

Summaries of Articles

Comparison of Conventional and Magnum Magnarail Angioplasty Methods in the Treatment of Chronic Total Coronary Artery Occlusion

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Angioplasty of chronic total coronary occlusion has lower success and higher restenosis rates when compared with subtotal lesions. This retrospective study was performed to compare the success and complication rates of conventional and magnum magnarail methods in patients who underwent coronary angioplasty for chronic total coronary artery occlusion.

The material consisted of 71 patients (65 male, 6 female; mean age 51 ± 9.1 years) with chronic total coronary artery occlusion. Patients with estimated occlusion age more than 3 months and with unfavorable anatomy for angioplasty were excluded from the study. Coronary angioplasties were performed by using the conventional method in 36 patients (37 lesions) and by Magnum Magnarail system in 35 patients (35 lesions).

There were no differences between two treatment groups in respect to clinical characteristics (gender, age, stable and unstable angina, previous myocardial infarction) and coronary angiographic findings (diseased vessel and lesion distribution). The procedure was successful in 28 of 37 lesions treated by the conventional method (primary success rate 75.1%; residual stenosis $18.8 \pm 8\%$).

When results of both groups were assessed together, the procedures were successful in 55 of 72 total coronary artery occlusions and mean residual stenosis was found to be $18.1 \pm 9\%$. There were no complications with either method. It is concluded that the results of both the conventional and the Magnum Magnarail angioplasty methods in the treatment of chronic total coronary artery occlusion were similar and that both methods can be safely used in selected patients.

Troponin T in Stable and Unstable Angina Pectoris

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The aim of the study was to investigate whether or not myocardial damage develops in patients with stable angina pectoris (SAP) and unstable angina pectoris (UAP). We studied 75 patients comprising 48 with UAP and 27 with SAP. Blood samples were taken for CK, CK-MB, LDH, SGOT and cardiac troponin T (cTnT), a new cardiac-specific marker of myocardial damage that is recently in clinical use. The normal range for cTnT was accepted as 0.4 ng/ml. Fourteen healthy volunteers formed the control group in whom cTnT values were normal. However, cTnT was elevated in 29/48 (60%) patients with UAP, 15/27 (56%) patients with SAP. The highest value of cTnT was 1.9 ng/ml in patients with UAP, 1.2 ng/ml in patients with SAP. In none of the patients was CK, CK-MB, LDH or SGOT activity elevated. Three patients with an elevated level of cTnT developed acute myocardial infarction before discharge.

In conclusion, the findings of our study suggest that a significant portion of patients with SAP and UAP develops small myocardial injury. These patients were not detected by current routine clinical and laboratory procedures. It remains to be shown whether a poorer prognosis may be expected in these patients, and cTnT may allow selection of patients who may benefit from early intervention.

Relation Between Left Ventricular Diastolic Function and Haemodynamics Assessed by Pulsed Doppler Echocardiography in Patients with Dilated Cardiomyopathy

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To determine whether a relationship exists, between left ventricular diastolic function and haemodynamics, Doppler indexes of left ventricular diastolic function in 19 patients with dilated cardiomyopathy and right heart pressures were measured. Patients were classified into two groups according to func-

tional class. Group I consisted of 11 patients in NYHA functional Class I or II; group II included 8 patients in functional Class III or IV. Left ventricular dimensions, ejection fraction, fractional shortening, left ventricular mass and mass index, E and A velocity, E/A, E/A integral, atrial filling fraction, isovolumic relaxation time (IRT) were computed from pulsed-wave Doppler and M-mode echocardiography. No difference was observed between groups in regard to age, heart rate and M-mode-echocardiogram-derived indexes of systolic function.

Mean peak early velocity (E velocity) was higher, atrial velocity (A velocity) was lower, the ratio of early to late velocity (E/A) was higher in group II than in group I ($p<0.05$). Mean right atrial, pulmonary artery and pulmonary capillary wedge (PCWP) pressures were measured higher in group II than in group I ($p<0.05$). A correlation ($r=0.68$) was observed between mean pulmonary artery pressure and E/A ratio in all patients. Mean PCWP also correlated significantly with E/A ratio in 6 patients with severe mitral regurgitation ($r=0.86$). In conclusion, the higher the E/A ratio in patients with dilated cardiomyopathy, the more severe heart failure and mitral regurgitation may be considered.

Surgical Treatment of Acute Aortic Dissection and Retrograde Cerebral Perfusion

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Three patients underwent resection and graft replacement of ascending aorta and aortic arch for acute Type I dissection. Retrograde cerebral perfusion through the superior vena cava canula was used as an adjunct to deep hypothermic total circulatory arrest. The underlying idea was to protect cerebral tissue and to prevent air and particulate embolism. On the first postoperative day, all three patients were found awake and conscious. Oxygen saturation and blood glucose determinations in blood perfused through the superior vena cava and in venous blood returning from the carotid orifices indicated that cerebral metabolic activity persisted even during deep hypothermic total circulatory arrest.

