

FEATURES OF THE POSTOPERATIVE PERIOD IN CHILDREN WITH TETRALOGY OF FALLOT ACCORDING TO A RETROSPECTIVE ANALYSIS

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Abstract. *The purpose of research: to study and identify anamnestic and characteristics of the postoperative period in young children with tetralogy of Fallot, by retrospective analysis.*

Materials and methods of research: in the aim of study incidence and structural postoperative complications in children with tetralogy of Fallot, we held a retrospective analysis of 52 case histories of young children with age of 1 to 10, acted on in the cardiac surgery department of the Tashkent Pediatric Medical Institute.

Outcomes and discussions: The Analysis of results showed that the postoperative period in children with tetralogy of Fallot is characterized by the presence of different hemodynamic and infectious characters. the uprising which depending on the severity of the defect, the presence of concomitant diseases the volume of surgical intervention and the duration of Artificial Circulation.

Keywords: *children, congenital heart defects, tetralogy Fallot, the period of after operations.*

Relevance. Congenital heart defects (CHDs) are developmental abnormalities that lead to a violation of the morphological structure of the heart, including the valvular apparatus and the main vessels. FPS occur during intrauterine development (usually at 2-8 weeks) as a result of impaired embryogenesis processes. CHDs accounts for up to 30% of all congenital malformations, and in 11% of cases it causes infant mortality. These anomalies can occur either in isolation or in combination with each other. Tetrad of Fallot is diagnosed in 8-13% of all patients with congenital heart disease. Among the defects requiring surgical treatment in early childhood, Tetralogy of Fallot (TF) accounts for 15% [2, 4, 7].

The incidence of congenital malformation in newborns ranges from 4 to 7%. The general prevalence of this group of diseases is up to 5-8 cases per 1000 births. The outcome in 8% of cases is perinatal death, 40% are diagnosed in utero, 14% cause termination of pregnancy. The average life expectancy of patients with TF is 12-13 years and depends on the degree of pulmonary artery stenosis. Mortality during the first year of life is 25%, by the age of 3 – 40%, by the age of 10 - 70%.

Typically, severely unoperated patients die from thromboembolism in the vessels of the brain with the formation of abscesses, heart failure and infective endocarditis [1, 3, 5]. Surgical treatment of patients with congenital heart disease is still one of the complex problems of cardiac surgery. This pathology is characterized by severe anatomical changes in the heart and large vessels, accompanied by severe hemodynamic disorders with constant hypoxia of the body, impaired peripheral microcirculation and the development of changes in vital organs. Considering modern results in eliminating this defect, most patients undergo such surgery and reach adulthood [6, 7]. Despite the significant achievements of cardiovascular surgery in the radical correction of TF, the issues of studying the development of postoperative complications and the development

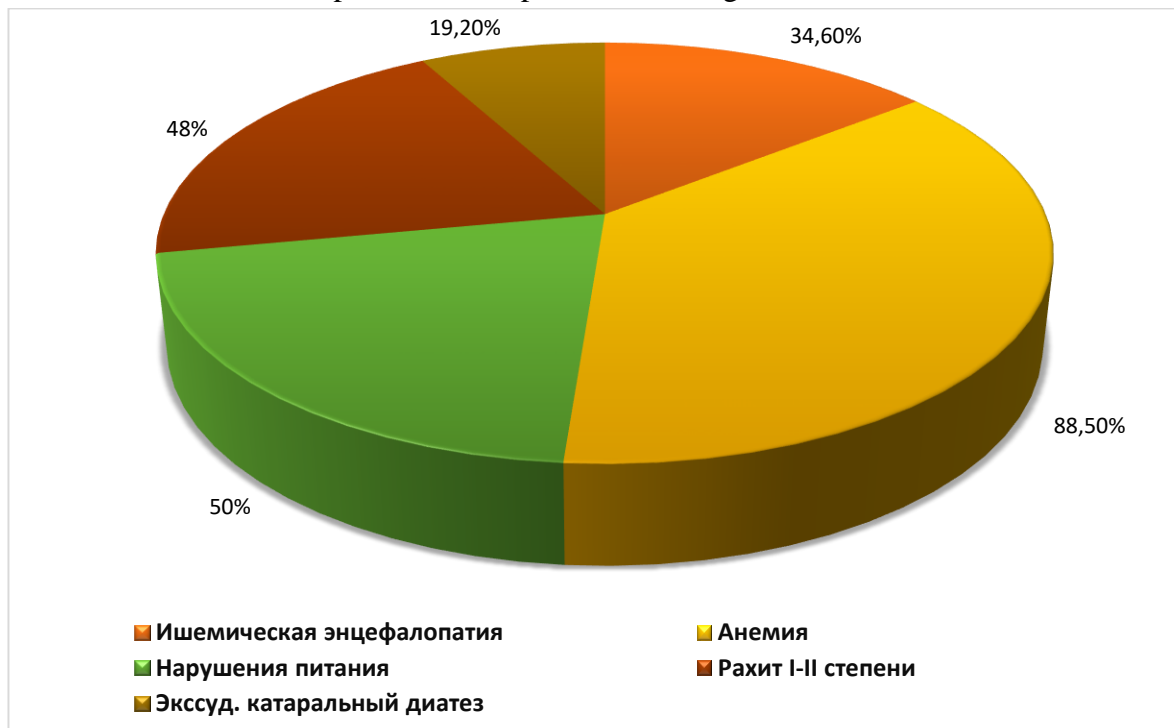
of rehabilitation methods for these children remain relevant, since the prevention of complications after successful correction of TF directly depends on the state of immunity, the presence of concomitant diseases and the quality of care for these patients.

