

## PECULIARITIES OF THE TREATMENT ALGORITHM FOR THE CONGENITAL DEFECT THAT CROSSES THE PALATE

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### Abstract

A retrospective analysis of the medical records of children with a diagnosis of congenital cleft lip and palate in the Department of Maxillofacial Surgery of the Children's Clinical Hospital was carried out. 3463 children with congenital cleft lip and palate were examined.

**Keywords:** rehabilitation algorithm, congenital cleft lip and palate, prevention of somatic diseases, ecology, comorbidities.

### INTRODUCTION

Congenital cleft lip and palate is a common malformation of the fetus, occupies a leading place in the structure of all antenatal pathologies, leads to a change in the aesthetics of the child's face, impaired nutrition, breathing, speech defects, disability of children from early childhood to the moment of full elimination of functional disorders [2–4]. The problem of treating children with congenital cleft lip and palate requires substantiation of age-related approaches, improvement of methods of treatment and rehabilitation of patients [5]. For successful rehabilitation of patients with congenital cleft lip and palate, it is necessary to observe continuity at the stages of medical care, in which doctors of various profiles take part.

### MATERIALS AND METHODS

A comprehensive approach to the treatment of patients with congenital cleft lip and palate involves a pediatrician, neonatologist, otorhinolaryngologist, audiologist, speech therapist, surgeon, maxillofacial surgeon, pediatric dentist, orthodontist, psychologist, etc. [1, 6]. In a region with ecotoxicants, it is also

relevant to consult a toxicologist to establish the toxic effect on the child's body in the prenatal period and conduct detoxification therapy if there are positive tests for ecotoxins. An anesthesiologist-resuscitator plays an important role in the rehabilitation algorithm for children with congenital cleft lip and palate, who assesses the degree of risk of the upcoming surgical intervention, analyzes the results of the preoperative examination and the conclusions of other specialists, and decides on the patient's readiness for surgery.

It is impossible to eliminate the anatomical and functional disorders of the child's body caused by congenital cleft lip and palate with only one surgical method of treatment. A comprehensive approach is needed in the clinical examination of patients, which would include all stages of the rehabilitation of children with this defect, which would contribute to the speedy restoration of lost functions.

### RESULTS AND DISCUSSION

In the course of our study, a direct relationship was noted between the level of environmental pollution by ecotoxins and the frequency of concomitant somatic diseases in children. Based on the data of 3463 medical records of children with congenital cleft lip and palate, it was found that 1446 children were born and live in an area with petrochemical ecotoxins.

In the area without petrochemical ecotoxins, diseases of the ENT organs were detected in 1046 children (72.33%), frequent relapses of acute respiratory viral infection in 993 (68.71%), respiratory system diseases in 514 (35, 52%), pathologies of the central nervous system - in 419 (29.02%), diseases of the cardiovascular system, including congenital heart defects - in 248 (17.12%), gastrointestinal tract - in 152 (10 18%), iron deficiency anemia according to blood tests - in 122 (8.43%), food and drug allergies - in 114 (7.89%), malformations of the organs of vision - in 72 (4.95%), urinary tract pathology systems, including those of an infectious nature, in 54 (3.71%), malnutrition, reduced body weight - in 46 (3.16%), concomitant diseases of various organs and systems - in 814 (56.31%).

In the area with petrochemical ecotoxins, diseases of the ENT organs were detected in 1603 children (79.49%), frequent recurrences of acute respiratory viral infection in 1511 (74.93%), diseases of the respiratory system in 825 (40.91%) ), pathology of the central nervous system - in 572 (28.38%), diseases

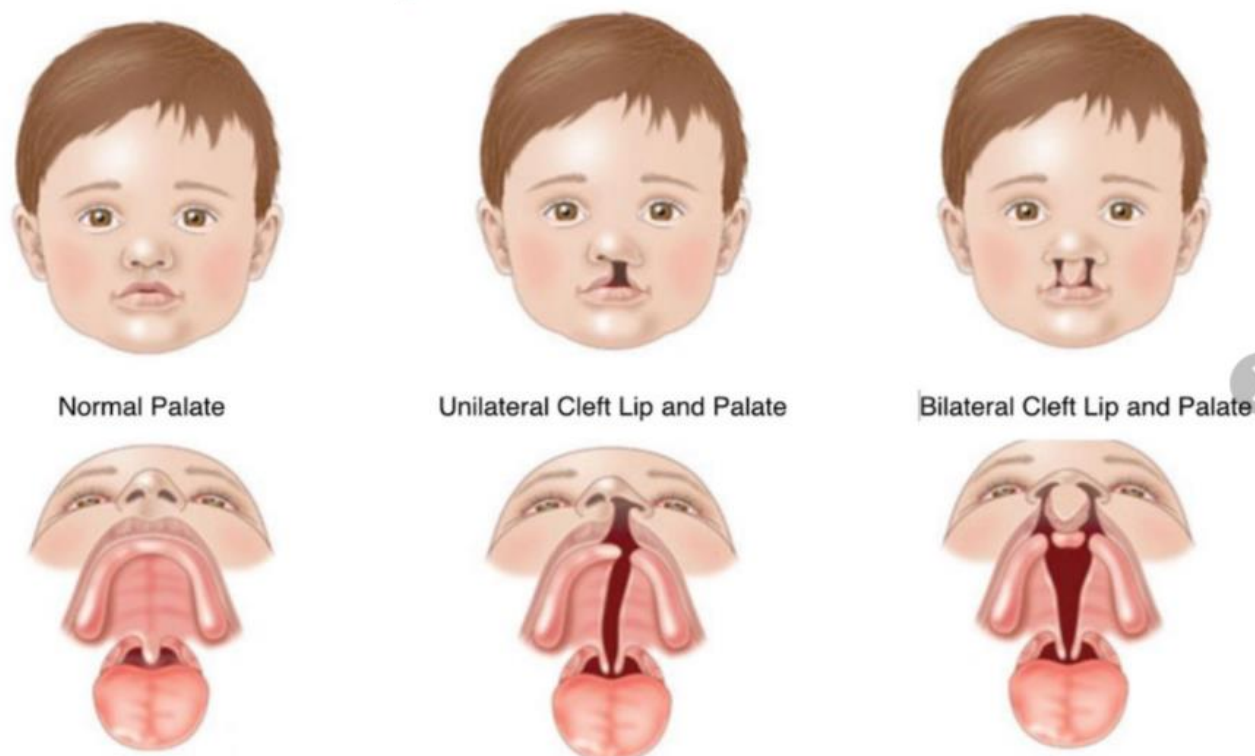
of the cardiovascular system, including congenital heart defects - in 340 (16.86%), gastrointestinal tract - in 281 (13.94%) %, iron deficiency anemia according to blood tests - in 239 (11.86%), food and drug allergies - in 159 (7.91%), malformations of the organs of vision - in 103 (5.14%), pathologies of the urinary system, including infectious nature - in 70 (3.49%), malnutrition, reduced body weight - in 60 (2.97%), combined diseases of various organs and systems - in 1216 (60.29%).