Oxygen saturations and blood glucose levels were found lower in the blood, returning from the carotid

orifices than the blood perfused through the superior vena cava. This technique seems as an easy procedure to apply and provides advantages during surgical treatment of aortic dissection and aortic arch surgery.

Ventricular Late Potentials in Healthy Adults

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The aim of this study is to investigate signal-averaged electrocardiogram (SAECG) parameters in healthy people. For this purpose, 54 people (23 women and 31 men, age 46.17 ± 11.95 years) with no complaints, normal blood pressure and normal resting and exercise ECG's were evaluated. Holter recordings were completely normal in all subjects. SAECG recordings were done by Marquette Case 15 computerized ECG system. A mean of 256.8 ± 15.4 beats were averaged out of 265.3 ± 24 detected beats. Mean unfiltered QRS duration (uQRS) was 77.3 ± 10.3 msec. Mean filtered QRS duration (fQRS) was 105.9 ± 9.9 msec, high frequency low amplitude signal duration (HFLA) was 20.7 ± 6.7 msec, and root mean square voltage (RMS) was 98.6 ± 45.9 mV at 25-250 Hz BF. At 40-250 Hz BF, mean fQRS was 96.9 ± 8.5 msec, mean HFLA was 26.4 ± 7.3 msec, and mean RMS was 61.5 ± 32.6 mV.

Mean fQRS was 84.5 ± 9.2 msec, mean HFLA was 26.6 ± 6.8 msec, and mean RMS was 31.4 ± 16.9 mV at 80-250 Hz BF. One of our subjects (1.9%) fulfilled all of the five criteria and one another (1.9%) fulfilled four. In addition three subjects (5.6%) presented with three criteria, seven (13%) presented with two criteria and 12 people (22.2%) presented one late potential criterion. fQRS durations at all BF were significantly longer in men ($p<0.0001$, $p<0.0001$ and $p<0.0001$, respectively).

On the other hand HFLA at 25-250 Hz BF was significantly longer in women ($p<0.007$). SAECG parameters in healthy subjects fitted normal distribution rules, but all parameters had wide skewness and kurtosis ranges. It is to be concluded that, the great variability observed at SAECG parameters of healthy people makes the sensitivity of SAECG in predicting sudden death controversial, and more studies are needed to rejudge the predictive value of SAECG in arrhythmias.

Diastolic Functions in Behçet's Disease with Pulsed Doppler Echocardiography

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By using pulsed Doppler echocardiography, diastolic functions of 20 patients with Behçet's disease without systolic dysfunction, were compared to 19 healthy subjects. In mitral flow, VTI E/VTI total, V peak E, V peak E/A were decreased, VTI A/VTI total, V peak A were increased in patients with Behçet's disease, but none to a statistically significant degree. In tricuspid flow, VTI E/VTI A, VTI E/VTI total and V peak E/A decreased, VTI A, VTI A/VTI total and V peak A diminished in patients with Behçet's disease, but only an increase of VTI A was significant (5.7 ± 1 vs 4.6 ± 1 cm, $p < 0.05$). Hence, significant diastolic dysfunction was not detected in patients with Behçet's disease except for a rise in tricuspid VTI A.

Effects of Trimetazidine on Left Ventricular Function in Patients with Acute Myocardial Infarction Treated with Thrombolytic Agents

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We investigated the effect of trimetazidine (TMZ) on left ventricular function and infarct size in 35 acute myocardial infarction (AMI) patients to whom streptokinase (SK) was administered. Seventeen (group A) were given 40 mg TMZ orally on admission and then continued with a dose of 20 mg three times a day. The other eighteen patients (group B) served as the control group. Early stage (in the first five days) and follow up (1st and 3rd month) echocardiography and radionuclide ventriculography (RNV) were carried out. Coronary angiography was performed in 30 patients (15 from each group) on the 10th day of AMI. There was no difference in age, sex, atherosclerotic risk factors and old myocardial infarction between the groups A and B. Average angina period was 3.1 ± 1.5 h in group A and 3.1 ± 1.3 h in group B before SK administration was initiated (NS). Localization of AMI, rhythm and conduction disturbances and heart failure did not show any significant difference in group A and B. The number of diseased vessels and extension of lesions were also similar in each group. Wall motion score

index was estimated with echocardiography. It was 6.7 ± 3.4 at the early stage, 4.1 ± 3.7 (1st month), 2.6 ± 0.7 (3rd month) in group A, and group B it was 4.7 ± 2.3 , 3.2 ± 1.8 , 2.6 ± 2.2 , respectively.

