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AN IN DEPTH ANALYSIS OF THE COARCTATION OF AORTA IN CHILDREN OF GRODNO REGION

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Introduction. Coarctation of the aorta (CoA) is a relatively common defect that accounts for 5-8% of all congenital heart defects [1,2]. Coarctation of the aorta is a localized narrowing of the aortic lumen that results in upper-extremity hypertension, left ventricular hypertrophy and if severe, malperfusion of the abdominal organs and lower extremities [3,4]. In children COA can be combined with other congenital heart defects such as bicuspid aortic valve, subaortic stenosis, patent ductus arteriosus, ventricular and atrial septal defects [5].

Aim of the study. To investigate and analyse coarctation of aorta cases and parameters that correlate to it in order to increase efficiency of treatment and to prepare for future cases in order to increase the efficiency of treatment and management.

Materials and methods. 23 case histories of children diagnosed with coarctation of the aorta were analyzed over the period years from 2017 to 2022 in Grodno Children's Clinical Hospital. Statistical processing of the data is obtained as a result of the research was carried out using traditional methods of variation statistics using the application package "STATISTICA 10.0)" and "EXCEL". When comparing relative frequencies within one or two groups, a two-tailed Fisher test was used.

Results and discussion. Full term newborns were predominated 16 (69.6%) and premature children were only 7 (30.4%), $h=0.01$. The number of male patients was 14

(60.87%) and female patients – 9 (39.13%), $p=0.14$. By age, patients were distributed as follows: newborns accounted for 47.8%, at the age of 7 months -1 year – 17.3%, over 1 year – 34.9% of children.

At the time of admission to the hospital, the patient's condition was assessed as severe in 12 cases (52.2%), moderate – in 4 (17.4%), satisfactory – in 7 (30.4%). Average O₂ saturation of patients on admission was 95.1%.

When evaluating the clinical picture, 5 (21.7%) cases of dyspnea, 3 (13.0%) cases of fever, 2 (8.7%) cases of cyanosis, 3 (13.0%) presented with respiratory symptoms (this includes cough, nasal congestion, wheezing, acute respiratory insufficiency, etc) and joints pains were present in 2 (8.7%) cases.

Blood pressure in lower limbs was dropped in 16 (69.6%) of patient. Pulsation of the femoral artery was reduced in 5 (21.8%) patients. In 10 (43.4%) patients breathing rate was increased. Systolic murmur was present in 16 (69.6%) cases. Out of that murmur was localized at the left edge of the sternum in 3 (18.7%) patients, 7 (43.8%) in the entire heart, 2 (12.5%) at the base of the heart and in 4 (25%) patients at the 5th ^{point}.

Heart failure was seen in most of the patients. 5 (21.7%) of the patients had heart failure of class IA, 6 (26.0%) had heart failure of class IIA.

Concomitant diseases were present as follows: anemia in 6 (26.0%) patients, protein deficiency in 4 (17.4%), cerebral ischemia in 2 (8.7%), encephalopathy in 3 (13%), psychomotor functional retardation in 1 (4.3%) patient and newborn respiratory insufficiency in 6 (26%) patients.

Other cardiac pathologies and deformations were present as such: atrial septal defect in 4 (14.8%) patients, aortic valve hypoplasia in 1 (4.3%), mitral regurgitation in 1 (4.3%), hypoplasia of aorta in 3 (13.0%), bicuspid aortic deformation in 1 (3.7%) patient, congenital pulmonary arterial defect in 1 (4.3%), ventricular septal defect in 1 (4.3%), arterial hypertension in 1 (4.3%), pulmonary hypertension in 1 (4.3%), arteriovenous malformation of lung vessels in 1 (4.3%), stenosis of pulmonary veins in 1 (4.3%), other pulmonary vessel defects in 2 (8.7%) cases.

Surgical correction was done to 17 patients (73.9%) out of which 1 patient passed away. Pharmacological treatment were given as follows: 8 (34.8%) patients were given diuretics, 8 (34.8%) were given ACE inhibitors and 4 (17.4%) were given digoxin.

Conclusion.

1. Among these children with coarctation of aorta, full-term newborns were predominated 16 (69,6%), $h=0,01$.

2. Analysis of data obtained showed newborns' respiratory insufficiency (26,0%) and protein calorie deficiency (17,4%) as main concomitant diseases in children with coarctation of aorta.

3. A high frequency of children with coarctation of aorta presented with heart failure (47,8%). In significant number of patients' (69,6%) lower limb blood pressure was reduced.

4. Surgical correction was done in 73,9% patients ($p=0,002$).

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TRANSPLANTATION OF AORTIC ALLOGRAFTS IN COMPLICATIONS OF RECONSTRUCTIONS OF THE AORTO-FEMORAL SEGMENT

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Introduction. Prosthetic graft infection is one of the most dreaded vascular complications with mortality rate ranging from 9% to 28% and limb loss ranging from 10% to 20% of the cases. In this setting, prosthetic graft excision plays a decisive role for the eradication of infection [1]. A promising modern option for the restoration of in-line flow may be the use of allograft vascular structures with elements of transplantation technologies after explantation of synthetic material [2].

Aim of the study. To substantiate a modern tactical algorithm and the technical specifics of operational approaches for infection of synthetic explants after reconstruction of the aorto-femoral segment.

Materials and methods. 5 male patients (from 58 to 76 years old) with clinical manifestations of prosthetic infection and its complications in the early and late postoperative period underwent explantations of synthetic prosthetic structures and repeated reconstructions by allotransplantation of aortic homografts. In three patients, the phenomena of infection and suppuration of synthetic prostheses were observed. There was presence of groin fistula after surgery in 4 months and the formation of a secondary aortic fistula took place 6 years after the primary reconstruction in other two patients. The indications for repeated operations were suppuration and fistulas of postoperative wounds with septic somatic reaction and recurrent bleeding.