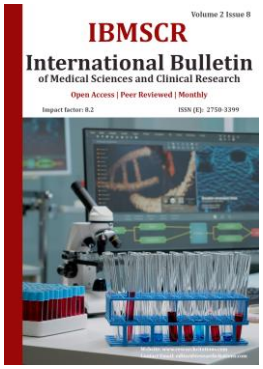

TREATMENT OF PATIENTS WITH EDENTULOUS LOWER JAW REMOVABLE LAMINAR DENTURES RELYING ON DENTAL IMPLANTS

Atahanov Alisher Vohobjonovich
Associate professor:
Andijan State Medical institute.
https://doi.org/10.5281/zenodo.7952092

Annotation: A method of treating fully edentulous mandible with removable designs of dentures relying on dental implants is described. Data from the literature over the past 10 years is studied. After learning deficiencies a new method for fixing the total denture mandible implant is proposed. This method will increase the effectiveness of treatment fully edentulous mandible.

Keywords: edentulous lower jaw, dental implants, full removable laminar dentures, girder construction.

One of the urgent problems of modern dentistry is the restoration of functional and aesthetic parameters of the dentoalveolar system with complete loss of teeth. As before, the most common method of treating complete edentulous mandible is the manufacture of complete removable lamellar dentures of the “traditional” fixation system. Naturally, most patients are not satisfied with the quality of such treatment, and the use of adhesives and other mechanical fixation methods does not improve the “quality of life”. Every year, the number of patients who need high-quality fixation of removable dentures is growing in the clinics of orthopedic dentistry. This has a huge impact on the quality of life and social adaptation of a person. In the modern world, more and more attention is paid to a healthy lifestyle and a healthy appearance plays an important role. Loss of teeth leads not only to functional changes, changes in appearance, but also violates the psychological status of a person. At the same time, the restoration of dentition with ineffective dentures leads to a deterioration in the psychological status, a decrease in self-esteem.

The use of dental implants for fixing removable dentures increases chewing efficiency by 35% compared to traditional removable prosthetics, and also allows almost complete restoration of the motor and tonic activity of the masticatory muscles. The functional activity of the masticatory muscles of patients with complete loss of teeth increases when using removable dentures based on implants compared to traditional lamellar dentures. Physiological adaptation of masticatory muscles to complete prostheses on implants is accelerated twice, and masticatory efficiency is restored to 72.8%. The purpose of the study: to develop a new method for fixing a complete removable prosthesis of the lower jaw based on dental implants. The current methods of fixation of complete removable laminar dentures based on dental implants were studied. Literature data for the last 10 years have been studied and analyzed.

Based on these data, the following conclusions were drawn by the authors.

1. The methods used in practice for fixing removable dentures based on dental implants are imperfect.

2. Dental implants are fixed supporting elements, unlike the mucous membrane, which, depending on individual characteristics, has a different degree of compliance. This factor is responsible for a large number of complications resulting from the treatment of complete adentia with removable dentures based on dental implants.

3. The complexity of the relocation, and in some ways the impossibility of its implementation.

Also, the theoretical justifications for the use of removable structures of dentures based on dental implants, the principles of constructing mathematical models in the system "removable plate prosthesis - dental implant - bone" were studied, however, the calculations were made without taking into account the degree of compliance of the mucous membrane and the degree of rigidity of the fixing element [5] . Accordingly, it is necessary to calculate the degree of displacement of the removable prosthesis during chewing movements. During the functioning of the prosthesis, atrophy of the bone tissue in the end sections of the lower jaw will continue, which will lead to an increase in the range of motion of the removable prosthesis and the degree of impact of the fixing element of the prosthesis on the dental implant. A study was conducted on the comparative degree of atrophy of the distal mandible over a five-year period. When using complete removable dentures, atrophy was 1.63 mm, and when using conditionally removable dentures based on implants, it was 0.69 mm. This proves the biological feasibility of using beam structures based on implants. Bone loss occurs during the first year after tooth loss 10 times faster than in subsequent years. During the first year there is a loss of 25% of bone volume, and in the next three years - 40-60% . The dynamics of the decrease in the vertical size of the lower jaw is as follows: during the first year after prosthetics, it is 0.2-0.8 mm, and in the future - no more than 0.05-0.2 mm per year.

