



# X-Ray Results During the Introduction of Osteoplastic Materials for The Prevention of Atrophy of the Alveolar Process

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## ABSTRACT

The aim of the research is to determine the indications for reconstruction of the alveolar process after tooth extraction according to orthodontic indications.

## Keywords:

Dental Pathology, Orthodontic Devices

**Introduction:** The traditional principles of treatment of this dental pathology are to create favorable factors for the normalization of the shape and size of dental arches and the occlusal relationships of antagonists. During the bite of permanent teeth, with a pronounced shortage of free space in the dentition, indications for a conservative method using orthodontic devices are somewhat limited. If there is a shortage of space in the dentition of more than 10 mm, surgical methods of treatment are indicated. Tooth extraction in the planned sequence helps to reduce crowding, allows permanent teeth to take the correct position in the dental arch [1-3]. However, the removal of individual teeth often leads to numerous complications and complaints from patients. It has been shown that after tooth extraction, the shape and size of the alveolar process change not only in the vertical, but also in the horizontal direction and, as a rule, changes in the type of reactive bone atrophy in the area of teeth limiting the defect of the dentition are observed [4]. Various augmentation methods are used to prevent deformation of the alveolar bone in the defect area. A sufficient number of studies of domestic and foreign specialists have been devoted to the

issues of augmentation of the alveolar ridge. Basically, this problem is related to the strengthening of the alveolar bone for the installation of implants and the manufacture of modern prosthetic structures. Reconstruction of the alveolar bone is achieved by various methods, the main of which are surgical (graft application, membrane and distraction techniques, bone splitting) [5]. However, in the available literature we have not found information about the reconstruction of the alveolar process of the postextraction space to determine the conditions for orthodontic movement of teeth. [6-8]

**The aim of the research is:** to determine the indications for reconstruction of the alveolar process after tooth extraction according to orthodontic indications.

**Material and methods:** We proposed to form a postextraction space simultaneously with the removal of a permanent tooth according to orthodontic indications. The object of the study was 40 patients of the first period of adulthood, who had individual teeth removed according to orthodontic indications. Patients are divided

into two groups. The first (or main) group included patients who had postextraction space formed by various methods after tooth extraction (18 people). Patients of the second group refused the proposed methods of surgical treatment, and they underwent orthodontic treatment according to generally accepted methods. Patients of both groups underwent orthodontic treatment using modern methods of fixed edgewise technique. The basis of surgical methods of treatment of patients of the main group was the method of filling the hole of the removed tooth with bone-plastic materials. After extraction of the permanent tooth, a gentle curettage of the alveoli was performed. According to the indications, the hole of the removed tooth was densely filled with bone-plastic biomaterials and distributed over the vestibular and lingual surface of the alveolar ridge. Sutures were applied to the mucous membrane and periosteum. To expand the alveolar ridge of the postextraction space, to correct the contour of bone tissue, to increase the height of bone tissue in the defect area, the alveolus filled with biomaterial was often covered with a membrane. The main guideline for modeling the postextraction space was the vestibular-lingual diameter of the teeth limiting the defect. After reconstruction of the alveolar process, its width in the middle part was half of the sum of the vestibular-lingual diameters of the teeth limiting the defect on plaster models of the jaws in the vertical and vestibular-lingual directions, the loss of bone tissue of the vestibular and lingual surfaces relative to the conditional plane connecting the projections of the cervical part of the roots of the teeth limiting the defect was estimated. The amount of loss of bone tissue vertically was estimated relative to the plane connecting the necks of the proximal surfaces of the teeth limiting the defect. Statistical processing was carried out directly from the general data matrix Excel 7.0 (Microsoft, USA) with the involvement of the capabilities of the programs (Microsoft, USA), "Arcade" and included the determination of the average value, its mean square deviation and representativeness error.

**Results:** The differences were especially pronounced in the vertical direction, and in patients of the main group, the loss of the alveolar ridge was  $0.16 \pm 0.09$  mm, while in patients of the comparison group, the same indicator was  $2.98 \pm 0.14$  mm. On the vestibular side of the alveolar process in patients of the main group, there was a decrease in the alveolar process by  $0.39 \pm 0.06$  mm, and on the lingual side by  $1.03 \pm 0.12$  mm. At the same time, in patients of the comparison group, these indicators were  $3.14 \pm 0.21$  mm and  $2.13 \pm 0.26$  mm, respectively. On the presented clinical examples, a significant difference in the vestibular-lingual dimensions of the alveolar process is determined. After tooth extraction, as a rule, the loss of bone tissue is more pronounced on the vestibular side. In such cases, during orthodontic movement of teeth in the area of the defect, the symptom of "vertical fold of the postextraction space" is often noted, which makes it difficult to completely eliminate the diastema. Thus, in orthodontic treatment with the removal of individual teeth, augmentation or reconstruction of the alveolar process of the upper jaw or the alveolar part of the lower jaw is a method of preventing complications of orthodontic treatment and relapse of pathology. The patients of the comparison group often had complications associated with bone tissue deficiency. There was an exposure of the proximal surfaces of the teeth, limiting the defect, the absence (or resorption) of the inter-root septa. One of the complications of bone tissue deficiency was the "symptom of a vertical fold of the post-extraction space", for which, at the stage of orthodontic treatment: between the incisors of the upper jaw, the symptom of a "vertical fold" is determined. Dentistry is characterized by the presence of a vertical fold on the mucous membrane of the gum in the central part of the defect area. The "infringement" of the mucous membrane often contributed to slowing down or completely stopping the movement of teeth into the post-extraction space and required additional surgical methods of treatment. No such complications were detected in the patients of the main group.

