



Improvement Of Traditional Alveoplasty in Patients with Congenital Cleft Lip and Palate

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ABSTRACT

The urgency of the problem of developing and improving methods for the surgical treatment of secondary deformities of the upper and lower jaws is determined by the increase in the number of patients with facial skeleton deformities after primary operations on the lip and palate. Numerous studies conducted by domestic and foreign scientists indicate that only the study of the long-term results of treatment of patients with jaw deformities can answer many questions, namely: how effective are improved or developed treatments, is a comprehensive approach, suitable for planning and treating patients with jaw deformities, what should be the sequence and timing of rehabilitation treatment.

Keywords:

Cleft Lip And Palate, Secondary Deformities Of The Upper Jaw, Alveoplasty

Actuality.

Malformations of the maxillofacial region occur with a frequency of 1: 700–1: 1000, of which 90% are congenital clefts of the upper lip and palate (CLP) [1,3].

Congenital clefts of the upper lip and palate are characterized by the presence of not only a local anatomical defect, but also a number of problems are revealed, in particular, insufficient functional and social-emotional well-being, including concomitant systemic respiratory disorders, problems with nutrition and speech, problems with teeth and face, shame, anxiety, lack of interaction with peers and dissatisfaction with their appearance. [2,4,5].

Aim of the research.

To increase the efficiency of rehabilitation of patients with ERHN, accompanied by functional and aesthetic

disorders of the midface after cheilo- and uranoplasty, through the development of planning algorithms and complex surgical treatment.

Materials and methods.

In 2019-2020 Alveoplasty was performed in 53 patients, aged 12 to 21 years with a diagnosis of UCLP.

The method of bone grafting of the alveolar process using rigid fixation to form the graft bed and its additional covering in order to improve the preservation of the mucoperiosteal flap, fixation of the autograft and osteogenesis. The use of a miniplate in alveoplasty in patients with a cleft of the alveolar process creates conditions for the formation of bone regenerate and restoration of the alveolar arch. At the same time, the role of the miniplate is not only in strengthening the bed for the graft and maintaining osteogenesis, preventing the growth of fibrous tissue into the

graft, but also in performing the function of the periosteum, since patients with a congenital defect of the upper lip, palate and alveolar process initially have a tissue deficiency, and The mucoperiosteal flaps covering the graft are often scarred and thinned as a result of previous surgeries (cheilo- and uranoplasty). We have proposed an operation technique to eliminate the disadvantages of the known methods, which differs from the traditional technology in the originality of the formation of the graft bed. The proposed method of bone grafting of the alveolar ridge with a cleft of the upper lip, palate and alveolar ridge is that under general anesthesia and local anesthesia, the edges of the cleft of the alveolar ridge are refreshed from the vestibular and palatal sides, and the muco-periosteal flaps are mobilized teeth, the formation of the nasal lining with the elimination of the oronasal message, and then the bed for the bone graft using a miniplate. After incisions along the line of the defect of the alveolar process of the upper jaw, careful exfoliation of the mucoperiosteal flaps and exposure of the bone defect, the flaps are tilted towards the defect, stitched together with the simultaneous elimination of the oronasal communication, sequentially forming the posterior and upper walls of the mucosa, and then stitching flaps from the palatal side, forming the lower wall of the bed. It should be noted that in order to obtain directed bone regeneration, the edges of the bone defect of the alveolar process are "refreshed" with mini-chisels or burs. The bed is filled with a bone autograft from a cancellous substance taken from the iliac crest, from the apical base to the level of the necks of the teeth. In this case, miniplates are fixed with moderate pressure with the formation of a blood clot to ensure tight contact with the bone in order to prevent the invasion of the gingival tissue into the bone autograft. In this case, the growth zone of the upper jaw is not damaged, because mobilization occurs to the edge of the pear-shaped opening, without affecting the anterior nasal spine and vomer, and does not disrupt the development of the child's upper jaw. It should be noted that the manipulation to refresh the edges of the bone defect improves

blood supply to the graft and reduces the risk of complications. As noted above, the use of the mini-plate creates conditions for targeted tissue regeneration: the smooth layer prevents the growth of fibrous tissue into the bone, and the rough surface of the mini-plate facing the bone graft creates a matrix for the formation of new bone.

