

antibodies, even the incidence of weak DSA or non-DSA at MFI $\geq$ 500 was higher in the graft loss group than in the non-rejector group (88% vs. 55%; $p=0.003$). Interestingly, when C1q binding ability in sera of rejectors and non-rejectors with DSA was compared, none of the non-rejectors demonstrated C1q positivity, whereas 43% of rejectors showed C1q positive antibodies, although not necessarily donor-specific ($P=0.005$).

Conclusions

Our data show, that the posttransplant presence of HLA antibodies, especially if C1q binding, and/or de novo, is associated with graft loss, even if the antibodies are not specific for mismatched donor HLA. Our findings suggest that when DSA are detected in the absence of C1q positivity, additional parameters should be taken into consideration before initiating rejection therapy. Combining the solid phase techniques with complement detection is a promising new approach in the field of antibody testing. We also provide a summary of the recommendations formulated by The Transplantation Society (TTS) as an international effort in antibody monitoring in organ transplantation.

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WHAT CAN MEDICAL ENGINEERING DO FOR HEART FAILURE PATIENT? PERSONALIZED 3D RECONSTRUCTION AND SURGICAL REPAIR OF LEFT VENTRICULAR ANEURYSM

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Objectives: Improved diagnosis of heart failure, increased survival after myocardial infarction and aging population are responsible for continuous growth of heart failure prevalence. These changes will increase the total number of heart failure patients and the rates of hospitalizations/rehospitalization worldwide just like in Hungary.

Background: New surgical therapy strategies need to be developed for symptomatic patients, which can keep pace with the improving medical science. Circular ventricle resection techniques are the gold standard of left ventricle restoration, but these techniques can lead to suboptimal results. Postoperative systolic resection can be inadequate because of the resection line must be created in diastole stopped heart. Consequently the low cardiac output – due to insufficient left ventricular volume – is a potentially unstable condition, and later cannot be corrected by surgically. **Methods:** We have created a novel method combining surgery with gadolinium enhanced magnetic resonance imaging (MRI) to construct a preoperative 3D systolic heart model. The model was utilized to determine resection points, which could be intraoperative used. According to our calculations with the predetermined resection line the calculated percentage reduction in LV volume was above 30%, and LV volumes were predicted above normal values. Our method presents a real life patient group: mitral insufficiency and moderate pulmonary hypertension were not an exclusion criteria.

Results: 41 procedures were done in the Heart and Vascular Center, Budapest, Hungary. Control MRI showed a significant improvement in ejection fraction (18.3 ± 4.3 vs. 31.3 ± 3.3 ; $p < 0.04$, paired t-test), and significant reduction of left ventricular end diastolic volume (263.7 ± 76.3 ml vs. 174.3 ± 34.8 ml, $p < 0.03$, paired t-test). All patients significant improved in classification of NYHA postoperatively (preoperative 41 patients NYHA III/IV vs. postoperative 39 NYHA I/II, $p < 0.04$, chi-square test). The 3 year mortality was improved by 26% using Kaplan-Meier curve and log rank test.

Conclusions: Using this model we were able to find the optimal resection line preoperatively and used these calculated resection points during the operation. Thus minimize risk and maximize outcome in ventricle restoration surgical therapy.

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ATHLETIC LEFT VENTRICULAR PARAMETERS CORRECTED WITH TRABECULAR MASS

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Introduction: The cardiac magnetic resonance examination is the gold standard method to determine the normal and athletic left ventricular parameters. The formerly available software did not enable a quantitative analysis of myocardial trabeculation. **Study aims:** Our goal was to determine the athletic left ventricular MR parameters and examine the impact of the new trabecula measurement method on the left ventricular athletic parameters. **Methods:** Cardiac MRI examination was performed on 126 top athletes (107 male, 19 female) and on 54 healthy volunteers (40 male, 13 female). Groups of male kayak-canoe ($n = 35$), rowing ($n = 10$), water-polo ($n = 24$), cycling ($n = 7$), football ($n = 6$), kickboxing ($n = 8$), handball ($n = 6$), ultra-marathon runners ($n = 5$) and rattle ball ($n = 6$) were isolated. The Medis QMass MR 7.5 and new 7.6 quantification software were used to determine normal values. With the new 7.6 software it is possible to analyze myocardial trabeculation quantitatively compared with the 7.5, which does not detect the trabeculae. **Results:** The athletes groups left ventricular volumes and myocardial mass indexes (LVMI) were higher, than control groups' with both methods. Comparing the two methods the new 7.6 analysis resulted lower left ventricular volumetric parameters (end-diastolic, end-systolic, stroke volume indexes) and higher LVMI in the athletes (male: 110.3 ± 18.9 vs 88.4 ± 16.5 g/m 2 ; female: 92.0 ± 11.6 vs 75.1 ± 8.6 g/m 2) and in the control groups (m: 87.6 ± 11.1 vs 69.6 ± 8 g/m 2 ; f: 66.8 ± 6.5 vs 53.1 ± 4.6 g/m 2) as well. The weight of the male sports heart trabecular mass (TrM) exceeded the control group's TrM (42.7 ± 10.3 vs 38.0 ± 7.8 g, $p = 0.01$), although the TrM% (trabecular (g) / LVM (g) * 100) was higher in the controls (21.1 ± 3.8 vs 18.8 ± 3.5). Myocardial trabeculation showed no significant difference between female groups. Comparing the trabecular mass corrected left ventricular parameters of different sports, LVMI was higher in kayak-canoe compared to water-polo. Kickboxing and rattle ball were not significantly different from the control group. **Conclusion:** The new method of myocardial trabeculation measurement could fundamentally alter the normal left ventricular parameters.

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СРАВНЕНИЕ ТЕХНИК ЛАПАРОСТОМИИ У ПАЦИЕНТОВ С ГНОЙНЫМ РАСТРОСТРАНЕННЫМ ПЕРИТОНИТОМ

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COMPARISON OF OPEN ABDOMEN MANAGEMENT TECHNIQUES IN PATIENTS WITH SEVERE PERITONITIS

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Peritonitis is a life-threatening condition that occurs as complication of various abdominal diseases. It needs complex medical therapy, but surgery is a procedure of choice. Despite rich experience of surgeons worldwide the mortality rate is still too high, achieving in some centers up to 70%. The purpose of the study was to show benefits of using vacuum-assisted laparostomy, its impact in decreasing postoperative complications and mortality rate among patients with severe peritonitis. The study suggests that severe peritonitis still tends to be life-threatening condition with high mortality rate. The use of vacuum-assisted laparostomy decreases both