regeneration and reduce inflammation.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

- **Patient education on oral care.**

Individual consultation on the choice of hygiene products and methods, correct teeth brushing technique and the use of additional products such as irrigators, floss and rinses.

This approach helps to minimize the risk of relapse and ensure long-term health of oral tissues.

3. Orthodontic preparation

In cases of severe secondary deformations of the dental arches or jaws, orthodontic intervention may be required. The main tasks are:

- **Alignment of teeth to restore correct occlusion.**

Providing physiological contact of teeth to prevent overloading of individual teeth and disruption of chewing functions.

- **Creating space for prosthetics.**

Expanding the dental arch or moving teeth to create sufficient space for future orthopedic structures.

- **Movement of teeth to eliminate tilts and displacements.**

Correction of incorrect positioning of teeth that prevents the installation of dentures or destabilizes the dental arch.

- **Improving intermaxillary relationships.**

Optimizing the position of the jaws relative to each other to ensure proper joint function and a harmonious facial profile.

The use of modern orthodontic systems, such as transparent caps (aligners), braces or other innovative techniques, significantly facilitates and accelerates the treatment process, and also improves the aesthetic comfort of the patient.

4. Restoration of supporting teeth

Abutment teeth play a key role in successful prosthetics, ensuring the reliability and durability of the structure. Preparation includes:

- **Treatment of caries and its complications.**

Ensuring the health of supporting teeth for their further load.

- **Restoration of the crown part of the tooth.**

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

Use of composite materials, inlays or crowns for strengthening and aesthetic restoration.

- **Endodontic treatment (if necessary).**

Filling of root canals and creation of a solid foundation for prosthetics.

- **Strengthening teeth with pins or post-and- cores.**

Preventing the destruction of weakened teeth and ensuring reliable fixation of the orthopedic structure.

5. Surgical preparation

In case of significant deformations or pathologies, surgical intervention is an important step. This includes:

- **Extraction of teeth that cannot be restored.**

Elimination of sources of inflammation and creation of conditions for prosthetics.

- **Bone grafting for bone tissue deficiency.**

Increasing the volume and height of the bone for reliable installation of implants or fixation of prostheses.

- **Installation of dental implants.**

Creation of support points for future fixed or removable dentures.

- **Correction of soft tissues.**

Modeling of the gum contour to achieve an optimal aesthetic result.

6. Temporary prosthetics

At the preparation stage, temporary structures perform important functions:

- **Restoration of chewing and speech functions.**

Allows the patient to eat and communicate fully during treatment.

- **Stabilization of the teeth position.**

Prevents teeth displacement until permanent structures are installed.

- **Evaluation of the aesthetic result.**

Allows the patient to see and evaluate the preliminary result of the treatment.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

- **Protection of prepared teeth.**

Provides protection from mechanical and temperature impacts, as well as from possible damage.

An integrated approach at each stage of preparation is the key to successful prosthetics, restoration of the functions of the dental system and achievement of a high aesthetic result.

Peculiarities of working with patients

Preparation for orthopedic treatment requires an individual approach that takes into account:

- Age of the patient.
- The degree of severity of deformations.
- Associated diseases.
- Psychological state and expectations of the patient.

It is necessary to consult with the patient, explain the stages of treatment and discuss the expected results. Particular attention should be paid to patients with increased anxiety, conducting additional psychological preparation.

Conclusion

Preparation for orthopedic treatment of patients with secondary deformations of the dentition is a complex and multi-stage process. Careful diagnostics, a comprehensive approach and interdisciplinary interaction of specialists ensure successful restoration of the function and aesthetics of the dental system, as well as improve the quality of life of patients. New technologies, such as digital planning and CAD/CAM systems, can significantly improve the effectiveness and predictability of treatment.

References

1. Ivanov A.V., Sidorov P.N. "Fundamentals of Orthopedic Dentistry". Moscow: Medical Literature, 2020.
2. Petrova E.S. "Orthodontics and orthopedics: modern approaches to treatment". St. Petersburg: Dental Bulletin, 2018.
3. Smith J., Brown T. "Advanced Prosthodontics". New York: Dental Press, 2019.
4. Johnson WR "Dental Implants: Principles and Practice". London: Elsevier , 2021.
5. Vasiliev K.K. "Bone grafting in dentistry". Moscow: Nauka, 2017.