RUSSIAN BONE BLOCKS (RBB) CUSTOMIZED 3D-BONE BLOCKS

Russian bone blocks RBB is a unique technology for restoring jaw bone volume for subsequent prosthetics of teeth on implants. Accurate 3D-based computational planning - Computed tomography, high-precision manufacturing of an individual implant, complete patient management and clinical support from user-doctors at all stages of patient rehabilitation. The blocks are made on a special CAD/CAM machine according to the original method based on the Samara Bank of Fabrics and the Institute of Innovative Development of Samara State Medical University. The author and rightholder of technology LLC «LYOSELL".

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"We live in an age of personalized medicine, when any treatment is chosen on the basis of the maximum compliance with the patient's profile and status, taking into account the large list of individual characteristics and characteristics to achieve the highest possible clinical outcome that is stable in the long term. The use of individually made bone bioimplants for the rehabilitation of patients with adentia can significantly reduce the risk of complications, reduce the time of surgical manipulations in the chair, predict and control the result of treatment with high accuracy and most importantly: return the comfort of eating and smile freedom to the patient".

ADVANTAGES OF RBB (RUSSIAN BONE BLOCKS) TECHNOLOGY

1. High accuracy of the models and the manufactured product - a perfect fit of the block to the jaw and an increase in the conductive properties of the bone bio-graft.
2. The relatively low cost of raw materials and the technology of obtaining materials "Lioplast-S" ®, which has been worked out for 36 years. Reducing the cost of individualization. 3. Complete and detailed documentation of each clinical case. Saving all data on the server and the ability to access 24 hours: models, photos, pictures.
4. Step-by-step support of the doctor and the patient from the moment of the beginning of the planning to the analysis of the remote results after the end of the prosthetics of the teeth on the implants.
5. Controlled predicted step-by-step surgical technique using growth factors (regeneration inducers) and micro-autoplasty of the alveolar process. 6. High strength of the block due to the choice of the trabecular donor zone (head of the thigh) for the stability of the bio-implant until the time of complete replacement with its own bone.
7. The absence of analogues in Russia and in the world in the full range of application of the clinical and technological complex. The original algorithm of manufacturing and customization.
8. The possibility of using individual bioimplants in other areas of medicine: oncosurgery, traumatology and orthopedics, human cell surgery, ENT surgery.
9. Detailed informational support for medical users and patients at all stages of treatment: surgical techniques, instructions, prescriptions and recommendations. 10. Individual training of doctors, counseling for each clinical case, support for doctors in the event of complications. Warranty program.
11. Patent and scientific base of application of materials "Lioplast-S" ® in various types of bone and connective tissue surgery confirmed by clinical experience.
12. Histo-morphological confirmation of the clinical result at the stage of implant installation (biopsy samples are taken for analysis). 100% proof.
13. Convenient for the doctor remote planning of the clinical case and surgery. Operational control and making changes to the working models in real time. 14. The gentle surgical protocol reduces the operation time by an average of 2 times. Lack of autoblock intake, simple fixation of the block on the alveolar process.
15. Minimizing the risk of complications, the controlled process of replacing the block with the patient's own tissues in the area of prosthetics on implants.

In order to obtain a good clinical result, today, in 100% of cases, we perform surgical preparation of the operation area for solving the following tasks affecting complications and the percentage of block loss in volume in the process of replacing with own tissues: creation of the vestibule of the oral cavity, excision of mucous and muscular cords, creation of an attached gingiva , thickening of the gum biotype, stimulation of bone remodeling and regeneration in the area of future operation.

SURGICAL PREPARATION

1. Cut design. An incision is made in the middle of the alveolar process to form a full-thickness mucoperiosteal flap (SNL).
2. Exfoliation of the SNL is vestibular-oral. Recommended by the acute method (scalpel) to save the entire volume of the periosteum on the SNL.
3. Partial decorticization of the receiving bed. Removal of a part of a closing compact plate by a mill for active vascularization from the base.
4. Scarification over the entire surface of the contact zone. Damage to deep compact bone cells to stimulate cellular regeneration reactions.
5. Drilling to a depth of 5 mm with a diameter of 0.8-1.2 mm through a compact bone. Damage to the cells of the spongy bone to stimulate cellular reactions.
6. Collection of spongy bone chips and placement on the alveolar. Runs at speeds up to 100 rpm without cooling. Cells with high osteoprogenerative potential.
7. Fixation of the collagen membrane (dura mater) with sutures along the perimeter is subperiostal.
8. Creating a volume of attached gums at the same time as thickening of the gum biotype.
9. Simple single interrupted sutures or a continuous interrupted suture from the distal to the medial edge for firm fixation of the tissue and rapid healing of the wound.
10. Clamping cruciform subperiosteal-subepithelial suture. Tight compression of the SNL to the TMO membrane (dura mater) and the alveolar process.
11. The waiting period before the installation of an individual implant is 3 months. During this time, the volume of new fabrics of excellent quality and adequate volume is formed.

