

Summaries of Articles

Relationship between Pulmonary Venous and Transtricuspid Flows in Patients with Chronic Rheumatic Heart Disease

N. Narin, K. Üzüm, K. Hallaç, H. B. Üstünbaş, F. Narin, C. Berkarda

Pulmonary venous velocity has been related to the left atrial function and mitral valve velocity. The assessment of pulmonary venous flow has helped to characterize left ventricular function in various heart diseases. To determine the relative importance of several proposed factors that could influence pulmonary venous flow velocity, anatomic and Doppler tricuspid and pulmonary venous velocity were compared in 21 patients with chronic rheumatic heart disease. There were correlations with pulmonary venous diastolic flow velocity and velocity time integral with mean tricuspid pressure. Pulmonary venous systolic flow velocity showed correlation with mean tricuspid pressure, and velocity time integral showed correlation with mean tricuspid pressure and peak tricuspid flow velocity in early diastole. There was correlation with pulmonary venous flow reversal atrial contraction velocity time integral with peak tricuspid flow velocity at atrial contraction, right atrium dimension (maximum), right atrium area (maximum), right atrium ejection fraction, right atrium fractional shortening. Pulmonary venous flow velocity reversal atrial contraction showed correlation with right ventricular isovolumetric relaxation time, peak tricuspid flow velocity at atrial contraction and mean tricuspid pressure. These results suggest that pulmonary venous velocities relate with right ventricular diastolic filling and right atrial area and function.

Two-Year Experience with Integrated Myocardial Management

C. Alhan, C. Çakalağaoğlu, F. Baçel, Y. Şensöz, M. İdiz, İ. Kayacioğlu, S. Tarcan, B. Yiğiter

Cardioprotective strategies, like cardiac operations, have evolved to the point that it is essential to understand and use various techniques to obtain the de-

sired result of limitation of intraoperative damage during completion of a technically perfect operation that offers the best long-term benefit. In this report we present two-year experience in a consecutive series of patients in whom integrated myocardial management was undertaken. In this preliminary study, integrated myocardial management reduced patient morbidity significantly compared with crystalloid cardioplegia. Of the 214 patients operated with integrated myocardial management. 162 (75.7%) had undergone isolated CABG, 13 (6.1%) had CABG and additional procedures, and 39 (18.2%) had valve replacements. Parsonnet risk stratification scoring system was used to determine the approximate predicted mortality for each patient. Overall, 23 patients (10.7%) had 30 major complications. 19 of these patients were in the high-risk (>4) group. The median length of hospital stay was 8.6 days for the CABG patients, and 8.8 days for the valve patients. Among those with clinical scores of 0 to 4 (lower risk) in whom the predicted mortality was 1.3 ± 1.6 , 1 of 86 (1.2%) patients undergoing CABG died. For those with severity scores of >5 (higher risk) in whom the predicted mortality was 11.6 ± 5.7 , the observed mortality was 7.9% (7 of 89 patients). Overall mortality was 4.5% for the CABG patients, and 0% for the valve patients. For the entire group, predicted and observed mortality rates were 7.1 ± 6.5 , and 3.7, respectively. We conclude that, integrated myocardial management takes maximum advantage of the benefits of different methods of myocardial management by resolving their limitations and disadvantages.

Nonsurgical Therapy of Femoral Artery Pseudoaneurysms with Color Doppler Ultrasound-guided Compression

M. Şan, M. Demirtaş, S. Aikimbaev, M. Kanadaşı, A. Birand, M. Oğuz

Femoral arterial pseudoaneurysm (FAP) is an important complication of interventional cardiology procedures, occurring in 0.3 to 0.7 % of patients. Color

Doppler ultrasonography-guided pseudoaneurysm compression (USGC) is a new technique that may offer an effective nonsurgical treatment. We studied 12 patients (6 male, 6 female, mean age 60.1 ± 7.0 , ranging 47 to 69) with FAP. A vascular complication was suspected due to the presence of a hematoma, bruit or pulsatile mass, color Doppler ultrasound study was performed using a Sonochrome (GE Medical Systems) with 3.75 convex and 7.5 Mhz linear array probe. All patients with pseudoaneurysm were performed with external ultrasound-guided compression by an experienced radiologist. In patients with FAP, pseudoaneurysm size, location, puncture site, compression time, number of procedure and results were registered. Results : All FAP patients were examined 1 to 15 days after femoral intervention. FAP (mean) size: 21.8 ± 8.1 mm, FAP location: superficial femoral artery 2, common femoral artery 10; puncture site: 1 to 3 (mean: 1.4 ± 0.6); mean compression time: 40.3 ± 18.5 min, number of procedure: 1 to 8 (mean: 4.4 ± 1.8). This technique was successful in 11 patients. Recurrence in FAP was not seen in 1 month follow-up.

