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Study of the Importance of Correction of Occlusal Disorders by the Method of Selective Grinding on the Processes of Restoration of Functional Occlusion

Melikuziyev K. K., E. A. Fazliddinova
Kimyo International University in Tashkent Namangan branch

Safarov M. T.
Tashkent State Dental Insitute

Annotation: Stroke is an acute disturbance of the blood supply to the brain , characterized by the sudden (within minutes, hours) appearance of focal and/or cerebral neurological symptoms , which persist for more than 24 hours or lead to the death of the patient in a shorter period of time due to cerebrovascular pathology. This article discusses modern pharmacological drugs for treating the consequences of stroke.

Keywords: stroke, neuroprotection, nootropics, hypothalamic phospholipids.

Treatments, the condition occlusal mutual relation is. At this communication special value has smoothing occlusal mutual relations of a teeth at prosthetics with a leg on implants with the next teeth and a teeth-antagonists in order to avoid the raised focused functional load on implant, leading to disturbance of stability of a zone of bond implant and a surrounding osteal tissue. A necessary condition of dynamic adaptation cortical, and also a spongiform osteal tissue is correct and uniform distribution of a mechanical load at chewing taking into account its size and an orientation. These questions also discussed in given article.

To date, a significant amount of clinical experience has been accumulated in the use of dental implants in prosthetics for various defects of the dental arches. The success of dental prosthetics depends on a number of factors that need to be considered. One of the orthopedic factors influencing the outcome of such treatment is the condition of the occlusal relationships **[6].**

In this regard, the alignment of occlusal relationships between teeth during implant-supported prosthetics with neighboring teeth and antagonists is of particular importance to avoid excessive functional load on the implant, which can lead to instability in the connection between the implant and the surrounding bone tissue.

A necessary condition for the dynamic restructuring of cortical and cancellous bone tissue is the correct and even distribution of mechanical load during chewing, taking into account its magnitude and direction. However, the issue of implant osseointegration and the long-term maintenance of a stable connection zone between the implant and the surrounding bone tissue remains relevant. This zone must be capable of withstanding significant chewing loads, especially in patients with various occlusal disorders that lead to the formation of traumatic nodes **[5,7].**

Objective of the Study**.** To examine the importance of correcting occlusal disorders through selective grinding on the processes of functional occlusion recovery.

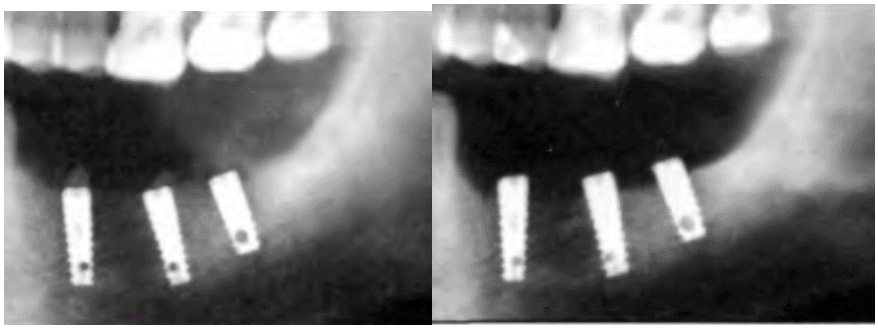
Materials and Methods**.** We conducted clinical and radiological studies at various stages of prosthetics using dental implants in three groups of patients. The first group consisted of 8 patients using bridge prostheses supported by implants, the second group included 10 patients with single artificial crowns on implants, and the third group included 13 patients using metal-ceramic bridge prostheses supported by devitalized teeth and implants. Selective grinding of the occlusal surfaces of dental prostheses was not performed for patients in the third group.

During selective grinding, traumatic cusps were identified using articulating paper. Premature contacts were adjusted on limited areas of enamel, specifically on the slopes of the cusps, to minimize trauma to the superficial enamel layers of the tooth. After each manipulation, the teeth were coated with "Belak-F" fluoride varnish. During the selective grinding period, all patients were advised to brush their teeth twice a day with toothpaste that helps prevent increased enamel sensitivity. After completing selective grinding, the tooth enamel was polished using fluoride-containing pastes to achieve a perfectly smooth surface. This procedure was performed to prevent excessive plaque buildup. We monitored the process of osseointegration of peri-implant bone tissue through targeted radiography **[7,8].**

Results of Research.During the clinical examination of patients, signs of occlusal disorders were identified, specifically traumatic occlusion, which manifested as a more pronounced exposure of the necks and roots of certain teeth and notable tooth mobility of Grade I-II in the areas of occlusal trauma. Uneven deepening of peri-implant pockets was noted in 7 patients, along with the peri-implant groove in 4 patients, determined by probing on the vestibular, oral, mesial, and distal sides of the tooth. Examinations were conducted before the start of selective grinding, at the completion of all grinding stages, and again one month after grinding. Selective grinding was carried out gradually, every 2-3 days, allowing the patient to adapt progressively to the changes in occlusion.

The effectiveness of selective grinding of pronounced cusps on the remaining teeth, as well as the occlusal surfaces of dental prostheses supported by dental implants, was monitored over 1, 2, and 3 months using radiological studies. These studies focused on the degree of bone tissue atrophy in the area of dental implants and the radiodensity of bone tissue around the implants.