The aim of the study: Studying the incidence of postoperative complications and the clinical and anamnestic characteristics of the postoperative period in children with Tetralogy of Fallot according to a retrospective analysis.

Materials and methods of research. In order to study the frequency and structure of postoperative complications in children with Tetralogy of Fallot, we conducted a retrospective analysis of 52 medical histories of children aged 1 to 10 years operated on in the cardiac surgery department of TashPMI. When analyzing the case histories, attention was paid to the course of pregnancy in mothers of deceased children, the premorbid background of the child, the duration and course of this disease, clinical and instrumental laboratory parameters, treatment and the course of the pre- and postoperative period.

The results of the study. The analysis of the obtained research results showed that the postoperative period in children with Tetralogy of Fallot is characterized by the presence of various complications. According to a retrospective analysis of the children, the main complaints were difficulty breastfeeding, shortness of breath, cough, cyanosis of the face, weakness and fatigue. Frequent lung infections were also observed. The lag in physical development is expressed at an early age. The study of obstetric anamnesis revealed that in children, pregnancy pathology was noted in the I and II half (SARS, anemia, stress). All children were born on time, 60% of them from I-II pregnancy period. The birth weight of children was up to 3000.0 (91.6%).

The study of the premorbid background of children showed that hypoxic-ischemic encephalopathy (34.6%), rickets of I-II degree (48%), anemia (88.5%), various degrees of malnutrition (50%), Exudative-catarrhal (ECD) or allergic diathesis (19.2%) (Fig.1). The severity of clinical manifestations depended on the premorbid background of the child.



Picture. 1. Premorbid background of children with TF.

The study of medical histories showed that clinically all patients with Tetralogy of Fallot had a typical picture of the defect, manifested in the form of cyanosis, which increases with crying and anxiety of the child 75%, dyspnea-type dyspnea (95%), tachycardia (45%) expansion of the boundaries of relative cardiac dullness. Frequent symptoms of the defect in older children were thickening and changing the shape of nails in the form of "watch glasses" and nail phalanges in the form of "drumsticks" (85%), chest deformity in 25% of children (heart hump), lagging in physical and mental development (70%) (Table 1).

Table 1.

Clinical symptoms encountered according to retrospective analysis

№	Symptoms	n=52
1.	cyanosis	75%
2.	Breathlessness type dyspnea	95%
3.	tachycardia	45%
4.	changing the shape of nails in the form of "watch glasses" and nail phalanges in the form of "drumsticks"	85%
5.	chest deformity	25%
6.	retardation in physical and mental development	70%

A retrospective analysis revealed that the severity of the condition depended on the frequency of dyspnea-cyanotic attacks, respiratory infections and heart failure.

On the electrocardiograms available in the medical histories, ventricular arrhythmias were recorded most often in the early postoperative period after radical correction in children with tetralogy of Fallot, which accounted for 16.6% of cases of all rhythm disturbances (Table 2).

Table 2.

Incidence of postoperative ECG changes according to retrospective analysis

1.	Ventricular arrhythmias	16,6%
2.	Atrial rhythm disturbances	5,5%
3.	Atrioventricular nodal reentrant tachycardia	27,8%

Atrial rhythm disturbances were recorded in 5.5% of cases and AV nodal tachycardia - 27.8% of cases. Rhythm disturbances occurred mainly during the first week after surgery. These arrhythmias are associated with many risk factors, including direct surgical trauma to the conduction system, surgical scars that contribute to conduction impairment, and combinations of hemodynamic, anatomical, and electrical abnormalities in children with tetralogy of Fallot.



Picture. 2. ECG changes in TF, child K., 13 years old, accelerated AB rhythm, heart rate 100 beats/min, normal EOS. Complete blockade of the right bundle branch. Left ventricular extrasystole.