In conclusion, USGC pseudoaneurysm repair in postangiographic femoral artery pseudoaneurysm was performed as a new technique that is easy and alternative to surgical repair.

Massive Air Embolism at the Initiation of Cardiopulmonary Bypass: Case Report

N. Yapıcı, C. Alhan, H. Maçika, T. Kudsioğlu, Z. Aykaç

Massive air embolism (MAE) occurs in 0.1-0.2 % of patients undergoing cardiopulmonary bypass, and approximately half of these patients suffer permanent neurologic damage or death. Large amounts of air may enter the perfusion system via many different portals. Immediate deep hypothermia and the administration of brain protective agents have been used to prevent the permanent sequelae of MAE (1).

Use and efficacy of retrograde cerebral perfusion through the superior vena cava have been reported for the treatment of cerebral air embolism during cardiopulmonary bypass (CPB) (2).

We report the successful management of an accidental MAE at the initiation of CPB.

The Effect of Autotransfusion System Among Homologous Blood Usage in Coronary Artery Surgery

A. Korukçu, H. Karabulut, R. Tosun, H. Gerçekoğlu, M. Akyıldız, F. Karakoç, N. Çam, O. Sokullu, B. Yiğiter

Homologous blood usage is an important part of open heart surgery. Because of its frequency and life threatening complication; providing techniques that maintain less homologous transfusion became inevitable. Collection of blood with "Haemonetics cell saver" device intraoperatively, its preparation and transfusion back to the patient postoperatively is one of those techniques. This system was applied to 250 patients who underwent CABG in our hospital between 1991-1993. The results were compared with the control group consisting of further 250 patients. Blood which was collected before heparinization and after the infusion of protamin sulphate was prepared and given back to the patients postoperatively.

In this study, the amount of blood given to the patients, 24 hours of drainages, the amount of autotransfusion blood collected were registered. The haematologic, biochemical and clinical evaluations on the operative, first postoperative and discharge days were also done. While the homologous blood usage in the autotransfusion group was 1.03 ± 0.1 units, it was 3.22 ± 0.25 units in the control group ($p < 0.001$). 155 patients (62%) in our study group and 70 patients (28%) in the control group did not receive any transfusion. Postoperative C3 levels were lower in the autotransfusion group and the difference between the two groups were statistically significant ($p < 0.05$).

In conclusion, comparison of results of the study and control groups shows that, usage of the intraoperative autotransfusion system not only reduces the amount of homologous blood used, but also causes no clinical, haematologic and biochemical disadvantages. Therefore, routine usage of this system can be proposed.

Interrelations of Endogenous Digoxin-like Factor, Basal Insulin and Microalbuminuria and Relation to Blood Pressure Level in Patients with Essential Hypertension

D. Şentürk, Ö. Hersek, H. Duran, N. Unutmaz, A. Kekovalı, B. Emiroğlu, L. Çetinkaya, Y. Eryılmaz

We studied the relationship of endogenous digoxin-like factor (EDLF) and basal insulin with microalbuminuria in between them and with the level of hypertension which might have a role in the pathogenesis of hypertension.

The present study was carried out in 50 hypertensive patients and 10 normotensive subjects serving as control. There was no difference in age, gender, and mean weight between the groups. Absence of hepatic, endocrine, renal, or metabolic abnormality was required in persons enrolled in the study. Biochemical methods used were as follows; competitive immunoassay for plasma EDLF, radioimmunoassay for insulin, immunonephelometry for microalbuminuria.

Statistically significant difference was found in the levels of serum sodium ($p<0,0001$), serum basal insulin ($p<0,001$), serum EDLF ($p<0,001$), and amounts of microalbuminuria ($p<0,05$) between the two groups. Serum sodium levels, basal insulin levels and amounts of microalbuminuria were statistically correlated with systolic and diastolic blood pressure levels. The results indicate that hyperinsulinemia, increase in EDLF and salty diet have a role in the pathogenesis of hypertension.

Prognostic Significance of Right Ventricular Involvement in Patients with Acute Inferior Myocardial Infarction

A. Altun, F. Özçelik, B. Özkan, H. Kadı, A. Gürçağan, G. Özbay

Acute inferior myocardial infarction (AIMI) frequently involves the right ventricle. Postmortem studies revealed that there is right ventricular involvement in 19 to 51 percent of patients with AIMI. Right ventricular infarction (RVI) increases the incidence of atrioventricular (AV) block, arrhythmias and heart failure in patients with AIMI; but there is

no consistent information on in-hospital mortality rate. We hypothesized that RVI, as diagnosed by ST-segment elevation in the right precordial leads V3R and V4R, may affect the in-hospital prognosis of patients with AIMI.

