

Rehabilitation of patients after orthognathic intervention in the jaws.

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Abstract. For the rehabilitation of the patient at the end of the intervention, a number of restrictions must be observed. First of all, the patient is allowed to take only liquid food - this will last until all surgical incisions in the oral cavity have healed and the fixators from the upper and lower jaws have been removed. In the future, for some time, it is allowed to use only products crushed in a blender.

Keywords: Orthognathic surgery, maxillary osteotomy, mandibular osteotomy, osteotomy, rehabilitation, edema, pain.

Orthognathic surgery is commonly known as jaw correction or simply jaw surgery. Used to correct indications related to the jaw and face. Often these are medical indications that do not respond or respond poorly to orthodontic treatment. Such surgery can be divided into three types: operations on the upper jaw, known as maxillary osteotomy, operations on the lower jaw, known as mandibular osteotomy, and operations on both jaws, known as bimaxillary osteotomy. Surgery is usually done only when orthodontics does not solve the problem. However, 18-24 months prior to surgery, the patient will need to wear fixed braces so that the teeth can be gently guided into the position needed for the surgery. Fixed braces must also be worn after surgery for more than six months.

Maxillary osteotomy or maxillary bone surgery is performed on the upper jaw. This operation will change the position of the upper jaw/teeth in relation to the lower jaw. It is used for medical findings such as reverse overlap (when the upper anterior teeth sit behind the lower anterior teeth and protrude inwards), gingival smile, vertical incisal disocclusion, and in cases where the maxilla is narrower than the mandible, often causing incisal occlusion. Simply put, the upper jaw is trimmed and then moved up, down, or pushed outward. In the case of a gum smile, part of the jaw is simply cut out completely. After each operation, tiny titanium screws and plates are inserted to hold the jaw in place.

Mandibular osteotomy or mandibular bone surgery is performed on the mandible. This operation will change the position of the lower jaw/teeth relative to the upper jaw. It is used for medical opinions where the lower jaw should be more forward or backward. Similarly to the maxillary osteotomy, the jawbone is dissected. The "cut" piece can then be pushed forward slightly with screws and plates, and the piece of bone can also be completely cut out.

Bimaxillary osteotomy or surgery on both jaws is basically an operation that is performed simultaneously on the upper and lower jaws. Sometimes a significant correction is required, for which it is not enough to move only one jaw, so both jaws will need to be moved towards each other, for example, the upper jaw bone back and the lower jaw bone forward. Over time, after all these surgeries, the jawbones will fuse together again in their new positions. Sometimes a surgical procedure called genioplasty also requires the chin to be pulled outward. Sometimes these operations are performed due to asymmetry or disproportion of the face.

As a rule, all operations are performed in the mouth, so there are no visible scars. Facial surgeries are among the least painful postoperatively, with noticeable swelling and bruising usually disappearing after a few weeks.

Orthognathic surgery is a surgical intervention on the hard bone tissue of the face, jaws and their articular surfaces. The main types of operations performed by surgeons in this area are:

- elimination of problems with closing between the upper and lower teeth. We are talking about correcting malocclusion, which arose as a result of violations of the anatomical structure of the jaws;
- correction of face dimensions in all planes;
- surgical removal of the causes of respiratory disorders during sleep (sleep apnea);
- solving problems with the articular apparatus of the jaws;
- correction of congenital disorders of growth and development of bone tissues of the face.

Almost any orthognathic problem requires the attention of several specialists at once. So, for example, an orthodontist evaluates the correct bite, and a plastic surgeon controls the aesthetic result of the intervention. Neurologists make sure that during the operation the nerve pathways innervating (supplying) the facial muscles are not affected, ophthalmologists and otolaryngologists advise the surgeon on the safety of soft tissues and organs of the head, etc. First of all, the surgeon discusses in detail with the patient the changes that are planned to be made, i.e. defines the objectives of the procedure.

1. Orthognathic treatment usually begins with fixing a system of braces on the patient's teeth. It exerts carefully calculated efforts, corrects the inclination of the teeth and their position relative to each other.

2. After the teeth are brought into the correct position, all the geometrical parameters of the patient's jaw apparatus are carefully measured. This is necessary to accurately determine the direction and degree of displacement of the upper and lower jaws.

3. Next, the specialist proceeds to the surgical correction of the identified violations. Orthognathic surgeries are always performed under general anesthesia. The peculiarity here is that for the constant supply of anesthesia to patients it is impossible to intubate the trachea through the mouth - it is the area of intervention. And because anesthesia is served with the help of nasal intubation - the introduction of a tube into the trachea through the nose. In addition, the patient's jaws are fixed in one position relative to each other.