SURGICAL METHOD OF INSTALLATION OF AN INDIVIDUAL BONE BLOCK

1. Cut design. An incision is made at the base of the alveolar just below the zone of the attached gum to form a full-pledged SNL.
2. The formation of a common SNL acute method. If possible, the exfoliation of tissues is performed with a scalpel to maintain the maximum volume of the periosteum on the SNL.
3. Exfoliation by the blunt method (raspator) and checking the mobility of the SNL. At the edges, the presence of mucus-muscular cords is assessed.
4. Adaptation of an individual bone block and drilling holes through it for fixing screws. Assessment of the visibility of holes on the surface of the alveolar. 5. Partial decorticization of the receiving bed. Removal of a part of a closing compact plate by a mill for active vascularization from the base.
6. Scarification over the entire surface of the contact zone. Damage to deep compact bone cells to stimulate cellular regeneration reactions.
7. Drilling to a depth of 5 mm with a drill diameter of 0.8-1.2 mm through a compact bone. Damage to the cells of the spongy bone to stimulate cellular reactions.
8. Collection of spongy bone chips and placement on the alveolar. Runs at speeds up to 100 rpm without cooling. Cells with high osteoprogenerative potential. 9. Fixing the prepared bone block with RBB screws. The exact fit of the block to the surface of the alveolar controls the placement of the bioimplant in a single position.
10. Treatment of bone block block RBB vestibular. Smearing into the volume of the block cells of the cancellous bone and demineralized powder compact bone.
11. Adaptation of the membrane (if necessary) vestibular. Fixation with stitches or without fixation. The use of the membrane depends on the presence and volume of the periosteum on the SNL.
12. Evaluation of tissue mobility. Sewing the edges of the flaps without tension. The fixing P-shaped seams. Mobilization of tissues by splitting SNL using an acute method (scalpel). 13. Simple knotted U-shaped seam. Information and comparison of the edges of the flaps.
14. Subperiosteal suture at the base of the SNL. Eliminates flap mobility.
15. Continuous knotted suture. Additional single seams if necessary.
16. Presser cruciate subperiosteal-subepithelial suture. Tight pressing of the SNL to the surface of the block (to the TMO membrane) and to the alveolar process.

PHARMACOTHERAPEUTIC SUPPORT AND PATIENT CARE

1. The wound is richly lubricated with chlorhexdin gel 0.2%. The patient is also given a gel for topical use, as well as a paste and a rinse of healing action.
2. The patient is given 7 days before the operation and within 3 weeks after Trental® 100 mg is administered in 1 tab. 2-3 times a day.
3. Additionally Actovegin is appointed in TB. 1 TB each. 3 times a day before meals. Also 7 days before surgery and 3 weeks after surgery.
4. Stitches are removed after 3 weeks. From this day, Osteogenon is administered for 2 months, 1-2 TB 2 times a day. 5. Prior to removal of sutures, a physiotherapeutic laser for 3 weeks is recommended for the patient.
6. Also on the day of surgery can be administered Prednisolone in tb 5 mg. 2 tb once in the morning at the discretion of the attending physician.
7. On the day of surgery and for 5 days after surgery, Klacid CP 500 mg 2 times a day is prescribed.
8. To reduce and quickly eliminate edema, antihistamines are prescribed on the day of surgery and for 3-5 days after surgery. Zyrtec, Erius, Tsetrin, Kestin.

When taking medications and / or monitoring with other specialists - coordinate all appointments with your doctor.

WORKFLOW OF CUSTOMIZED BLOCKS RBB AND BENEFITS

1. Registration of a new user on the site

A simple, convenient procedure for tracking all clinical cases and saving case data: 3D models, pictures, clinical case design for quick access and clinical analysis of the result.

2. Creating a new clinical case on the site

Indication of the positions and sizes of implants in the area where it is necessary to restore the volume of tissue, accounting for oncoming teeth. All information is available to the doctor, engineer, clinical consultant and project manager.

3. Creating models of the jaw, implants and block

Production of an individual block after two consecutive approvals in the form, volume and geometry of the product. Accounting for oncoming teeth and patient's individual anatomy, constitution, condition and quality of bone and gum tissues.

4. Planning the operation and installation of the unit

Step-by-step surgical technique taking into account the patient's regenerative potential. If necessary, surgical preparation to create the vestibule of the oral cavity, thickening of the gum biotype, the formation of an attached gingiva, stimulation of regeneration.

