

Summaries of Articles

Surgical Angioplasty at Ostial Stenosis of Left Main Coronary Artery

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Between December 1989 and August 1992, five male patients with stenosis of the left main coronary artery ostium underwent saphenous vein patch angioplasty using anterior surgical approach at Türkiye Yüksek İhtisas Hospital.

These constituted only 0.23 % of all patients with coronary heart disease treated surgically. In two patients coronary stenosis were associated in each of whom left anterior descending artery, among other coronary arteries were bypassed. There was one early postoperative death, namely in the patient in whom additional endarterectomy and excision of calcific nodules were performed.

Factors Influencing the Mortality of Dilated Cardiomyopathy

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We investigated the symptoms, clinical and laboratory findings that may influence the prognosis of dilated cardiomyopathy (DC), in 30 male and 15 female patients, hospitalized and followed in the period between June 1988-October 1991 at the Istanbul Institute of Cardiology. Since three patients lacked a follow-up, the prognosis was studied in 42 patients.

Age, sex, etiologic factors, dyspnea, tachycardia, chest pain duration, functional capacity before admittance, third heart sound, mitral regurgitation murmur, hepatomegaly, cardiothoracic index, rhythm and conduction disturbances by resting ECG and Holter recording, echocardiographic ejection fraction, fractional shortening, left ventricular and atrial diameter, hemodynamic left ventricular enddiastolic and end-systolic pressures, illness and follow-up duration were studied as potential factors affecting the prognosis of DC.

There were 16 deaths (38.1 %) during 11.4-month (mean) follow up. The patients were followed up for a total 40 patient-years. This implies an average annual death rate of 40 %. The leading prognostic factors influencing mortality turned out to be: functional capacity (p: 0.0003), cardiothoracic index (p: 0.004), presence of third sound (p<0.005), ejection fraction (p:0.03) fractional shortening (p:0.03) and duration since onset of dyspnea (p:0.048) . These factors are, indeed, the morphological, clinical and symptomatologic findings of congestive heart failure.

Evaluation of Coronary Artery Lesions Quantitatively with Coronary Angiography Before and After PTCA

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In 15 patients who underwent percutaneous transluminal coronary angioplasty (PTCA), coronary artery stenoses were evaluated with quantitative coronary angiography and visually before and after PTCA. By performing standard selective coronary artery catheterization, cine and digital coronary angiography were recorded at the same time in 25 frame/second rate with Siemens Bicor DSA 3 VAC. Algorhythm in the computer software program and digital images were evaluated quickly after record. Results were compared with cineangiography findings evaluated by two cardiologists.

Before PTCA, the stenosis rate of vessel lumen was found 79.3±8.7% cineangiographically, 76.5±6.2 % geometrically and 86.1±7.9 % videodensitometrically. After PTCA, the stenosis rate was found 21.0±6.6 % visually, 44.8±13.5 % geometrically and 38.9±9.6 % videodensitometrically.

The relationship between cineangiography and quantitative results was not significant before and after PTCA, (p>0.05 before and after PTCA). While the relationship between geometrical and videodensitometrical methods was significant before PTCA (r=0.54, p<0.05), it was not significant after PTCA (r=0.38, p>0.05).

In conclusion, we suggest that quantitative coronary angiography be performed in invasive procedures. Further extensive studies related to the subject are needed.

Electrocardiographic Signs of Atrial Infarction and Development of Supraventricular Arrhythmias in Patients with Acute Myocardial Infarction

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The relationship between the electrocardiographic signs of atrial infarction and supraventricular arrhythmias was evaluated retrospectively in 214 patients admitted to Hacettepe University Hospital between January 1, 1992 and December 31, 1992, with the diagnosis of acute myocardial infarction. Sixteen (7.5 %) patients had major, and 9 (4.2 %) patients had minor criteria of atrial infarction.

Supraventricular arrhythmias, usually atrial fibrillation, were present in 8 of 16 (50 %) patients with major criteria, and 3 of 9 (33 %) patients with minor criteria, giving significantly different odds ratios of 10.0 and 3.9, respectively.

Left-sided cardiac failure was detected in 14 of the 26 (54 %) patients with supraventricular arrhythmias. Overall, fifty-five (26 %) patients had left-sided cardiac failure and 14 of them (25 %) had supraventricular arrhythmia during the hospitalization period. There was no significant difference between patients with and without electrocardiographic signs of atrial infarction regarding the myocardial wall involved, the serum levels of cardiac enzymes and mortality.

In conclusion, supraventricular arrhythmias may develop in patients who present with PR segment changes in their initial electrocardiograms and those in whom left-sided cardiac failure ensues. Therefore, it may be useful to treat left-sided cardiac failure or in order to prevent its development to prevent the hemodynamic compromise which may be caused by supraventricular arrhythmias.

Captopril Therapy in Dilated Cardiomyopathy in Childhood

M.F. Şenocak, M. Saraçlar, S. Özkutlu

In childhood dilated cardiomyopathy (CMP) which causes congestive heart failure with deterioration of the left ventricular functions, angiotensin converting enzyme (ACE) inhibitors have not been in routine usage. Despite a good experience of more than 10 years with adult patients, there is still paucity of data in the English literature regarding the use of ACE inhibitors in children with dilated CMP.