This method of fixation allows you to install the prosthesis immediately after the operation, to ensure constant tight contact between the surface of the prosthesis and the prosthetic bed. The fixation itself is not rigid, but elastic, which provides less stress on dental implants. When using this method of fixation, dental implants do not carry a support load, but perform a holding function. The developed method provides reliable fixation of removable dentures based on dental implants, which will improve the quality of life of patients. This method is easy to manufacture and does not require complex training in working with dental implants compared to other methods.

Prolonged wearing of a complete removable denture leads to atrophy of the alveolar process, since the design rests directly on soft tissues and bone. As a result, there is a decrease in the area of the prosthetic bed, especially pronounced in the lower jaw. A decrease in the height of the alveolar process, a small vestibule of the oral cavity, an active motor function of the tongue and muscles of the mouth lead to the dropping of the prosthesis. After relocation or the manufacture of a new prosthesis, the volume of the base increases markedly, which causes possible inconvenience to the patient - a gag reflex, difficulty in chewing food, talking, facial expressions are limited, the patient is afraid of “losing” the prosthesis in a public place. The patient turns to an orthopedist to resolve the issue of implantation in order to better fix a removable prosthesis or completely abandon such a design. In patients with completely edentulous jaws, the loss of a significant volume of the alveolar process, combined with anatomical features, is a problem in planning and performing implantation. Patients with relatively preserved alveolar 4-6 implants are installed by the lar process with the manufacture of a complete prosthesis, which is fixed with screw or cement fixation. Modern

surgical methods of guided tissue regeneration make it possible to create conditions for the correct positioning and installation of dental implants. These techniques are not always possible to apply due to the somatic status of the patient, severe surgical trauma, and the impossibility of performing the operation on an outpatient basis. Not all patients are ready for possible postoperative complications, long periods of rehabilitation, and an increase in the cost of treatment.

A special group is occupied by patients with complete loss of teeth in the lower jaw, where the distal sections are largely atrophied, and the mandibular canal is located in close proximity to the surface of the preserved bone. One possible solution is the transposition of n. alveolaris inferior [5] or vertical bone tissue augmentation, but both techniques are technically difficult to perform and require excellent manual skills and operator experience. Therefore, in most clinical cases, the frontal area of the lower jaw between the foramen mentale is considered for implantation. Implants in the amount of 2-4 are installed between the holes in an arc, then combined with a beam or act as independent supports for beam or telescopic fixation of a complete removable prosthesis, respectively. The basis of a removable prosthesis replenishes the lost volume of soft tissues and bones, serves as support for facial tissues. The prosthesis compensates for the function, aesthetics of the chewing and speech apparatus, tightly fixing on integrated supports - dental implants. Performing hygiene procedures at home is not difficult, which distinguishes this type of construction from similar non-removable prostheses.

When planning implant positions, one should take into account not only the available bone volume, but mainly the position of the prosthesis on the prosthetic bed in the oral cavity. Changes in the anatomical relief can greatly distort the picture for the implant dentist. In this case, mandatory treatment planning is required together with the prosthodontist and dental technician, since the incorrect position of the implants, even in a well-preserved bone volume, can significantly complicate the prosthetic and technical stages.

References:

1. Kola M. Z., Shah A. H., Khalil H. S., Rabah A. M. N. et al. Surgical Templates for Dental Implant Positioning; Current Knowledge and Clinical Perspectives. Niger J. Surg, 2015, vol. 21, no. 1, pp. 1-5.

2. Ryakhovsky, A. N. Options for the use of guide templates at the surgical stage of dental implantation / A. N. Ryakhovsky, S. V. Mikhaskov // Panorama of Orthopedic Dentistry. - 2007. - No. 1. - S. 6-11.

3. Zholudev S.E., Nersesyan P.M., Zholudev D.S., Remov A.Yu. The use of 3D planning and a surgical template for the prevention of improper installation of cylindrical implants in the jaw bone // Problems of Dentistry. - 2016. - No. 2. - S. 79-85.

4. Borisov R. Radiological templates and CAD/CAM surgical guides. A literature review. Journal of IMAB - Annual Proceeding (Scientific Papers), 2016, vol. 22, iss. 3, pp. 1285-1295.

5. Kola M. Z., Shah A. H., Khalil H. S., Rabah A. M., Harby N. M., Sabra S.A. et al. Surgical templates for dental implant positioning; current knowledge and clinical perspectives. Niger J. Surg, 2015, vol. 21, no. 1, pp. 1-5.