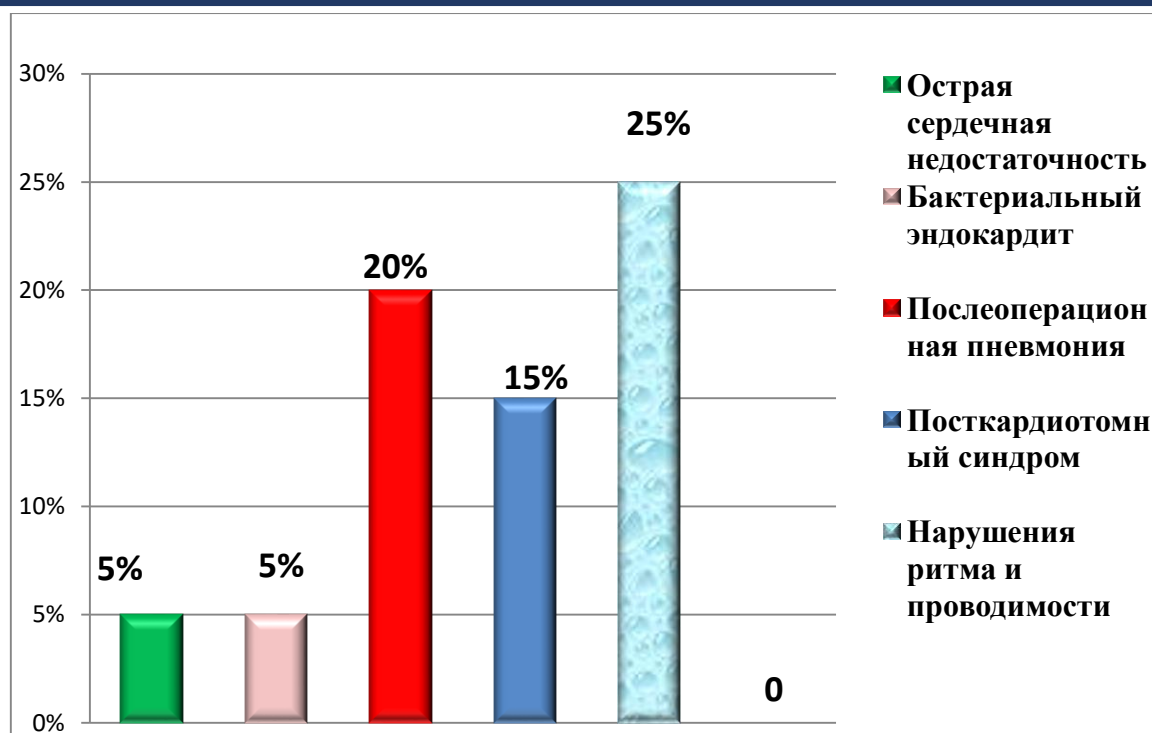


Fig. 3. The structure of postoperative complications in children with TF.

According to a retrospective analysis, 26 children with Tetralogy of Fallot had various kinds of hemodynamic and infectious complications in the postoperative period.

Almost all children have circulatory disorders of NC II degree. Postoperative complications were more often reported in children with T.Fallot in the form of postoperative pneumonia (20%), postcardioma syndrome (15%), rhythm and conduction disorders (25%), acute heart failure (5%) and bacterial endocarditis (5%).

As can be seen from Fig. 3., one of the most common complications is various rhythm and conduction disorders, as well as postcardiotomy syndrome. According to the literature, a violation of the drainage function of the bronchi, which creates favorable conditions for the development of infection, stagnation in the pulmonary artery system, and a decrease in the immune defenses of the body, are of great importance for the occurrence of pneumonia in the postoperative period.

Complications such as postoperative pneumonia and rhythm and conduction disorders were most common in children with tetralogy of Fallot over the age of 3 years, whereas postcardiotomy syndrome and bacterial endocarditis in children under 3 years of age.

The number of deaths was revealed among 2 children with tetralogy of Fallot. The main cause of mortality was acute heart failure, multiple organ failure, DIC syndrome, as well as cardiac arrhythmias that occurred in both cases against the background of bronchopneumonia.

Analysis of medical histories shows that postoperative complications are more common among children with tetralogy of Fallot. The structure of postoperative complications is dominated by postoperative pneumonia, postcardiotomy syndrome and various kinds of cardiac arrhythmias and conduction disorders.

Conclusions. Thus, summarizing the retrospective results, it can be concluded that in children with tetralogy of Fallot, the postoperative period proceeds with various complications of a hemodynamic and infectious nature, the occurrence of which directly depends on the severity of the defect, the presence of concomitant diseases, the volume of surgery and the duration of NC.

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