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PREVENTION OF RELAPSES AFTER OSTEOSYNTHESIS OF THE JAW FOR FRACTURES

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Annotation: In order to increase the effectiveness of treatment of mandibular fractures was improved method of prevention of complications of consolidation in terms of structural and metabolic changes in bone tissue.

Key words: Fractures of the mandible, consolidation, structural and metabolic changes in bone.

We examined patients with mandibular fractures with structural and metabolic changes in bone tissue. Conducted clinical, biochemical features, radiographic studies. It is established that the use of spectrocalometery study of hard tissues of teeth and the mucous membrane of the alveolar bone in the fracture of the mandible allows the dynamics to assess the depth and nature of the resorption and proliferative changes in the area of damaged bone tissue. A study of indicators of antioxidant system (catalase) and lipid peroxidation (malondialdehyde) in oral fluid, along with indicators of active inflammation (elastase and protein) can detect a group of patients who are predisposed to the development of complications of consolidation. Based on the results of experimental and clinical studies improved methods of complex treatment of patients with fractures of the mandible on the background of structural and functional changes of bone tissue due to the combined use of calcium and zinc. Relapses occur against the background of decreased immunity, exacerbation of chronic diseases, exhaustion, and the accumulation of large amounts of pus as a result of the closure of the fistula tract. When osteomyelitis worsens, the patient experiences renewed pain, symptoms of intoxication, and the release of pus through the skin.

Despite the observed low percentage of infectious complications of fracture consolidation when using modern fixation methods, they still have to be encountered. According to many authors, today, for the prevention of purulent-inflammatory complications of injuries, antibacterial drugs (antibiotics) are unreasonably widely used, sometimes replacing the natural immunity and nonspecific defense of the body. Many authors point out the need for a natural load on the immune system and the doubtfulness of further progress of antibacterial therapy. Apparently, at present, a situation has fully matured when it is necessary to intensify the implementation of techniques that do not oppress or replace, but naturally stimulate the body's defense systems (local, general, specific and nonspecific). In addition, it must be taken into account that in response to a fracture there is an increased release of calcium and phosphorus from the bone, both locally and systemically. A decrease in the mineral saturation of bone tissue in the area of the defect is facilitated by the presence of local acidosis, which arose as a result of an acute inflammatory process, both in the lower jaw itself and in the tissues surrounding it. All this, against the background of bacterial aggression, as well as metabolic and microcirculatory disorders in the damaged bone, prevents its structural and functional restoration, complicates the treatment of this pathology and lengthens the rehabilitation period for patients.

Thus, the priority directions in the prevention of complications of fracture consolidation are the study of the features of consolidation mechanisms in patients with structural and functional changes in bone tissue, the identification of possible ways to correct the identified disorders before the development of clinical manifestations of complications. Improving the method of complex treatment of patients with fractures of the lower jaw, including methods for objective

assessment of the background condition of bone tissue and the early use of drug correction of identified disorders.

Therapeutic measures were carried out in the following sequence. Immediately after the patient was admitted to the hospital, after an X-ray examination, wire splints made of orthodontic wire with elastic traction were applied, the issue of removing a tooth located in the fracture gap was decided, and indications for antibacterial therapy were determined. After treatment, a control radiography was carried out, the purpose of which was to determine the usefulness of the reposition of bone fragments. With complete reposition of bone fragments, treatment was limited to the use of double-jaw splints. In case of incomplete reposition of bone fragments, additional correction of their position was carried out using a combined method. When the orthopedic method of repositioning bone fragments was unsuccessful in patients with significant displacement, osteosynthesis was used, which involved the use of bone plates through intraoral or extraoral access, depending on the location of the fracture gap, with simultaneous manual reposition of bone fragments.

It is well known that calcium and zinc are the most important stimulators of osteogenesis. However, there are studies indicating a certain antagonism of these elements, in particular, at the stage of absorption in the gastrointestinal tract. The antagonism of these two vital elements can be eliminated by using them in an optimal ratio and in the presence of a chelator, which is able to form complexes with each of the elements and thereby ensure their facilitated transport through the intestinal wall. The most harmless chelator is citric acid /or its salts/, so a complex consisting of calcium citrate, zinc citrate and citric acid in the ratio was used. The data obtained indicate a synergistic effect on the bone tissue of the lower jaw after fracture of calcium and zinc salts in the presence of the natural chelator citric acid.

All patients were divided into 4 groups of 5-6 people, depending on the drug used in addition to the basic treatment. The drugcalcium was calcium citrate ("Calcite"), containing 100 mg of calcium in one tablet. Patients took 5 tablets per day. The zinc preparation was Zincteral ("RoNa"), containing 200 mg of zinc sulfate in one tablet. Patients received 2 tablets of the drug per day. One group of patients, in addition to the basic treatment, received a combination of calcium and zinc preparations in the above dosages. Treatment lasted three weeks (20 days), after which saliva was collected from patients again for biochemical research. 10 healthy individuals of both sexes aged 20-45 years were used as controls.

Perforation or rupture of the mucous membrane of the hard palate with sharp instruments during segmental osteotomy or simultaneous expansion of the upper jaw leads to the formation of a nasal fistula. Various symptoms of TMJ dysfunction may occur after orthognathic surgery has been performed, ranging from intra-articular noise, pain, clicking and crepitus to resorption of the condylar processes. The unsatisfactory position of the condylar processes is characterized by an immediate or late change in their position in the articular fossa after surgical movement of the jaws and rigid bicortical fixation of bone fragments of the lower jaw, which leads to unsatisfactory changes in occlusion. Also after surgery there are such complications as neurosensory deficit as a result of nerve injury aesthetic complications in the form of postoperative deformations of the jaws or wider wings of the nose [8], the development of relapse, traumatic osteomyelitis of the jaws and infectious processes exacerbation of chronic periodontitis or the presence of recession of injured teeth death.

The development of orthognathic surgery was accompanied by various types of complications, which greatly contributed to the modernization of surgical instruments and surgical techniques,

options for fixing jaw fragments, and was aimed at preventing complications of surgical treatment of congenital jaw anomalies. However, today in the domestic literature there is practically no information about complications that develop during orthognathic interventions, an algorithm of actions has not been developed to avoid mistakes and minimize the risk of complications at the stages of patient management, and there is no detailed classification of possible complications of surgical treatment of this category of patients.

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