Research results.

The intermaxillary bone became stable, and in the center of the dental alveolar arch, the bone regenerate was determined clinically and radiographically, filling the bone defect to the full height. In all patients, wound healing in the oral cavity proceeded by primary intention. The donor site also healed without visible complications. In all patients, the height of the "bone bridge" was at least 3/4 of the vertical size of the defect (type I and II filling according to Bergland), which indicates a good result. All patients after surgery continued to receive orthodontic treatment, which contributed to the stability of the treatment results, aimed at establishing the fragments of the upper jaw in the correct position; elimination of the narrowing of the dentition in the area of canines and premolars. After surgical treatment, the bite and soft tissue profile of the patients improved significantly. A comparative analysis of the results of secondary bone grafting by the Belgrad method was carried out with the use of an autograft of the iliac crest (control group) and with the use of rigid fixation (original technique - comparison group). When analyzing the results, the degree of bone ossification and the eruption of the canine in the cleft zone were taken into account. In all patients, the height of the "bone bridge" was at least 3/4 of the vertical size of the defect (I and II filling types according to Bergland), which indicates a good result.

The average postoperative follow-up period was 1 year. In all patients, when evaluating the results of the operation, the oronasal fistula was completely eliminated. In 76.0% of patients, the canine in the cleft zone erupted spontaneously; in 22.0% of patients, the canine inclination angle was more than 15 °; in 2.0% of patients, surgical intervention

(traction) had to be used to erupt the canine, since the canine inclination angle was more than 45 °. In 61.2% of cases, spontaneous eruption of canine was observed with unilateral, in 38.8% - with bilateral CLP. On orthopantomograms and intraoral contact dental images of the cleft area, type I ossification and bone formation in the area of the alveolar process were observed in 84.0% of patients (in 85.0% of patients with UCLP), type II - in 12.5% (respectively, in 12, 0 and 13.0%), type III - in 3.5%. Type IV ossification was not observed. Secondary bone grafting of the alveolar process made it possible to fill and form secondary bone in the nasal region in type I in 44.0% of patients, in type II in 42.0%, in type III in 14.0%. The height of the bony bridge 1-2 years after the secondary bone plate was 83-85.0% of the normal size of the septum height in the nasal region.

Analysis of the long-term results of secondary bone grafting of the alveolar process in patients with UCLP showed that in most cases, positive results were obtained. Secondary bone grafting of the alveolar process, performed during the mixed bite at the age of 7 to 12 years, provides adequate ossification in both alveolar and nasal parts of the upper jaw. The eruption of the canine in the cleft zone occurs spontaneously in most cases. Dynamic observation of patients over the next 1-2 years after secondary bone grafting did not reveal relapses.

The results of clinical and laboratory examination of patients with clefts of the alveolar process of the upper jaw after surgical treatment by means of secondary bone autoplasty indicate the high efficiency of the described methods of surgical treatment of patients as one of the stages of their complex rehabilitation. The use of rigid fixation of fragments in order to eliminate defects in the alveolar process of the upper jaw during the period of changeable bite makes it possible to complete the orthodontic rehabilitation of patients, eliminate the need for prosthetics in adolescence and create conditions for adequate reconstructive operations. The results of X-ray examination of patients after rigid fixation of the alveolar process of the upper jaw put this

method of treatment among the most promising for early full-fledged rehabilitation of patients with congenital through clefts of the upper lip and palate.

Conclusion.

Thus, X-ray images after alveoloplasty with rigid fixations revealed a neoplasm of bone regenerate in all patients, which completely overlapped the upper sections of the alveolar bone defect in 85% of patients.

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