

## COMPLEX APPROACH TO SURGICAL TREATMENT OF EXTERNAL NOSE DEFORMATIONS IN COMBINATION WITH JAW-DENTAL ANOMALIES

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**ABSTRACT:** An integrated approach to the diagnosis, planning and surgical treatment of patients with deformities of the facial skeleton does not lose its relevance to the present. We examined 100 patients at the plastic surgery department of a multidisciplinary clinic, 71% of whom were men. The subjects were divided into 3 according to age: 18-28 years old (58%), 29-39 years old (30%) and over 40 years old (12%). All patients had nasal breathing disorders with dentoalveolar anomaly, 70% of patients with prevailing deformity of the external nose, 30% with prevalent deformity of the dentoalveolar complex. The study shows extensive clinical manifestations of the external nose and intranasal structures. The combination of X-ray examination, endoscopic examination, objectifies data and increases the clinical effectiveness of treatment.

**KEYWORDS:** External nose, jaw-dental anomalies, dentoalveolar deformity, computer tomography.

### INTRODUCTION

Despite significant progress in the development of maxillofacial surgery, the issues of diagnosis, planning and treatment of patients with deformities of the facial skeleton do not lose their relevance. The importance of this problem, first of all, is determined by the high frequency of causes of the development of nasal deformities (post-traumatic, congenital, etc.).

To date, the issues of diagnosis and treatment of patients with various deformities of the facial skeleton are widely covered. Methods of surgical treatment of patients with deformities of the external nose are widely introduced and applied in everyday clinical practice. These patients undergo external nose reconstructive surgery, and little attention is paid to orthodontic treatments. Often, in striving for bite correction, facial features, the skeletal nature of deformities, and a close functional relationship between adjacent anatomical structures are not taken into account, which negatively affects the final result of treatment. Dentofacial anomalies occupy one of the first places among diseases of the maxillofacial region and are characterized by significant morphological, functional and aesthetic disorders already in the early stages of bite formation. The results of treatment of patients in similar situations are often unsatisfactory, which is explained by the lack of clear and consistent recommendations in the implementation of therapeutic measures. Unfortunately, we do not have reliable statistical data on the incidence of nasal deformities in patients with dentoalveolar anomalies. However, it is known that they account for 19 to 48% of the total number of patients with deformities of the facial skeleton. Considering the above, the study of the mechanisms of the development of deformity of the external nose accompanied with dentoalveolar anomalies and the development of a complex method of treatment was the reason for planning this study.

The aim of our study was to increase the effectiveness of complex treatment of patients with deformities of the external nose and dentition.

## **MATERIAL AND METHODS**

We examined 100 patients on the basis of the plastic surgery department of a multidisciplinary clinic. Of these, 71% were men, 29% were women. The patients were distributed by age: from 18 to 28, from 29 to 39, and from 40 or more. Of these, 58% of patients are patients aged 18 to 28 years, 30% are patients aged 29 to 39 years. And 12% of patients aged 40 and above. All patients underwent examinations, which included: subjective and objective: complaints, anamnesis, external examination, clinical and laboratory studies, X-ray studies, anthropometric studies, nasal breathing function. We divided the patients into 2 groups: the 1st group consisted of 70 patients with prevailing deformity of the external nose combined with dentoalveolar anomaly, accompanied by impaired nasal breathing. Group 2 consisted of 30 patients with prevailing deformity of the dentoalveolar complex combined with impaired nasal breathing.

## **RESULTS AND DISCUSSION**

All patients had nasal deformities. Of these, 42% of patients had a deformity of the nose with the formation of a hump and combined with a deformity of the nasal septum. 32% were with retraction of the nasal dorsum (saddle nose) with deformation of the nasal septum, 22% of patients were with lateral displacement of the nose and with deformation of the nasal septum. 4% were with a wide nose.

The patients also had dentoalveolar deformities. Of these, 65.7% of patients were with deformation of the dentition, 21.5% with deformation of the alveolar process, and 12.8% of patients were with deformity of the lower jaw (lower macrognathia).

In the first group of patients, osteotomy of the nasal bones was performed in 10% of cases, resection of the nasal hump in 30% of cases, elimination of the nasal defect with a cartilaginous autograft or implant in 18%, Correction of the tip of the nose in 4%, septoplasty in 20%, compactosteotomy in 7% of cases.

The second group of patients underwent osteotomy of the nasal bones in 2 cases, resection of the nasal hump in 4 cases, elimination of the nasal defect with a cartilaginous autograft or implant in 2 cases, septoplasty in 30, osteotomy of the branches of the mandible in 9 cases, compactosteotomy in 8 cases.

The data of anthropometric studies of changes in angular values before and after treatment showed that the frontal-nasal angle was, on average,  $133.6^\circ$  before treatment, and  $135.7^\circ \pm 1.3$  after treatment; nasolabial - before treatment  $96.1^\circ$ , and after treatment  $99.5^\circ \pm 1.7$ ; naso-facial - before treatment  $32.1$ , and after treatment  $31.8^\circ \pm 0.6$ ; and also rhinoscoliosis on average before treatment was  $0.85^\circ$ , and after treatment it was equal to  $0^\circ$ . Considering the frequency of scoliotic changes in the nose (lateral displacement or obliquity), it must be said that this pathology occurs quite often in patients with dentoalveolar anomalies. The side of scoliotic (displaced to the side) changes is determined by the direction of action of the traumatic force, with the traumatic genesis of rhinoscoliosis.

## CONCLUSIONS

Thus, in patients with jaw-dental anomalies, there is a significant variety of clinical manifestations of deformities of the external nose and intranasal structures. Of these, with a humped nose - 42%, with a depression of the nasal dorsum (saddle nose) - 32%, as well as with other types of deformities of the external nose - lateral displacement of the nose (obliquity) - 22%. The use of a diagnostic algorithm and treatment planning for patients with deformities of

the external nose and dentition make it possible to identify the types of deformities and determine the timing and stages of treatment with the participation of related specialists (ENT, orthodontist). The developed indications and contraindications for the staged surgical method of treatment make it possible to objectively select the category of patients. The tactics of surgical treatment of patients involves a differentiated approach depending on the severity of their facial asymmetry. With a pronounced deformation of the osteochondral pyramid of the nose, its elimination is possible in the second stage, 6 months after osteo-reconstructive surgery on the jaws.

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