Ejection fraction (EF) was determined with RNV. In patients with anterior infarction in group A, EF was $28 \pm 13\%$ (early stage), $31 \pm 17\%$ (1st month), $37 \pm 17\%$ (3rd month); in group B it was $29 \pm 8\%$, $35 \pm 9\%$, $36 \pm 9\%$, respectively (NS). In patients with inferior infarction in group A, estimated EF was $46 \pm 4\%$ (early stage), $53 \pm 4\%$ (1st month), $55 \pm 1\%$ (3rd month); in group B it was $46 \pm 6\%$, $52 \pm 5\%$, 53 ± 4 , respectively (NS). Also, there was no significant difference between the estimated EF values at the early stage, in the first and third months in both groups of patients with anterior and inferior MI. In conclusion, TMZ appeared to have no effect on left ventricular function in the early phase of AMI in patients treated with thrombolytic agents.

Transesophageal and Transthoracic Two-dimensional Color Doppler Echocardiography and Magnetic Resonance Imaging in the Diagnosis of Atrial Septal Defect

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We investigated the role of transthoracic (TTE) and transesophageal (TEE) 2-dimensional color Doppler echocardiography and magnetic resonance imaging (MRI) in the diagnosis of atrial septal defect (ASD) in 9 adult patients with ASD. The diagnosis was confirmed by TEE in 8 patients and by TTE in 1 patient who did not tolerate TEE. MRI showed ASD in 7 of 8 patients. MRI failed to show ASD in 1 patient who was diagnosed as ASD by cardiac catheterization and TEE. We conclude that TTE coupled with TEE is superior to MRI in the diagnosis of ostium secundum type of ASD.

Marfan Syndrome: Surgical Management of Cardiovascular Complications

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Marfan syndrome's major manifestations involve the skeletal, ocular and cardiovascular systems. Multiple

studies in patients with Marfan syndrome indicated that cardiovascular involvements may produce aneurysmal dilatation of the ascending aorta, aortic valvular regurgitation, aortic dissection, mitral valve prolapse and mitral regurgitation. These lesions are responsible for over 90% of deaths often in the third through fifth decades of life in patients with Marfan syndrome.

In this paper 7 patients with Marfan syndrome, who underwent cardiovascular evaluation, were treated by combined composite valve graft replacement of the aortic root (5 patients), mechanical valve prosthesis replacement of the aortic valve and mitral valve replacement with mechanical valve prosthesis (one patient each). Patient follow-up ranged from 2 months to 4 years during which one patient died due to valve thrombosis 9 months postoperatively.

Apolipoprotein E Polymorphism and its Effects on Hyperlipoproteinemia and Atherosclerosis

G. Hergenç

Apo E isoforms are one of the many risk factors of atherosclerosis. About 90% of Type III hyperlipoproteinemia patients are known to be apo E2/2. Apo lipoprotein E has a vital role in the metabolism of lipoproteins by acting as a ligand in receptor binding. Variants of apo E are responsible for the variance of lipid and lipoprotein levels between individuals. Most common form of apo E is E3 and the most common variants are E4 and E2. There are about a dozen of rare variants of apo E that have receptor binding defects and as a result cause Type III hyperlipoproteinemia and premature atherosclerosis.

Thoracoscopic Approach to Pericardial Diseases

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Pericardial diseases consist of acute and chronic serious problems. The presentation of these conditions clinically varies from asymptomatic to life-threatening problem. They include benign and malignant pericardial effusions, tamponade, constrictive pericardial disease, and pericardial cysts. Management of

these conditions frequently requires aggressive therapy, often in the form of surgical intervention. The goals of surgical therapy are to relieve the effusion, make a definitive diagnosis, and prevent recurrence of the effusion or development of constrictive pericarditis, with the lowest morbidity and mortality. The surgical options include a subxiphoid resection, median sternotomy, anterolateral thoracotomy, or a thoroscopic approach. Thoracoscopy is not indicated for use in pericardiectomy for constrictive pericarditis. Nevertheless, thorascopic resection of symptomatic pericardial cysts offers a viable alternative to traditional open thoracotomies.

The recent introduction of thoracoscopic techniques for surgery of the pericardium offers a new and potentially improved method to treat some these problems. In this article, the overview of the current therapy of pericardial diseases and the role of thoracoscopy in their management, have been reviewed a discussion.

Posteriorly Located Postinfarction Ventricular Septal Rupture

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The postinfarction ventricular septal rupture is one of the most serious complication of acute myocardial infarction. Posterior ventricular septal rupture occurs less commonly and has a higher mortality rate.

Two patients (61 year-male and 70 year-male) who have been diagnosed as postinfarction septal rupture at the posterior site of the ventricle, were evaluated; pulmonary/systemic blood flow ratios were 2.1 and 2.8 respectively. Coronary angiographic revealed three-vessel disease for both of cases. After the intraaortic balloon pump management both of the patients underwent repair of the ventricular septal rupture and coronary artery bypass graft operation. In this report, we evaluated two patients with postinfarct posterior ventricular septal rupture in the light of recent studies.