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THE COMBINATION OF THE USE OF A FACIAL MASK AND SKELETAL ENLARGEMENT METHODS IN ORTHODONTIC TREATMENT

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Annotation

Modern orthodontics has a wide range of methods for correcting skeletal forms of dental anomalies, especially during the period of active growth of the maxillofacial region. A special place among them is occupied by the combined use of a facial mask and methods of skeletal expansion of the upper jaw, aimed at stimulating its growth in the sagittal and transversal directions. This approach allows influencing not only the dental alveolar structures, but also the bony elements of the facial skeleton, which is especially important in the treatment of patients with mesial occlusion and maxillary deficiency. The article discusses the biomechanical foundations, clinical indications, treatment stages and effectiveness of the combined use of a face mask and skeletal enlargement, as well as analyzes the advantages and possible limitations of this method.

Keywords

orthodontics, facial mask, skeletal dilation, upper jaw, mesial occlusion, jaw growth.

Dental anomalies of a skeletal nature are one of the most difficult problems of modern orthodontics. Of particular clinical importance are conditions accompanied by underdevelopment of the upper jaw in the sagittal and/or transversal directions, which leads to the formation of mesial occlusion, impaired facial profile and functional disorders. Traditional orthodontic methods, focused mainly on moving teeth, do not always provide stable and complete results with pronounced skeletal disorders.

In this regard, special attention is paid to methods aimed at modifying jaw growth. The combined use of a facial mask and an extension of the upper jaw skeleton is considered as one of the most effective ways of early orthopedic and orthodontic treatment, allowing to correct skeletal imbalance and improve the harmony of the facial profile.

Biomechanical fundamentals of the use of a facial mask

A facial mask is an orthopedic device designed to stimulate the anterior growth of the upper jaw. The main mechanism of its action is the transfer of extraoral forces through intraoral elements to the bone structures of the upper jaw and adjacent sutures. Under the influence of directed forces, growth is activated in the area of the median palatine, sphenoid-maxillary and zygomandibular sutures.

The most pronounced effect of using a face mask is observed during the period of active growth, when the bone sutures retain relative pliability. At this age, orthopedic treatment makes it possible to achieve true skeletal movement of the upper jaw, and not only dental alveolar compensations. The direction and magnitude of the applied force are selected individually, taking into account the clinical situation and morphological characteristics of the patient.

Extension of the upper jaw skeleton

Skeletal dilation of the upper jaw is an important step in the comprehensive orthodontic treatment of patients with transversal deficiency. The purpose of this method is to open the median palatine suture and increase the transverse dimensions of the upper jaw. In clinical practice, various types of dilating devices are used to transfer force directly to bone structures.

The expansion of the skeleton makes it possible to eliminate the narrowing of the dentition, improve the ratio of the jaws and create favorable conditions for subsequent orthodontic and

orthopedic treatment. In addition, the opening of the palatine suture helps to reduce the resistance of bone structures during the subsequent application of the face mask, which enhances its orthopedic effect.Justification of the combined use of methods

The combined use of a facial mask and an extension of the upper jaw skeleton is based on the principle of a comprehensive effect on the growth and development of the maxillofacial region. Preliminary or simultaneous expansion of the skeleton reduces the mechanical resistance of the bone sutures, which contributes to a more efficient anterior movement of the upper jaw under the action of a facial mask.

The combination of these methods allows you to:

- enhance the orthopedic effect of treatment;
- minimize dental alveolar compensation;
- improve the stability of the achieved results;
- reduce the duration of active treatment.

This combination is especially effective in the treatment of patients with mesial occlusion caused by retrognathia of the upper jaw.

Clinical indications and treatment stages

The main indications for the use of a combination of a facial mask and skeletal enlargement are:

- skeletal mesial occlusion;
- narrowing of the upper jaw;
- deficiency of anterior maxillary growth;
- facial profile disorders related to the underdevelopment of the middle zone of the face.

Treatment is usually carried out in several stages. At the first stage, the skeleton of the upper jaw is expanded in order to open the palatine suture. Next, a facial mask is connected, which provides orthopedic effect in the sagittal direction. Subsequently, orthodontic correction of the position of the teeth and stabilization of the achieved result are carried out.

Effectiveness and limitations of the method

Clinical observations and analysis of treatment results indicate the high effectiveness of the combined use of a face mask and skeletal enlargement in childhood and adolescence. There is an improvement in the jaw ratio, normalization of occlusion and a marked improvement in facial aesthetics.

However, the effectiveness of the method decreases significantly after the completion of active growth, when bone sutures lose their ability to remodel. In such cases, orthopedic treatment may have limited effect and requires a combination with surgical methods. In addition, the success of treatment largely depends on the patient's compliance and compliance with the wearing regime of the devices.

Conclusions.

1. The combination of a facial mask and skeletal extension methods is an effective way to correct skeletal forms of dental anomalies.
2. The complex effect on the growth of the upper jaw makes it possible to achieve a more pronounced and stable orthopedic effect.
3. The most favorable treatment results are observed during the period of active growth of the maxillofacial region.
4. Pre-expansion of the skeleton reduces the resistance of bone sutures and increases the effectiveness of the facial mask.
5. This method requires a strict individual approach and high patient motivation to achieve optimal clinical results.

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