

stairs, there was an increase in both systolic (in girls – by 13.3 [6.9; 19.1]%, in boys – by 8.3 [1.9; 8.8]%) and diastolic pressure (in girls – by 10.5 [3.8; 14.5]%), but it decreased in boys by 2.2 [10.0; 16.4]%, $p < 0.05$. Pulse pressure after the load in girls increased by 24.5 [5.7; 37.0]%, and in boys – by 25.9 [19.5; 36.1]%, $p > 0.05$. Heart rate increased in girls by 12.5 [2; 27]%, in boys – by 22 [8; 29]%, $p < 0.05$. After performing the load by climbing stairs with additional weight, there was an increase in both systolic (in girls – by 22.5 [19.0; 24.0]%, in boys – by 19.2 [14.7; 24.7]%) and diastolic pressure (in girls – by 10.5 [1.4; 16.5]%, but in boys it decreased by 4 [14.8; 14.9]%). Pulse pressure after exercise in girls increased by 44 [26; 52.2]%, and in boys – by 28.1 [15.1; 58.5]%, $p < 0.05$. Heart rate increased in girls by 15.8 [2.4; 38.5]%, in boys – by 33 [14; 42]%, $p < 0.05$.

Conclusion. During the exercise tests, some differences in the response of the cardiovascular system of girls and boys to exercise were revealed. In particular, girls showed a more significant increase in systolic blood pressure, as well as pulse pressure, but boys showed a more significant increase in heart rate, and the diastolic pressure value decreased, unlike girls, in whom it increased.

During physical exercise by climbing stairs with an additional load, the increase in systolic pressure was greater, than when climbing stairs without an additional load, while there were no differences in the increase in systolic pressure in girls and boys. As for diastolic pressure, in boys, in contrast to girls, it was noted to decrease, and to a greater extent than without an additional load. In girls, the increase in pulse pressure increased, and in boys, a higher increase in heart rate was noted.

DOUBLE OUTLET RIGHT VENTRICLE IN COMBINATION WITH MULTIPLE CONGENITAL HEART DEFECTS

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Introduction. Double outlet right ventricle (DORV) is characterized by both great arteries, aorta and pulmonary artery arising from the right ventricle. Here both large arteries are fully or partially connected to the right ventricle, more than 50% of each great vessel arises from the right ventricle, which is known as “the 50% rule”. DORV can occur as a single condition or in combination with other cardiac or noncardiac anomalies. This condition is rare and estimates about 1%-1.5% of all congenital heart diseases.

Aim of the study. Analysis of the treatment plan with respect to this complex case of double outlet right ventricle and its associated cardiac anomalies.

Materials and methods. The patient in this case study was examined at the Grodno Regional Children’s Hospital. Patient details are kept confidential, while

the article is written anonymously. Information was collected by analyzing the case history of this 9-year-old female patient which includes daily observation of the patient using clinical, functional and laboratory investigations.

Results and discussion.

A 9-year-old girl presented to the children's hospital with shortness of breath. She is a patient with congenital heart disease that is double outlet right ventricle complicated with severe hypoplasia of the right ventricular outflow tract, pulmonary trunk and left pulmonary artery. In addition, the patient also has a complete atrioventricular communication, secondary atrial septal defect, patent ductus arteriosus and mitral valve insufficiency.

The patient was a premature c-section child born at 37 weeks with birth weight of 1900g. Her past illnesses comprise common cold and she has undergone many surgeries due to her congenital heart disease. A visible scar is present on the anterior chest due to previous surgeries. Her weight is 24 kg and height are 131cm. Pulse rate and blood pressure is normal. The respiratory rate of the patient is 23 breaths per minute.

Auscultation of the heart shows rhythmic sounds with increased murmurs over the pulmonary artery area, systolic murmurs heard over the entire surface of the heart. Auscultation of lungs shows vesicular breath sounds without any wheezing. The patient's full blood report and biochemical analysis is normal. Echocardiography indicates that she has pulmonary artery stenosis, left atrial insufficiency, and mitral valve insufficiency of the 2nd degree. There is thickening of the atrial septum after the closure of ASD. X-ray shows dilation of the right pulmonary vessels at the root of the lung, sclerotic changes in the right lung with lower lobe pneumonia.

In the first 6 months of life, a Blalock-Taussig shunt was done, this creates a pathway for blood to reach the lungs. The reimplantation surgery of the left pulmonary artery was done along with the BT shunt. The pulmonary circulation of the patient was restored. Two years later, a modified BT shunt and stenting of the pulmonary trunk was done to prevent stenosis.

Three years after birth surgical correction of the DORV and complete atrioventricular communication with the removal of the pulmonary artery stent was done. The right ventricle outflow tract was constructed through plastic surgery. Current treatment plan includes Asprin, Clopidogrel, Molsidomine, Metoprolol, Atorvastatin and Lanzoprazole.

This patient had a Blalock-Taussig shunt which is a connection made between the right subclavian artery and the right pulmonary artery. Some of the blood flowing through the aorta towards the body will shunt through this connection and flow into the pulmonary artery to receive oxygen. This was intended for the correction of pulmonary stenosis and the pulmonary trunk hypoplasia. The reimplantation surgery of the left pulmonary artery done along with the BT shunt helps to restore the pulmonary circulation. Stenting of the pulmonary trunk was done to prevent pulmonary artery stenosis. Complete atrioventricular correction is necessary to normalize the outflow tract of the right ventricle.

The medical management of this patient is aimed at secondary prevention of cardiovascular events. Thromboprophylaxis is achieved through Aspirin and Clopidogrel, blood pressure control – through Metoprolol and Molsidomine. Atorvastatin is given for lipid control.

Conclusion. Double Outlet Right Ventricle is a rare form of congenital heart disease with high complexity. Surgical intervention of the anatomical defects should be done early in life to prevent mortality and regular follow-ups are necessary to prevent morbidity and development of complications.

TOTAL VASCULAR ISOLATION IN SEGMENTAL LIVER RESECTION FOR ECHINOCOCCAL CYST

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Introduction. Echinococcal disease is widespread in many countries of the world. According to some estimates, more than 1 million people in the world are currently affected by echinococcosis, and the incidence in some endemic and non-endemic regions varies more than 200 times. In the last decade, there has been an increase in the incidence of echinococcosis and the expansion of the geographical boundaries of the disease.

Aim of the study. To improve the results of surgical treatment of patients with echinococcal liver cysts.

Materials and methods. The article presents the results of surgical treatment of two patients who underwent segmental resections of the liver for echinococcosis using the technique of total vascular isolation. Patients were admitted to the Department of Surgical Pancreatology, Hepatology and Transplantation of Grodno Regional Clinical Hospital, Belarus with complaints of heaviness and aching pain in the right upper quadrant of the abdomen. Both patients underwent a complex of laboratory and instrumental research methods, including MRI, CT and ultrasound of the abdominal and retroperitoneal organs. According to MRI, both patients in the S7 segment of the liver subcapsularly revealed rounded focal formations with clear contours of 50*33 mm and respectively 45*30 mm, with the presence along the posterior wall of a hyperdense component with clear contours of 5 * 6 mm. The fact of the close location of liquid formations to the right hepatic vein in both cases has been established.

Patients underwent segmental resection of the liver for an echinococcal cyst using the method of total vascular isolation. In both cases, a laparotomy was performed with a J-shaped approach in the right upper quadrant of the abdomen. To carry out total vascular isolation of the liver, the inferior vena cava in the supra- and subhepatic sections, as well as the hepatoduodenal ligament were mobilized using a thread-Pringle maneuver. During the