Data of 258 consecutive patients with AIMI who were admitted to the coronary care unit during January 1991 and March 1995 were analysed. 53 patients (Group I) had signs of RVI, whereas 205 patients (Group II) had isolated AIMI. These groups were similar regarding sex, age, coronary risk factors and thrombolytic therapy. We found that Group I had significantly higher serious ventricular premature beats (Lown III or above) (55% vs 25%) ($p=0.00002$), VT-VF (15% vs 7%) ($p<0.05$), second-degree AV block (15% vs 6%) ($p=0.04$), third-degree AV block (25% vs 7%) ($p<0.001$), total AV block (57% vs 21%) ($p<0.001$), Killip II heart failure (23% vs 10%) ($p=0.016$) and QRS score (4.32 ± 1.48 vs 3.95 ± 1.31) ($p=0.04$) than patients without RVI (Group II). Group I had a in-hospital mortality rate similar to that found Group II (4% vs 8%) ($p=NS$).

These data suggest that infarction extension from inferior wall to the right ventricle is related to an increase in the early complications of AMI but does not change the in-hospital mortality rate.

Ligation of Patent Ductus Arteriosus by the Method of Video-assisted Thoracoscopic Surgery

Ö. Oto, E. Hazan, Ü. Açıkkel, E. Silistreli, A. Örer, B. Uğurlu, H. Çatalyürek, N. Sarıosmanoğlu

In April and May 1996, two cases of PDA ligation were performed for the first time in Turkey by the method of video-assisted thoracoscopic surgery (VATS) in Dokuz Eylül Medical Faculty, Thoracic and Cardiovascular Surgery Department. There was no complication in these patients in the postoperative period and they were discharged symptom-free the second day having confirmed a closed ductus in echocardiographic examination. Between February 1992 and May 1996 a total of 39 patients have undergone interventional application by VATS in our Department. While in four of these patients the pro-

cedure could not be manipulated because of massive pleural fibrosis, there was no mortality or morbidity among the patients, and they were discharged on an average the second postoperative day. The ratio of the complications, such as bleeding, air leak, arrhythmia and empyema were very low in these operations, and the hospitalization period as well as the returning time to the job were shorter than the open technique.

Impact of the Systemic-Pulmonary Shunt and Fontan Operation on Ventricular Geometry in Functionally Single Ventricle

G. Batmaz, A. Sarioğlu, İ.L. Saltık, G.S. Saylam, B. Kınaoğlu, T. Sarioğlu

In order to evaluate the effect of the systemic-pulmonary shunt and Fontan operation on ventricular geometry, the diameter, volume, shape and mass of the ventricle were determined echocardiographically in patients with functionally single ventricle. Three groups, 10 patients (group II) aged 4.77 ± 3.48 years having no operation, 12 patients (group III) between 12.34 ± 11.18 years of age with systemic-pulmonary artery shunt and 20 patients with performed Fontan operation aged 11.42 ± 6.95 years constituted our study population. At a mean age of 6.56 ± 2.87 years, 21 children having no cardiac disease were accepted as the control group. In the evaluation of the ventricular shape, the ratio of ventricular diameter to length was determined. Ventricular mass has been standardized according to patient's body surface area and ventricular volume. Ventricular diameter and volume were greater for patients with single ventricle than for the control group. The morphology of the main ventricular chamber and cardiac pathology had no influence on these parameters. Although no statistical difference was determined, the greatest ventricular diameter and volume were found in patients

with systemic-pulmonary shunt, and these parameters were closest to the normal in the group IV patients. Ventricular mass was also greater for patients with single ventricle than for the control group. In the cases with right ventricular main chamber, the ventricular mass was the greatest and this was statistically significant. In patients with single ventricle the ventricular shape was spheric while in normal children it was ellipsoid. Also the ventricular shape in patients with Fontan operation was more like an ellipsoid than other patient groups. The main ventricular morphology and cardiac pathology had no influence on this finding.

In conclusion, in patients with functionally single ventricle, ventricular shape is spheric, and ventricular diameter, volume and mass are considerably greater than those of normals. With Fontan operation the ventricle becomes more ellipsoid and significant reduction in ventricular diameter, volume and mass are achieved. Since the ventricular diameter, volume, mass and shape were not unchanged in the patients with single ventricle, hemodynamic status and patient's age had affected these parameters, and these parameters also influenced the ventricular systolic and diastolic functions, echocardiographic follow-up is useful, safe and necessary .

Apical Hypertrophic Cardiomyopathy: Case Report

H. Tezcan, A. S. Fak, M. Okucu, A. Oktay

Apical hypertrophic cardiomyopathy is a subtype of hypertrophic cardiomyopathy and it is associated with distinctive morphologic and clinical features. The first cases were reported from Japan and it is rarely seen in other countries. We report a female patient presenting with atypical chest pain. The diagnosis of apical hypertrophic cardiomyopathy was made by means of electrocardiography, 2-D echocardiography and magnetic resonance imaging.