According to radiographic data from Groups I and II after selective grinding of the occlusal surfaces, one month after implant placement, newly formed bone growth following the contours of the implant threads was observed. Signs of inflammation were absent. Selective grinding was continuously performed according to the mentioned technique during the first week of wearing dental prostheses. In images taken three months later, the bone tissue showed sufficient density and enveloped the threaded part of the implant. After six months, it was found that bone tissue had formed around the implants, fully encasing them. Clinical studies of dental implantation with immediate and early functional loading confirmed the effectiveness of this method.



a **b**

Pic. №1. Radiography of the M. Patient , 45 y. o . in the field of implants in the absence of functional load on implants in dynamics:

A *- is a fragment of the control orthopantomogram 2 months after the first stage of implantation. The intraosseous elements are surrounded by bone tissue without signs of resorption;*

B *- is a fragment of the control orthopantomogram of the same patient 2 years after the first stage of implantation. In the area of implants, the height of the shadow of the bone tissue of the cortical plate of the lower jaw is evenly reduced, as well as the X-ray optical density in the area of implants is reduced. The patient did not show up for the second stage of the operation at the appointed time.*

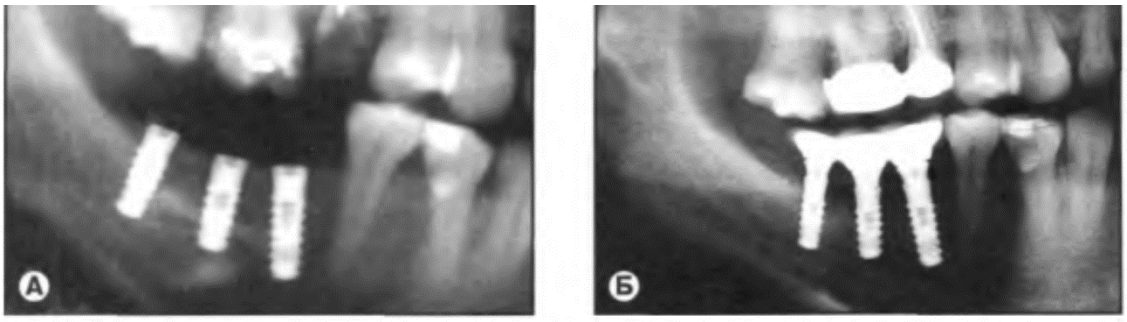
A follow-up radiological examination conducted two years after the placement of endosseous elements clearly showed that the absence of functional load on the implants and surrounding bone tissue led to bone atrophy and partial disorganization of the primary structure of the "implant-bone" biomechanical system.

According to orthopantomography data for patients in Group 1, radiological monitoring from 1 to 3 months revealed gradual new bone formation on the implant surface, and from 6 to 12 months, the bone tissue regeneration around and on the implant surface continued, although less intensively than in the first 3 months. This is because the formation of mature bone trabeculae was completed by the sixth month.

For patients in Group 2, dynamic radiological monitoring showed no differences in the condition of the bone tissue around the implants at all time points.

Pic №2. Radiography of the patient T. 46 y.o. in the area of implants loaded with bridges after selective grinding.

In patients of Group 3, dynamic radiological monitoring in the early stages and one month later showed a decrease in the height of the cortical plate bone shadow of the mandible, as well as a reduction in radiodensity around the implants. Clinically, this was manifested by swelling and edema of the peri-implant groove, its deepening, and bleeding. A more detailed radiological study of patients in this group revealed a persistent and progressive loss of alveolar bone in the peri-implant area at the initial stage. By the third month of monitoring, radiological observations indicated a delay in the osseointegration processes in the implant-bone zone, specifically the formation of a distinctly outlined fibrous tissue around the implants.



Pic№3. Radiography of the patient C.,35 y. o. in the areas of implants due to inadequate functional load

A *- a fragment of an orthopantomogram taken 3 months after the placement of two-stage screw implants. The endosseous elements are surrounded by bone tissue without radiologically significant signs of resorption.*

B *- a fragment of the same patient's orthopantomogram 1.5 years after prosthetics. Bone resorption is observed around the implants, with the formation of bone pockets 1-2 mm deep and a reduction in radiodensity around the implants.*

Our comparative assessment of radiological indicators in the peri-implant area of Group 3 patients revealed the necessity and justification for functional unloading of the implant-prosthesis system by selectively grinding the occlusal surfaces of both dental prostheses and antagonist teeth. Additionally, the radiologically evident delay in osseointegration processes observed in our study supports the well-

known opinion of several researchers regarding the close interrelationship between dental implant integration and occlusal alignment of the dental arches. Due to functional overload in the implant-prosthesis-bone area, disorganization and resorption of bone tissue structures begin, primarily affecting trabeculae and forming cavities that are subsequently filled with fibrous connective tissue **[8,9].**

Thus, timely and targeted selective grinding can prevent metabolic, functional, and structural changes in the alveolar bone in the peri-implant area, significantly improving the prognosis of orthopedic treatment for patients with dental implants.

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