**Conclusion:** Thus, reconstruction of the alveolar process of the upper jaw and the alveolar part of the lower jaw is an effective means of preventing complications at various stages of orthodontic treatment. The augmentation method is more rational to carry out simultaneously with the extraction of teeth according to orthodontic indications or with a pronounced loss of bone tissue of the alveolar process. The obtained data can be used as a criterion for the effectiveness of complex treatment of patients with anomalies and deformities of the maxillofacial region.

#### Literature:

1. Maxzuna U., Zарафруз B. IMPROVING THE PROVISION OF THERAPEUTIC DENTAL CARE TO PREGNANT WOMEN //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 618-623.
2. Tavakalova Q. M., Qobilovna B. Z., Sarvinoz Y. Preventive Measures in the Treatment of Caries in School children //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 60-65.
3. Qobilovna B. Z., Nodirovich E. A. EVALUATION OF ORTHOPEDIC TREATMENT WITH REMOVABLE DENTAL PROSTHESES FOR PATIENTS WITH PAIR PATHOLOGY //Spectrum Journal of Innovation, Reforms and Development. – 2023. – Т. 11. – С. 95-101.
4. Tohirovna M. L., Qobilovna B. Z. Optimization of Conservative Treatment of Periodontal Diseases Using Modern Technologies //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 132-137.
5. Qobilovna B. Z. INTEGRATIVE APPROACH TO THE TREATMENT OF DISEASES OF THE ORAL MUCOSA USING LASER THERAPY //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 408-412.
6. Qobilovna B. Z. MODERN ASPECTS OF ETIOLOGY AND PATHOGENESIS OF HERPES ZOSTER //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 12. – С. 152-156.
7. Qobilovna B. Z., Maxzuna U. Improvement of Providing Therapeutic Dental Care to Pregnant Women. Therapeutic and Preventive Measures //Eurasian Research Bulletin. – 2023. – Т. 16. – С. 146-150.
8. Bustanovna I. N. ASSESSMENT OF CLINICAL AND MORPHOLOGICAL CHANGES IN THE ORAL ORGANS AND TISSUES IN POST-MENOPAUSE WOMEN //Thematics Journal of Education. – 2022. – Т. 7. – №. 3.
9. ИСЛАМОВА Н. Б., НОРБУТАЕВ А. Б. ПРОФИЛАКТИКА И ЛЕЧЕНИЯ КАРИЕСА У ПОСТОЯННЫХ ЗУБОВ //ЖУРНАЛ БИМЕДИЦИНЫ И ПРАКТИКИ. – 2022. – Т. 7. – №. 1.
10. Bakhtiyorovna M. U. MODERN METHODS PREVENTION AND TREATMENT POSTOPERATIVE HYPERESTHESIA IN ORTHOPEDIC DENTISTRY //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 12. – С. 1104-1108.
11. Bakhtiyorovna M. U. CAUSES OF REMOVABLE DENTURE BREAKS AND ALLERGIC REACTIONS //Spectrum Journal of Innovation, Reforms and Development. – 2022. – Т. 10. – С. 374-377.
12. Sadriev N. N. Optimization of orthopedic treatment of dentition defects in patients with chronic diseases of the gastrointestinal tract //Science and Education. – 2022. – Т. 3. – №. 10. – С. 63-67.
13. Norbutaev A. et al. Results of the effect of complex treatments on perodont microcirculation in child periodontitis with iron deficiency //European Journal of Molecular & Clinical Medicine. – 2020. – Т. 7. – №. 2. – С. 2020.
14. Ortikova N., Rizaev J. THE PREVALENCE AND REASONS OF STOMATOPHOBIA IN CHILDREN //Euro-Asia Conferences. – 2021. – Т. 5. – №. 1. – С. 182-183.
15. Alimdjanovich R. J., Khairullaevna O. N., Normuratovich N. A. CORRECTION OF PSYCHOLOGICAL STRESS IN CHILDREN WITH NON-PHARMACOLOGICAL

- METHODS OF DENTAL ADMISSION //Archive of Conferences. – 2021. – C. 108-114.
16. Nizomitdin A. I. THERAPEUTIC EFFECT OF IMPROVED ENAMEL SURFACE PREPARATION TECHNIQUE IN THE TREATMENT OF ACUTE INITIAL CARIES OF TEMPORARY TEETH IN CHILDREN //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 11. – C. 440-445.
17. Shavkatovich O. R., Nizomitdin A. I. EFFECTIVENESS OF THE USE OF OSTEOPLASTIC MATERIAL" STIMUL-OSS" IN SAMARKAND //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 11. – C. 612-617.
18. Jamshed S. PREVALENCE OF PHYSIOLOGICAL BITE FORMS IN PEOPLE WITH DIFFERENT FACE TYPES //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 11. – C. 451-454.
19. Nizom S. ASSESSMENT AND COMPARATIVE ANALYSIS OF THE STATE OF THE BUCCAL EPITHELIUM AND ORAL CAVITY HEALTH IN PERSONS HAVING TO SMOK TOBACCO //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 11. – C. 446-450.
20. Nazhmiddinovich S. N. OPTIMIZATION OF ORTHOPEDIC TREATMENT OF DENTAL DEFECTS IN PATIENTS WITH CHRONIC GASTROINTESTINAL DISEASES //Spectrum Journal of Innovation, Reforms and Development. – 2022. – T. 10. – C. 53-58.