5. To-, intra- and postoperative patient support

Clear detailed instructions for the patient, prescription of drugs, accurate recommendations before the operation, during and during the postoperative period. Prevention and control of complications, relief of complications if necessary.

6. Clinical and advisory support of a doctor

Selection of patients for rehabilitation, the need for prior training. Joint planning of the clinical case, the choice of design surgery and treatment tactics. Photo protocol of operation. Joint analysis of the result.

7. Training of doctors in surgical skills

Group and individual training in oral surgery: bone augmentation, targeted tissue regeneration, muco-gingival surgery, periodontology. Training consultation and planning of surgical treatment, patient management.

8. Photodiagnosis of patients during and after surgery

Assessment of the state of soft tissue and the presence of cords. Mandatory photofixation of the surgical protocol for monitoring the implementation and clinical analysis of the result. Creating a database of cases of a doctor-user for professional use.

9. Analysis of the clinical outcome of the patient

Creating 3D models of the result and comparing the original picture and the result of treatment at different terms. Qualitative and quantitative analysis of the reconstructed volume of bone and soft gum tissue. Evidence base for evaluating the effectiveness of treatment.

10. Installing implants in the newly formed bone

Biopsy sampling for histological analysis at the stage of implant installation to assess the condition and quality of the jaw bone in the area of operation. Excellent fixation of implants in the new bone, a sufficient amount of soft tissue in the area of implants.

11. Prosthetics on implants

Full rehabilitation of the patient takes an average of 7-8-12 months depending on the phenotypic parameters (constitution, type and volume of the bone, biotype and volume of soft tissues), the parameters of the defect (size, localization) and the need for surgical preparation.

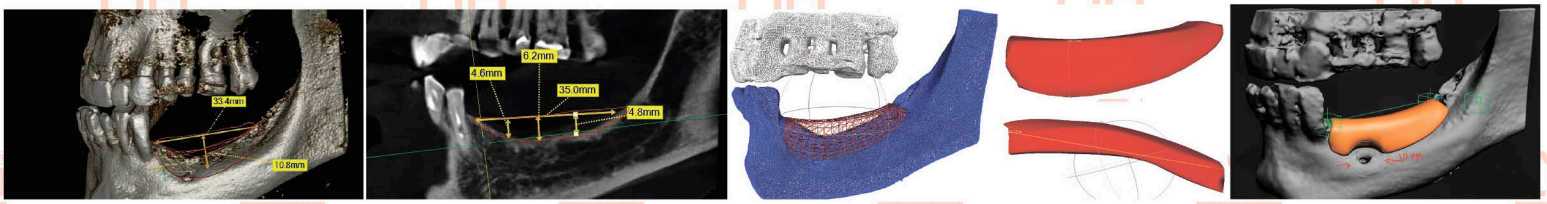
12. Pharmacotherapeutic patient support

A complete, accurate, step-by-step scheme for prescribing drugs of various actions to activate regenerative potentials, improve the state of the tissues and minimize complications in the postoperative period, for excellent quality of the new bone.

