Echocardiographic indicators

Parameters	EDS, cm	ESS, cm	EDV, ml	ESV, ml	LA, cm	EF, %
Before operation	6,7 ± 0,1	4,9 ± 0,5	258 ± 30	127 ± 1,5	7,8 ± 0,3	50,8 ± 1
After operation	5,9 ± 0,5	4,1 ± 0,3	173 ± 48,5	72 ± 10,5	4,8 ± 1,0	58 ± 1

N o t e : EDS – end-diastolic size, ESS – end-systolic size, EDV – end-diastolic volume, EDV – end-systolic volume, LA – left atrium, EF – ejection fraction.

We performed mitral valve replacement with suture ligation of the left atrial appendage in 111 patients (63 %), Another 62 patients (35,2 %) received the Kawazoe atrioplasty, three patients (1,7 %) had Mercedes type atrioplasty, and in five cases, we performed additionally the maze procedure. The LA cavity was measured in 27 control patients (41,5 %) using echocardiography: LA volume was 270 ± 60 mL preoperatively, and 140 ± 25 mL postoperatively.

Intraoperatively, we measured the left atrial volume in 38 (58,5 %) patients in Group 2 using the methodology developed in our clinic: 520 ± 50 mL before and 175 ± 20 mL after the operation. We would question the reliability of the echocardiographic measurement of the LA volume when the preoperative reading had been 265 ± 40 vs. 140 ± 15 mL postoperatively.

The method we developed is as simple as that: a surgical glove would be placed into the left atrium preoperatively, then filled with saline, and the volume of fluid instilled would be accurately measured. The same manipulation would be done after the completion of atrioplasty.

Results: Left atrioplasty resulted in shrinkage of the left atrium from 8,6 cm to 5,4 cm, on average (Group 1). In immediate postoperative period, only 87 (49,3 %) patients required inotropic support with Dopamine up 5 mg per kg body weight per minute. The remaining patients did not need any cardiotonic agents. Atrial fibrillation disappeared in 94 (53,4 %) patients.

Conclusions: 1. Left atrioplasty does result in a marked reduction in the LA size, resolves the left postero-basal left ventricular compression syndrome, reduces the tracheal bifurcation angle, and decompresses the left main bronchus and the lower lobes of the right lung. This explains the drop in frequency and duration of acute heart failure early postoperatively.

2. Secondary to decompression of the left main bronchus and the lower lobes of the right lung, the length of postoperative lung ventilation would shorten, the lungs would spread better; hence, the incidence of postoperative pulmonary atelectasis, pneumonia and tracheobronchitis would drop. As a result, the patients would have a shorter stay in the ICU, rehab quicker and generally, have a shorter length of stay in the hospital.

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THORACOTOMY APPROACH IN REPLACEMENT OF TRICUSPID VALVE: TACTICS AND OUTCOMES

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Objective of the research: define surgical tactics for replacement of tricuspid valve.

Material and methods: From 2007 to 2014, eighteen patients underwent tricuspid-valve replacement (TVR) at the National Scientific Center of Surgery named after A.N. Syzganov. In half (nine patients), TVR followed prior operations on repair of acquired heart diseases. Six patients (33,3 %) had Ebstein anomaly, two were drug addicts with infective endocarditis, and another one had traumatic tricuspid regurgitation. Four were male, 14 female (22,2 % vs. 77,7 %). Two (11,11 %) were in ACC stage B, with remaining sixteen (88,9 %) in ACC stage 3. Four (22,2 %) patients were in NYHA class III, while 14 (77,7 %) were in NYHA class IV. Fourteen had regurgitation Grade 3 to 4, two patients had combined heart disease, while two had stenotic tricuspid valve with calcified cusps.

