

ORTHODONTIC CARE IN COMPREHENSIVE TREATMENT OF PATIENTS WITH SEVERE PERIODONTAL PATHOLOGY

Xodimurodov B. R.
Scientific Adviser

Salimov A.
Xudoyberdiev J.

Abstract

Developmental anomalies of the jaws are a common pathology associated with disproportions in the development of the upper and lower jaws. To optimize the surgical stage of treatment, a new method of surgical treatment is proposed that eliminates the use of a bite template for positioning the jaws. The method involves marking skeletal landmark points: point Na, points A and B, bone marks in the area of the second molars of the upper jaw. During the operation, these points are used to position the two-jaw complex in three planes. The developed method reduces the time of the operation, ensures correct positioning of fragments of the upper and lower jaw, helps to avoid postoperative deformation of the terminal part of the nose and upper lip.

Keywords: orthognathic surgery, surgical treatment, jaw developmental anomalies, macrognathia, micrognathia.

Introduction

We examined and comprehensively treated 12 patients with congenital anomalies of the jaws, aged from 18 to 32 years: nine patients with the diagnosis of mesial occlusion of the skeletal type, class III according to Angle, upper micrognathia, lower macrognathia; three patients with the diagnosis of distal occlusion of the skeletal type, class II according to Angle, lower micrognathia. Based on the results of the comprehensive examination, all patients were recommended to undergo comprehensive orthodontic and surgical treatment - bimaxillary orthognathic surgery. Treatment planning began with assessment of the facial configuration (smile line; height of the upper, middle and lower thirds of the face; height of the upper and lower lips, vermilion border), amplitude of mouth opening, displacement of the lower jaw when opening the mouth, presence or absence of clicks/crunching in the TMJ; determination of the presence of deviation from the central line of the upper and lower jaws; height and position of the crowns of the teeth, depth of the incisal overlap; interlabial space; width of the sagittal slit). Clinical photography was a mandatory method. A Canon EOS 5D camera with a Doctorseyes circular light system was used. Face photography was performed at rest and with a smile in the following positions: full face, three quarters left and right, profile left and right. Dental arches were photographed in a state of occlusion from the front, from the side right and left, occlusal surface of the dental arches of the upper and lower jaws.



For cephalometric analysis and calculation of the required movement of the upper and lower jaws, the Dolphin 11.7 program was used. Speed and convenience, as well as the elimination of errors caused by manual calculation of indicators, make the use of this program an integral part of treatment planning for patients with gnathic pathology. The operation was performed in accordance with the developed surgical protocol (positive decision on the invention dated 25.05.2015 for application 2014.131.220 dated 28.07.2014 "Method for correcting congenital and acquired jaw deformities").

Results of the study

All patients underwent regular check-ups at 1, 3, 6 and 12 months after the surgery. All patients had stable occlusion and improved aesthetic appearance due to restoration of facial proportions. Clinical example: patient E., 30 years old (case history No. 277734) was admitted due to a congenital anomaly of the upper and lower jaws: macrogathia, micrognathia, mesial occlusion. Examination revealed an increase in the size of the lower jaw, a decrease in the size of the upper jaw, and lack of occlusion of the dental arches. At the prehospital stage, orthodontic preparation, alignment of the dental arches, and creation of spaces in the area of 1.3, 1.2 and 2.3, 2.2 teeth were performed.

The frequency and prevalence of congenital anomalies of jaw development contribute to the emergence of modern planning techniques and various methods of their surgical correction. Single-jaw operations are less traumatic, short-term, but do not eliminate the existing pathology of the upper jaw, and therefore, achieve accurate occlusion. Therefore, two-jaw operations are currently used. In this case, a bite template is used to position the jaws. Due to the large number of preparatory stages, in addition to the large amount of time spent, the number of possible errors also increases. The duration of the intervention (at least double intermaxillary ligation) not only complicates and lengthens the operation, but also increases the risk of surgical and postoperative complications, and sometimes makes the correction of anomalies impossible. The developed method reduces the time of the operation, since when using the method, intermaxillary ligation is carried out once, there is no need to make a surgical template. The choice of reference points allows for precise and instantaneous movement of the two-jaw complex to the position planned using the calculations performed, ensuring correct positioning of the upper and lower jaw fragments relative to the facial skeleton. The operation involved bilateral sagittal osteotomy of the lower jaw, segmental osteotomy of the upper jaw, osteosynthesis with metal structures with the placement of the dental arches in an orthognathic relationship according to the protocol described above. The postoperative period was uneventful. The wounds in the oral cavity healed by primary intention. The orthognathic position of the dental arches was achieved.

Conclusion

The proposed modified protocol of orthognathic surgery allowed to increase the efficiency of bimaxillary reconstructive surgeries for skeletal forms of occlusion disorders by reducing the time of surgery and decreasing its traumatic nature while maintaining the accuracy of the surgery and the stability of the result of the entire treatment.