4. Orthognathic surgical interventions are usually performed through incisions in the oral mucosa. This ensures the best aesthetic effect, that is, as a result, none of the postoperative scars will be visible to outsiders.

5. Dissection of bone tissue (osteotomy) usually takes place in the form of three main options:

- Lefort osteotomy I - for interventions on the upper jaw;
- bilateral sagittal osteotomy - for the correction of the mandibular bone;
- genioplasty - to correct the position of the tip of the chin.

In addition, there are a number of rarer orthognathic surgical techniques:

- Lefort II osteotomy, in which the correction affects not only the upper jaw and its teeth, but also the middle part of the bones of the facial skull (the area around the nose);
- Lefort III osteotomy - a large-scale operation in which the bone base of the face is actually reassembled, which implies its almost complete separation from the rest of the skull for some time;
- monoblock osteotomy, when the correction of the facial bones is supplemented by interventions on the frontal bones of the skull;
- Distraction osteogenesis involves cutting the bone in a precisely defined place, and then gradual mechanical extension of this cut.

Anadolu surgeons use these rarely used orthognathic techniques primarily to correct severe deformities and congenital anomalies in the development of the facial bones.

What will happen after the operation?

At the end of the intervention, a number of restrictions must be observed. First of all, the patient is allowed to take only liquid food - this will last until all surgical incisions in the oral cavity have healed and the fixators from the upper and lower jaws have been removed. In the future, for some time, it is allowed to use only products crushed in a blender.

Pain after orthognathic surgery is usually not very pronounced and rarely requires special prescription of painkillers in the rehabilitation period. Most often, patients are not worried about pain, but swelling of the soft tissues of the face and postoperative hematomas. But such violations, although they spoil the appearance of a person, do not pose a serious problem, since they do not require any treatment and disappear on their own after 2-3 weeks. In a small percentage of cases, this loss of sensation may be permanent.

General recovery after uncomplicated orthognathic interventions takes about a month. If the volume of the operation was large or significant defects had to be corrected, then the rehabilitation period may increase. In addition, if after the operation the upper and lower jaws were fixed for two or more weeks, the patient needs observation and control over the next six months with periodic visits to the doctor.

Initial healing after jaw surgery takes about six weeks, complete healing takes about 12 weeks. Obviously, the recovery time after this kind of surgery will depend on the severity of the operation, for example, both jaws or only one jaw, as well as the actions of the patient. Obviously, jaw surgery affects eating and drinking as well as speech. Below is a timeline of recovery after orthognathic surgery to illustrate what a

patient can expect, however listen to your surgeon - recovery from any type of maxillofacial surgery is very individual.

First 7 days after surgery:

- Eating/drinking - Patients can only drink during the first week. In the first couple of days, just rare liquids, and then thicker ones. It is very important to maintain good hydration
- Swelling - Swelling usually starts to go down quite quickly, about two to three days after surgery
- Pain – Orthognathic surgery is actually one of the least painful types of surgery. However, in the first week some pain will be present. You may need to take painkillers. Ice packs can also be used for the first few days; after this period you can also use warm packs.
- Speech – speaking will be quite difficult as jaw movement will be limited, especially if the surgeon places elastic bands in the mouth to restrict jaw movement
- Salivation - due to swelling and trauma, patients may experience profuse salivation
- Sense organs - there will be numbness in the mouth
- Oral hygiene is important but hard to maintain! If the surgeon allows, mouthwash or salt water can be used. A toothbrush with small bristles may also be helpful.

7-14 days after surgery

- Eating/drinking - still mostly liquid or lightly ground food
- Swelling - most of the noticeable swelling will probably go away
- Pain - any pain from the operation will disappear
- Speech – should improve – people will understand you better
- Salivation - should also decrease
- Sense organs - more sensations should return
- Oral hygiene - perhaps now you can use a toothbrush to care for the wound

14-28 days after surgery

- Eating/drinking - still mostly liquid or light food
- Speech - speaking will become much easier
- Salivation - should disappear
- Sense organs - the sensitivity of the face should be significantly restored

One to two months

- Eating/drinking – about two months after surgery, the doctor will probably allow you to eat normal food
- Sense organs - numbness is likely gone - but for some people it may take up to 12 months
- Speech - no more problems

The recovery time after lower jaw surgery and the recovery time after upper jaw surgery are about the same, although surgery on both jaws may take a little longer.

The next step for most patients will be a visit to the orthodontist, who will tell you if any orthodontic devices (such as fixed braces) are needed.

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18. METHODS OF EXAMINATION OF PATIENTS WITH PHEGMON OF THE MAXILLO-FACIAL REGION

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