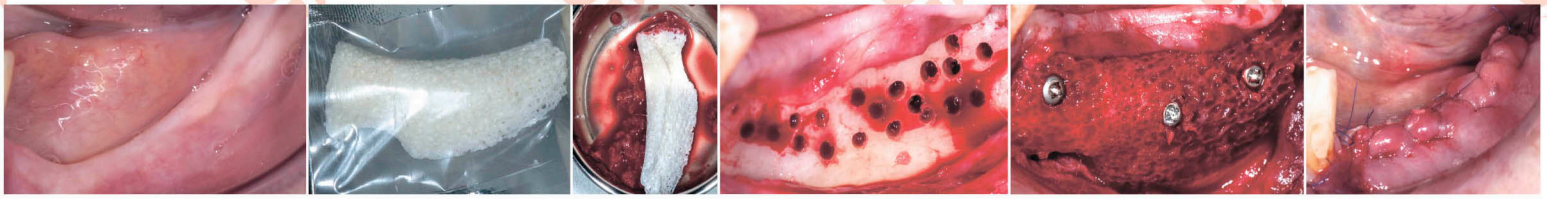
СДЕЛАНО В РОССИИ

CLINICAL EXAMPLE OF USING INDIVIDUAL RBB BIOIMPLANT

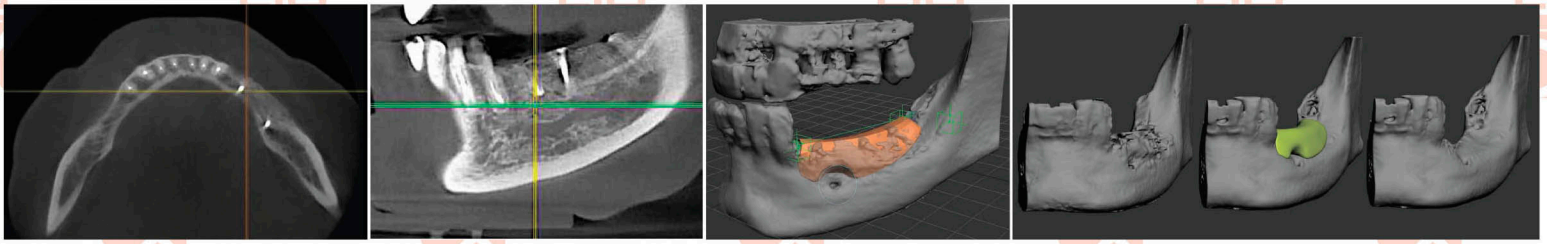
1. Treatment planning and modeling of an individual bone block



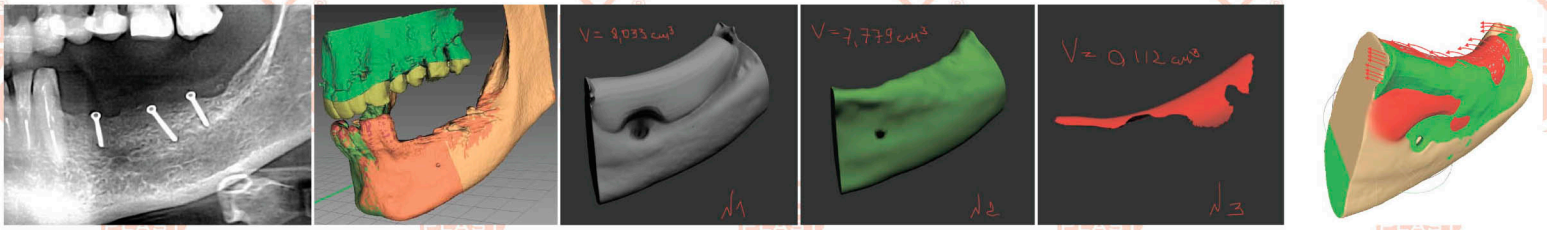
2. The operation of the installation of bone bioimplant RBB



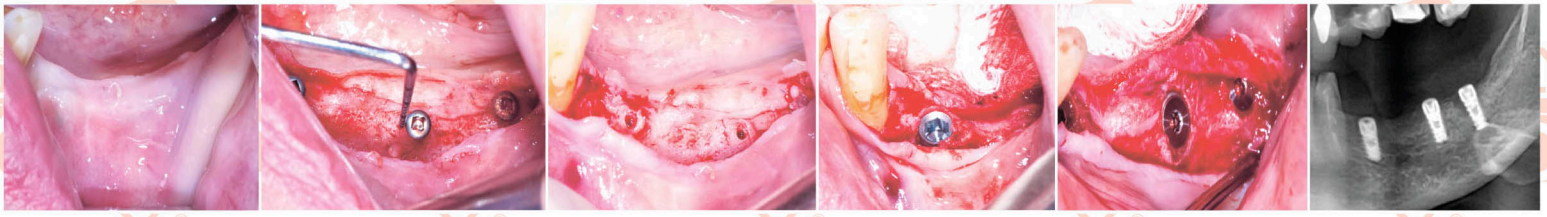
3. Result 4 months after surgery



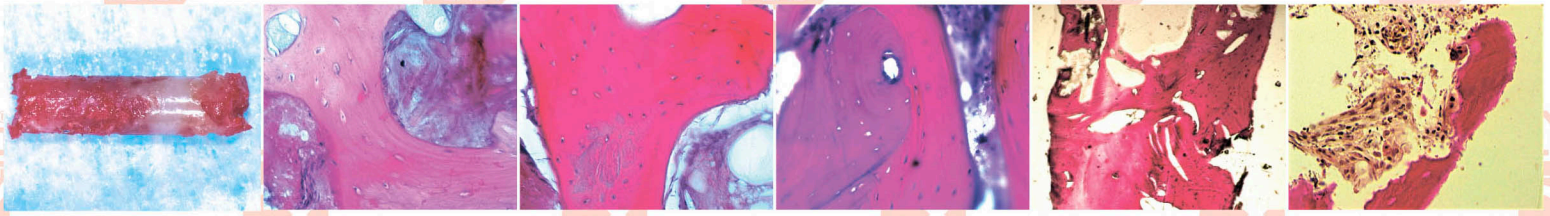
4. Result 12 months after surgery



5. Installing implants in the RBB block area



6. Analysis of the result of histological preparations



7. Prosthetics on implants

СДЕЛАНО В РОССИИ

CUSTOMIZED CHOICE OF TREATMENT FOR DIRECT REGENERATION. FOR ALL PATIENTS

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