FEATURES OF THE COURSE OF COMORBID PATHOLOGY WITH CONGENITAL SEPTAL HEART DEFECTS

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Annotation: Congenital heart defects are an important problem in pediatrics due to their high prevalence and the need for early surgical correction due to significant health problems and disability in children. According to WHO, congenital heart disease occurs in 0.7-1.7% of newborns. In some cases, the rapid progression of the stages of the course of congenital heart disease is determined not only by its severity, but also by the influence of concomitant diseases: hypoxic-ischemic encephalopathy, nutritional deficiencies, deficiency anemia, etc. Knowledge of the mechanisms of development of these disorders and the possibility of their timely detection with the help of modern research methods make it possible to diagnose and correct developing pathological conditions as early as possible. In this regard, the issue of studying clinical diagnostic criteria for improving the provision of timely medical care to children with congenital heart disease of an early age remains relevant and requires scientific research in this direction.

Keywords: *congenital heart disease, comorbid conditions, developmental anomaly, extracardiac pathology Currently, the diagnosis of extracardiac congenital malformations and extracardiac pathology is important for clinical practice in determining the timing and stages of surgical interventions on the heart or other organs, preventing complications and predicting the clinical condition of the patient during follow-up. The presence of comorbid pathology in cardiac surgery has a significant impact on the postoperative period, the development of complications, and also affects the prognosis. Current standards and approaches to cardiac surgery should include the analysis of comorbid diseases when choosing anesthesia, intensive care, and surgical tactics.*

Comorbidity is the presence of another disease or medical condition simultaneously with the current disease. It is known that the presence of comorbid diseases leads to an increase in the number of days of hospitalization, leads to the development of disability, interferes with rehabilitation, and increases the number of complications after surgical interventions. This problem has also attracted the attention of specialists working with children in the first years of life. In particular, studies on comorbid pathology in young children with septal congenital heart defects are presented in the scientific literature.

One local study noted that in-hospital mortality in patients with one or more comorbidities undergoing cardiac surgery is 3.3%, compared to 0.4% in patients without comorbidities. Modern medical capabilities and a multidisciplinary approach have shown that the prevalence of extracardiac pathology in children with cardiac surgery pathology is 12-30%, and in adults - 4.5-60%. J.H. Gonzalez's scientific work describes that 7-50% of patients with

congenital heart disease have extracardiac defects (ECDs) and that they are at high risk of morbidity and mortality, with a high rate of postoperative complications.

H.H. Kramer et al. in their study showed that in 13.3% of cases, patients with congenital heart defects had hereditary and teratogenic syndromes, and in 7.7% of cases, congenital defects of the kidneys, lungs, musculoskeletal system and central nervous system. In addition, anomalies of the upper urinary tract were detected incidentally during angiocardiography, and in 99.5% of cases, patients had no clinical manifestations of urinary tract pathology. The most common anomalies of the urinary tract were: complete duplication of the kidneys and ureters or hydronephrosis. There was no association of urinary tract defects with any specific heart defects. In similar studies, congenital defects of the kidneys and urinary tract were diagnosed in 11.9-25.8% of children without clinical urinary signs, genetic syndromes in 38%; Congenital malformations of the digestive system (CMD) - 19.6%

in. Italian researchers identified concomitant congenital malformations in 26% of children with congenital malformations. The association between the combination of interventricular defects, atrial septal defects and complex heart defects with other malformations was noted. The most common CMDs were CMDs of the musculoskeletal system (25.3%), genitourinary system (22.9%) and gastrointestinal system (11.5%). Karyotyping was performed in 19.4% of cases, chromosopathies were detected in 152 patients.