Results: All eighteen patients underwent tricuspid-valve replacement: four (22,2 %) were implanted with *MedInge*-2 33 sized prosthesis (Russia), while fourteen (77,8 %) were implanted with bioprostheses (*Pericor*, *Comcor,* Russia). In nine patients (50 %) who previously underwent mitral and aortic valve replacement and were on continuous anticoagulation, the following tactics was chosen: right sided thoracotomy approach through the 4th intercostal space was attempted in 6 (66,7 %) patients, CPB was initiated in a standard way, though a 9-size cuffed intubation tubes were used instead of venous cannulae through the pericardium, without any cardiolysis. This helped us avoid circumventing the venae cavae, thus considerably reducing the bleeding. In three patients, the heart prostheses were implanted under parallel perfusion, using continuous Prolene 2/0 suture, with 2 or 3 mattress sutures in the bundle of His area.

In 8 of 18 cases the aortic cannula was inserted in the ascending aorta, while in the remaining cases the left femoral artery was cannulated. In nine patients, we were lucky not to release the heart of cohesions and had a routine operation. Four patients (22,2%) required inotropic support with Dopamine (5 mg/kg body weight per minute), another four (22,2%) needed up to 10 mg/kg body weight per minute. The rest of the patients did not require any cardiotonic agents. No deaths or complications were observed. The patients were discharged on day 12 to 14 post-op.

Coclusions: In patients with previously implanted mitral or aortic prostheses and on VKA anticoagulation, tricuspid-valve replacement should be performed via thoracotomy, under parallel perfusion, with 9-size cuffed intubation tubes used instead of venous cannulae. This does not deteriorate the pump and contractile function of the left ventricle, while improving the respiratory dysfunction. When performing primary tricuspid valve repair, the surgical approach and all the rest is done a routine fashion.

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ANALYSIS OF THE HEALTH STATUS OF THE STUDENTS ENROLLED IN THE MAJOR HIGHER EDUCATIONAL INSTITUTIONS OF THE ALTAI TERRITORY IN THE 2014–2015 ACADEMIC YEAR

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In recent years, modern man is increasingly looks narrowly at the state of their own health and of their children. He began to undergo regular medical examinations to monitor the quality of the food, engage in physical culture, he giving up bad habits.

According to the Federal State Statistics Service, since 2000 on average number of born alive per year, 36,6% children born sick with various diseases, 3% – with congenital anomalies, 50,3% – with individual adverse conditions originating in the perinatal period. To 7 years almost 33% of children diagnosed with chronic diseases, and to 14 years - variations in health status have almost 60% of adolescents [2]. According to the chairman of the Public Chamber of Russia Yevgeny Ochkasova in 2013 only 10% of high school graduates can be called healthy [1].

If only 10% of high school graduates can be considered relatively healthy, what happens to them in higher educational institutions (later in universities)? Obviously, the health of students during the years of education only gets worse: suffering mental health, musculoskeletal system, cardio – vascular and respiratory system, digestive organs, deteriorating eyesight and other organs and body systems.

As a result of the medical examination first-year students, by health workers, all students of educational institutions for physical training, depending on the state of health, physical development and functional training are divided into three groups: primary, preparatory and special. Separately distinguished students who are fully exempt from the practical lessons on discipline "Physical training".

In order to determine the state of health of students of the Altai Territory, we have analyzed the results of the medical examination of freshmen 2014–2015 academic year, the five main universities of Altai Territory: Altai State University (AltUni), Altai State Technical University the name of I.I. Polzunov (AltTechUni), Altai State Agricultural University (AltGAUni), Altai State Pedagogical University (AltGPUni) and the Altai State Medical University (AltGMUni). A total of 5532 analyzed the results of the medical examination of first-year students of full-time academic year 2014–2015 (Table 1).

The obtained results showed, that to the primary group of health for physical training, there are 3478 students, accounting for 62,87% of the total number received, the preparatory – 817 students, accounting for 14,77%, to a special medical group there were 1061 students (19,18%).

It is worth noting, that according to the results of the medical examination, to the primary group of health belong practically healthy students with minor deviations in health, good physical development and physical preparedness.

Table 1

The distribution of first-year students on medical teams for the physical training

Indicator	Medical teams			
	Primary	Preparatory	Special	Exemption
Number of students	3478	817	1061	176
% o students	62,87	14,77	19,18	3,18