Comprehensive Rehabilitation of Patients After Bone Reconstructive Surgery in the Maxillofacial Region

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ABSTRACT

The article is devoted to the rehabilitation of patients with congenital and acquired anomalies and deformities in the maxillofacial region. The results of treatment of 216 patients were analyzed. Retrospectively, the long-term results of treatment for up to 10 years were traced. Based on many years of clinical experience, a comprehensive rehabilitation scheme has been developed and introduced into clinical practice for patients undergoing bone-plastic and bone-reconstructive operations in the maxillofacial region, which allows to obtain good anatomical, functional and aesthetic treatment results. The results of rehabilitation of patients depended on the severity of the disease (one- or two-sided joint lesion), the age of the patient, and the method of surgical treatment, the effectiveness of therapeutic and preventive measures aimed at optimizing the longitudinal growth of the mandible.

Keywords: Rehabilitation, bone grafting, orthodontic and orthopedic treatment.

Introduction. Rehabilitation of patients with anomalies and deformities of the face and jaw is an urgent task of dentistry, since any disease or injury to the maxillofacial is observed along with a pronounced violation of the functions of chewing, swallowing, breathing, speech, facial aesthetics. The consequences of diseases and injuries require long-term comprehensive rehabilitation measures by a maxillofacial surgeon, orthodontist, speech therapist, orthopedist, physiotherapist, therapist-dentist, otolaryngologist, ophthalmologist, neurologist.

The aim of the study: orthodontic treatment allows you to create optimal conditions for the final stage of rehabilitation of patients – to replace dental and alveolar tumor defects for a complete restoration of the effectiveness and aesthetics of chewing.

Research materials and methods. For 10 years, 216 patients aged 2 to 34 years who underwent various bone-plastic and bone-reconstructive operations in the maxillofacial area were under our treatment and supervision. The duration of patient observation was from 6 months to 10 years. All patients at the rehabilitation stage underwent extensive examinations using clinical, anthropometric, radiological, functional and statistical methods. Depending on the type of morphofunctional disorders, the nature and scope of rehabilitation measures, all patients were divided into 3 groups.

Results: Group 1 included 95 patients who underwent bone plastic under the conditions in which the condil process was preserved.

In the second control group, there were 64 patients who performed bone plastic work of the lower jaw without a condyl process.

The third control group was attended by 57 patients with congenital and acquired abnormalities and deformities of the jaws, who needed surgical treatment, including jaw osteotomy with performing a defect bone transplant.

Based on clinical and Radiological observations of patients, we consider it necessary to distinguish 3 periods of rehabilitation for children and adolescents during various osteoplastic and reconstructive operations in the maxillofacial region.

The first period after surgery begins with operational intervention and ends with bone bed transplant consolidation. The duration of this period was 1-1.5 months.

The second period is the replacement of the transplant with a bone regenerator. The duration of this period, depending on the nature of the receiving bone bed and the type of transplant, was 8-18 months.

The third period is modeling, the formation of a regenerator of the jaw. Its duration was from 2 to 10 years and ended with the end of the growth of the patient's facial skeleton.

Based on clinical experience, we have developed and introduced into clinical practice a comprehensive rehabilitation scheme, which is carried out by patients with osteoplastic and bone reconstructive operations. The volume, sequence and duration of treatment and preventive measures depended on the dispensary Observation Group and the rehabilitation period.

During the first observation period, prevention of suppuration was carried out, conditions for reparative regeneration were created. To immobilize the lower jaw, tires, caps, retainers were used. Those who were excluded-were patients whose bone fragments were tightly fixed with Nickelodeon-titanium Scoobs or titanium miniplastins. All patients underwent electrical stimulation of the chewing muscles during immobilization.

During the second dispensary, attention was paid to the Prevention of late suppuration. For this purpose, a course of antibacterial therapy was carried out. According to the instruction, low-frequency electrical stimulation was carried out. To replace defects in the dental cavity, plastic prostheses were prepared, which were taken with one or two replacements in patients of the first dispensary group. For patients in the second dispensary group, block devices with separating bite pads were prepared for fixing the lower jaw in a position marked by hypercorrection. During the second dispensary, a correction or complete replacement of the prosthesis was carried out.

During the third dispensary period, according to the generally accepted scheme, patients were prescribed oral sanasia, primary prevention of caries and paradont diseases, according to the instructions were prescribed physiotherapy, myogymnastics, massage and electrical stimulation.

During the temporary prikus period – once a year, during the period of the exchange prikus – once every six months, during the period of the permanent prikus – once every two years, removable plastic prostheses were made with replacement. Orthodontic treatment was carried out according to the instructions. In patients of the second dispensary group, orthodontic treatment was carried out, aimed at normalizing the functions of the prikus, Chuck-lower jaw joint, as well as chewing and facial muscles. With the help of devices with a functional effect, we tried to form a dentoalveolar stretch on the side of the operation to stimulate the growth of the lower jaw lengthwise.

In the ineffectiveness of conservative rehabilitation measures and the periodic delay in the growth of the lower jawregenerator, compression-distraction osteosynthesis or repeated bone-plastic operations were performed.

Patients in the third dispensary group needed pre-operatic orthodontic treatment using a Breket system aimed at normalizing the shape and size of dentoalveolar arcs, due to which it was possible to obtain fissur-fold contacts in a constructive prikus at the time of operation.

In a joint consultation with the face-jaw surgeon at the planning stage, computer modeling of the lateral telerentgenogram projection and,

together with it, surgical intervention on the patient's profile photo were carried out. When simultaneous surgery was performed on the upper and lower jaws, a surgical Cappa was prepared to achieve the correct location of the rows of teeth and jaws and stabilize them in the articulator.

During the third dispensary period, orthodontic treatment was carried out aimed at achieving functional and stable occlusion.

In the first dispensary group, 91 (95.8%) patients in the short term after surgical treatment recorded good morphofunctional and aesthetic results of treatment, while 4 (4.2%) reported satisfactory results.

In the second group of dispensaries, 49 (76.5%) patients had good results and 15 (23.5%) patients had satisfactory results.

In the third group of dispensaries, treatment ended with a good result in 46 (80.7%) patients, with a satisfactory result in 11 (19.3%).

Conclusion. Thus, the results of our research have shown that the comprehensive rehabilitation of patients in bone-plastic and bone reconstructive operations performed on the face and skull is more effective than in the Observation Group, which does not have a second – condil process, while maintaining the condil process in the first and third dispensary groups. The results of rehabilitation of patients of the second group depend on the severity of the disease (damage to one or two-sided joints), the age of the patient, the effectiveness of therapeutic and preventive measures aimed at optimizing the growth of the joint along the length of the lower jaw to the method of surgical treatment.

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