In 2014, L. Escedal et al., based on rat material, studied more than 3000 children with congenital heart defects, they noted that 20% of children had concomitant congenital diseases of the gastrointestinal tract (intestinal anomalies and esophageal atresia). Similar studies by foreign authors have shown that in 12% of children with congenital heart defects, there is a connection between the severity and combination of congenital malformations of the gastrointestinal and urinary systems, in 4.9% of cases there is a connection between chromosomal diseases and congenital heart diseases. with other congenital defects. Studies in which other congenital defects are combined with more congenital defects (45.9%) are described. Among them, facial anomalies (15%), genitourinary system (12%) and gastrointestinal diseases (11.1%) occupy the leading place. Ventricular and atrial septal defects, coarctation of the aorta, single ventricle, pulmonary stenosis, hypoplastic right heart syndrome, double outflow tract of the right ventricle, common atrioventricular connection, aortic anomalies are often accompanied by UTN (more than 50%). Splenic anomalies were more frequently associated with a single ventricle ($p < 0.002$). In 2015, M. Wojtalik et al. retrospectively studied 1856 pediatric cardiac surgery patients. Comorbid conditions were identified in 84 (4.5%) children. The most common anomalies included: digestive anomalies (35.7%) and urinary system (22.4%). The authors found no association between TYUN and concomitant congenital malformations. Multivariate logistic regression analysis showed that comorbid conditions significantly affected the time to surgery, course, and mortality of the combined pathology in children with heart defects. The mortality rate in children with congenital heart disease without TYUN was 8.9%, and in children with TYUN, the mortality rate was 19%. Up to 50% of these cases are neonatal patients. UTN was observed more often in children with ventricular septal defects (7.6%, $p = 0.0012$. In a prospective study by A. Meberg et al., among 662 patients with congenital heart defects, 22% of children with

concomitant congenital defects were identified. Atrioventricular septal defect, septal defect, tetralogy of Fallot, and single ventricle had the most UTN. Combined congenital defects were found in 31% of patients with VSD. The mortality rate in patients with congenital heart disease and comorbid diseases (29%) was significantly higher than in patients with isolated heart defects (6%). There is a study in Russian medicine that shows that more than 1/3 (28.6%) of children who died in the neonatal period had congenital defects. More than 50% most cases are combined with congenital heart disease. In a study by A. Amorim et al., extracardiac anomalies were found in 31.4% of newborns and 48% of stillbirths. In 23.1% of newborns and 32% of stillbirths, UTN was part of an unclassifiable syndrome. In the group of newborns, anomalies of the genitourinary system were more common in boys (48.3%); in the group of stillbirths, congenital heart disease was often combined with anomalies of the kidneys and urinary tract and defects of the musculoskeletal system (52.8%). In 2017, researchers Gonzalez J.H. et al. retrospectively analyzed the medical records of 223 newborns with a prenatal diagnosis of congenital heart disease. According to the analysis, prenatal abdominal ultrasound was performed in only 58.7% of cases, and associated anomalies were detected in 41.2% of cases. Among the detected congenital defects, clinically significant renal malformations or heterotoxic anomalies were present in 36.6% of cases. Patients with cardiac septal defects had 3.7 times more abnormal results on abdominal ultrasound than patients without congenital heart disease. Almost 50% of patients had one or more extracardiac or genetic diseases detected by ultrasound, neurosonography, or karyotyping. Based on the calculation of the financial costs of additional examination of children with concomitant pathologies, the authors propose a strategy for the diagnosis of UTN in neonatal cardiac surgery patients, including three screenings: brain and abdominal ultrasound and karyotyping. In addition to cardiac surgery, newborns with congenital heart defects require additional surgical procedures or intensive care to correct defects in other organs and systems. In 2018, K.A. Tokmakova showed in her work that extracardiac pathology in children is more common in 14.8% of cases. The condition of children with syndromic pathology is associated not only with the severity of heart damage, but also with various hereditary diseases that can lead to dysfunction of other organs and systems, thereby complicating the therapeutic and surgical treatment of the heart defect itself. In a study conducted by Yu.V. Petrenko et al., children with congenital heart defects had: diaphragmatic hernia in 5-18%, esophageal atresia in 15-39%, renal agenesis in 17-43%, anorectal anomalies in 22%, and central nervous system pathology in 15%. The study noted a correlation between diaphragmatic hernia and hypoplastic left heart syndrome with ventricular septal defect and coarctation of the aorta, and with anal atresia - with tetralogy of Fallot and ventricular septal defect. In 2015, D. Dilber and I. Malcić retrospectively analyzed the charts of 1480 newborns with congenital heart defects. The authors found that the most common anomalies were gastrointestinal tract (8.4%), chromosomal defects and syndromes, and multiple birth defects were found in 14.5% of patients.

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