In our study, we used captopril in 19 digitalized children with dilated CMP who were admitted to the Hacettepe University Pediatric Cardiology Department and studied for a period of 2 days-16 months (mean 8.2 months). Clinical, laboratory and echocardiographic results showed that captopril usage in a mean daily dose of 1.8 mg/kg for longer than 2 or 3 months led to improvement of left compared to baseline values, those obtained after the fifth month, the average ejection fraction rose from 31 % to 60 % ($p<0.001$) and fractional shortening from 14.5 % to 32.3 % ($p<0.001$). It is emphasized that children with dilated CMP would benefit from the routine use of captopril.

The Evolution of the Right Ventricular Potentials During Infancy. ECG Findings Based on Follow-up of Normal Newborns

G. Ahunbay, T. Onat

The standards for amplitude of R waves and R/S ratios in right- and S waves in left precordial leads in the ECG as well as their interrelationships were studied longitudinally in 56 infants during the first 15 months of life. It was found that the increase in amplitude of R waves during the first 4 months was due to a general increase in voltage. The upper normal limits for R in V3r was 20 mm in the first four months and 18 mm thereafter. These limits were somewhat higher and around 23 mm in V1. The 3 percentile limits were 4 mm for V3r and 5 mm for V1. The decrease in S amplitude with increasing age was more significant in V6 as compared to V5.

The R/S ratio in V3r and V1 increased during the first two months and decreased after the age of 4-6 months. A ratio of 6 is the upper normal limit in V1 and 0.9 the lower limit for V1 and V3r. The upper limits for the sum of the right potentials for RV1+SV5 is 35 mm and 28 mm for RV1+SV6. The

lower limits are 10 and 8 mm, respectively. The amplitudes of R waves in V3r and V1 in the neonates and at one month did not show a significant correlation with the same variables obtained thereafter. Thus, the R wave amplitude in infancy cannot be predicted from the neonate values. On the other hand, there was a significant correlation between values obtained after the age of 2 months and the interrelationship was higher in V1 as compared to V3r. The use of the upper limits presented herein will make easier the decision for pathologic overloading of right ventricle during infancy.

The Course of Physiologic Incomplete Right Bundle Branch Block During Infancy. ECG Findings Based on Follow-up of Normal Newborns

T. Onat, G. Ahunbay

In order to establish the incidence, characteristics as well as the course of R' waves which can be considered as incomplete right bundle branch block (IRBBB) during the involution of right ventricular hypertrophy, 8 serial ECG's were evaluated starting from 43 normal newborns, 49 after one month and 56 after two months. The right precordial r'-waves were classified according to their amplitudes and their occurrence before or after the S wave. The duration of qR-interval and its ratio to QRS were evaluated in right and left chest leads.

The incidence of R'-wave, which was very rare in neonates increased after the first month and occurred before the S-wave. Thereafter, the amplitude of R' decreased and changed to Rr'-pattern. This turned into an r' after the S wave and finally r' decreased and evolved into SS'-pattern. An rSR' or qRS-pattern in the right precordial leads were never observed.

Since the absolute and relative duration of qR-interval in the right precordial leads was prolonged as compared to V5-6, it was postulated that R'-waves were caused by the delay in conduction through the right-sided myofibrils which were reduced in diameter because of involution of right ventricular hypertrophy while being stretched due to the increase of its volume of cavity during growth. The physiologic IRBBB during infancy can be differentiated from the pathologic one by the latter's stationary character of the amplitude of R'-wave.

Reviews

Valsalva's Maneuver

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Valsalva's maneuver, a prolonged forced expiration against a closed glottis, is used as a diagnostic application for the evaluation and differentiation of patients with cardiac murmurs, the evaluation of left ventricular functions and autonomic neuropathies. Valsalva maneuver can also be used as first-line therapy for supraventricular tachycardia.

In this review, the physiology of Valsalva maneuver, its use for diagnostic and therapeutic purposes are discussed. Other cardiac autonomic reflexes which are used in the evaluation of cardiovascular autonomic neuropathy, cardiac functions and murmurs are not dealt with.

Indications for Valve Replacement in Patients with Valvular Heart Disease

H. Yüksel, T. Sarıoğlu

Cardiac valve replacement or valve repair has changed the prognosis of patients with valvular heart disease and has improved long-term survival. With the progress in operative techniques and better patient selection, results of valve replacement has been improving.

The timing of valve replacement is of utmost importance in the surgical treatment aiming to diminish the symptoms, to improve the exercise capacity and quality of life. An early valve replacement places the patients at unnecessary risk of the operation and complications of prosthetic heart valves. On the otherhand, the expected outcome may not be obtained if the valve replacement is made too late.

In this article the natural course of valvular heart disease, the role of operation, appropriate indications for valve replacement and factors affecting the post-operative prognosis, especially left ventricular dysfunction, have been reviewed.

Case Report

Severe Mechanical Hemolysis Following Transcatheter Closure of Patent Ductus Arteriosus

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Severe mechanical hemolysis occurred after transcatheter occlusion of a patent ductus arteriosus by Rashkind's double umbrella technique. Hemolysis manifested itself by a drop the first day of the hema-

tocrit from 35 to 30 percent (and later to 28 %), accompanied by reticulocytosis, fragmentation of erythrocytes, hemoglobinuria and jaundice. Multiple packed red blood cell transfusions were applied and hemolysis disappeared on the 33rd day of intervention. We think that progressive clot formation around the device may have smoothed the rough surface of the occluder and invasive intervention could thus have been avoided in such a complication.