As a result of a retrospective analysis of the medical records of children with congenital cleft lip and palate, it was found that children born and living in the region with petrochemical ecotoxins have a high percentage of concomitant somatic diseases, which affects the patient's preparation for surgery.

When preparing for a planned operation, the patient should be examined in advance (not later than 1 day before the proposed surgical intervention) by an anesthesiologist-resuscitator in order to determine the completeness of the examination and prescribe, if necessary, an additional examination, assessment of the degree operational and anesthetic risk, the implementation of a reasonable choice of the method of anesthesia and the means necessary for it. Often, a planned operation is canceled by an anesthesiologist due to significant changes in the blood picture (table). There is a decrease in the levels of iron and hemoglobin in the blood, a violation of the level of platelets, which can be caused by iron deficiency anemia. In 73% of the examined children, hypoproteinemia is observed, a decrease in the level of protein in the blood serum closer to the lower limit of the norm, which indicates a metabolic disorder, inferiority in food intake and digestion processes caused by this malformation.

Table The main parameters of the blood test in children with congenital cleft lip and palate before elective surgery

Index	normal range	Unit	In children with CCLP before surgery
Leukocytes (WBC)	4,3—9,5	$\times 10^9/L$	11,45 $\pm$ 2,62
Red blood cells (RBC)	3,73—5,5	$\times 10^{12}/L$	4,16 $\pm$ 0,50
Hemoglobin (HGB)	100—198	g/L	108 $\pm$ 26,30
Platelets (PLT)	159—386	$\times 10^9/L$	375 $\pm$ 12,41
ESR (ESR)	5,0—12,0	mm/h	10 $\pm$ 3,51
total blood protein	60—80	g/l	64 $\pm$ 7,33



The presence of somatic diseases, frequent recurrences of exacerbation of chronic and infectious diseases, disorders in the picture of blood and urine are the reasons for postponing the date of surgery to a later period, when the child's condition is more stable. We have developed an algorithm for the rehabilitation of children with congenital cleft lip and palate in a region with ecotoxics, the mandatory link of which is a strictly individual approach to the child and the operation in the most favorable period for this child.

A neonatologist and a breastfeeding specialist give advice on the nature and method of feeding a child with cleft lip and palate, trying to maintain breastfeeding.

A geneticist consults, establishes the type of hereditary transmission (if any), and calculates the prospective possible risk of having a child with a congenital defect in the proband and his family members.

An orthodontist performs early preoperative orthopedic preparation of the patient. A consultation with a toxicologist is scheduled, he examines the urine, blood of the child or breast milk of the mother for ecotoxics, and, according to indications, prescribes detoxification therapy for the mother and child.

Individual work is carried out with parents to teach the peculiarities of nursing a sick child to ensure optimal development, rational feeding and prevention of infectious diseases.

This rehabilitation period is aimed at preparing and performing a cheilorhinoplasty operation, which is usually performed in children at 2.5–3 months of age. With bilateral complete cleft of the upper lip, alveolar process, soft and hard palate, early preoperative orthopedic preparation of the patient continues in this age period. The goal of early preoperative orthopedic treatment is to eliminate the displacement of the maxillary fragments, protrusion of the median fragment and prevent secondary displacement in the postoperative period. In the presence of concomitant somatic and neurological diseases, they are treated.

Frequently ill children with concomitant somatic pathology are advised to consult an immunologist-allergist to correct their immunological status before surgery.

Before the operation, the anesthesiologist-resuscitator examines the patient, assesses the degree of risk of the upcoming surgical intervention, the results of the preoperative examination and the conclusions of other specialists. If there are contraindications, planned surgical treatment is postponed until the child's health status is stabilized.

### CONCLUSION

Thus, the algorithm for the rehabilitation of children with congenital cleft lip and palate in the region with industrial ecotoxins, which we have optimized, has been developed taking into account the adverse effect on the body of emissions from large oil industrial enterprises into the atmospheric air. Children with congenital cleft lip and palate, born and living in a region with petrochemical ecotoxins, who have contraindications to surgical treatment according to the accepted terms due to the presence of concomitant diseases and abnormalities in blood tests, need additional treatment from a toxicologist, anesthetist and other specialists. The algorithm includes a list of additional preventive and therapeutic measures carried out by related specialists at important time stages in the development of a child with congenital cleft lip and



palate, which improves the child's somatic condition and the quality of preoperative preparation.

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