were found to result in a variability below 5% in parameters measured directly from the average waveform, and up to 10% in those obtained from the time derivative. Subsequently, the feasibility of an automated version of the algorithm, based on objective operator independent criteria, was evaluated, and parameters obtained were found to be in excellent agreement with those obtained using manual approach. In summary, this algorithm provides a fast, easy and objective method for noise reduction in acoustic quantification signals. This algorithm may improve the on-line noninvasive assessment of systolic and diastolic LV function.

1052 Computer Aided Instructions: II

Tuesday, March 21, 1995, 9:00 a.m.–12:30 p.m.
Ernest N. Morial Convention Center, Hall B

1052-1 Multimedia Instructional System for Fetal Echo

Krzysztof P. Wróblewski, Zhi Yun Tian. *Children's Hospital of Philadelphia, Philadelphia, PA*

Congenital heart disease (CHD) is the most common congenital malformation with an incidence rate of 0.7%. Many pregnant woman (in some countries all) are offered an ultrasound scan at around 18 weeks of pregnancy. The scan incorporates a detailed anatomical survey of the fetus and if includes at least a four chamber view, it is an excellent opportunity to detect congenital heart defects. Therefore a Windows based multimedia computer program for the instruction of Fetal Echo for ultrasound technologists, students, residents, fellows and primary care physicians has been developed. The application includes a step by step tutorial to instruct the user in reading Fetal Echo data, a browsing library of definitions of CHD's, graphics images and digitized echocardiograms, and the *Expert System* for automatic diagnosis. The pictures, images and descriptions are linked to a database and can be viewed by searching for the defect name or symptoms. This provides a powerful instructional tool in this very difficult area of medical education.

The minimum hardware requirements to run this program are: IBM/PC or compatible computer running MS Windows version 3.1 with 80386SX processor, 4 MB RAM, 30 MB free disk space, multimedia with dual speed CD ROM, and a VGA card capable to display at least 256 colors.

1052-2 Expert System Aid in Differentiating Among Paroxysmal Supraventricular Tachycardias

Steven Georgeson. *Somerset Medical Center, Somerville, NJ*

The differentiation between atrioventricular reciprocating tachycardia via an accessory pathway (AVRT), AV nodal reentrant tachycardia (AVNRT) and atrial tachycardia (AT) in paroxysmal supraventricular tachycardia may be helpful in guiding pharmacologic therapy and in identifying patients for radiofrequency catheter ablation. To help in this differentiation, an expert system was developed using a commercially-available expert system shell (*EXSYS*). A simplified version of this system was designed to run on a palm-top computer. Both programs use the MS-DOS operating system. The expert system is rule-based and assigns probability values to the goal states through the process of backward chaining. The goal states for this expert system were AVRT, AVNRT, and AT. The user is queried for the presence of various abnormalities on the presenting EKG (P wave location, QRS alternans, pseudo r wave in lead V1, pseudo S wave in the inferior leads), comparison with previous EKG's (presence of pre-excitation) and the effect of vagal manueuvers or adenosine infusion on the tachycardia. From published data, each abnormality is assigned a probability based on the positive predictive value of the abnormality for AVRT, AVNRT and AT. By combining the positive predictive values, the expert system assigns a final probability for AVRT, AVNRT and AT.

This expert system may be useful as a diagnostic tool and a teaching aid in the differentiation between AVRT, AVNRT and AT in paroxysmal supraventricular tachycardia.

741 Results of Reduced Antithrombotic Therapy Following Intra Coronary Stenting

Tuesday, March 21, 1995, 10:30 a.m.–Noon
Ernest N. Morial Convention Center, La Louisiane A

10:30

741-1 Clinical Experience with Heparin-Coated Stents — The Benestent II Pilot Phase 1

Håkan Emanuelsson, Patrick W. Serruys, Jorge Belardi, Hans Bonnier, Antonio Colombo, Jean Fajadet, Jean-Jacques Goy, Guy Heyndrickx, Peter de Jaegere, Victor Legrand, Cados Macaya, Pierre Materne, Wolfgang Rutsch, Ulrich Sigwart, Harry Suryapranata, enestent Study Group. *Division of Cardiology, Sahlgrenska Hospital, Göteborg, Sweden; Thoraxcenter, Erasmus Univ. Rotterdam, The Netherlands*

The purpose of the Benestent II Pilot Phase was to explore the safety of reducing antithrombotic therapy in conjunction with implantation of heparin-coated stents. The study consists of three phases, where resumption of heparin therapy after stent implantation was progressively delayed in a stepped care approach.

Material and Methods. Palmaz-Schatz stents with heparin coating were implanted in 51 patients (88% male) with stable angina pectoris. Heparin treatment was withheld 6 hours following removal of the sheath introducer from the femoral artery. The mean age was 59 years, 10% had a previous myocardial infarction, diabetes was prevalent in 8%, hypertension in 24% and 59% were current or previous smokers. Target lesion was located in the left anterior descending artery in 51%, left circumflex in 8% and right coronary artery in 41%. TIMI flow I–II was present in 14% and TIMI III in 86%. The mean pre-procedural minimal lumen diameter (MLD) was 1.10 mm and reference diameter 3.16 mm.

Results. Stent implantation was successful in all patients and following the procedure, mean MLD increased to 2.77 mm and percent diameter stenosis was reduced from 65% to 19%. The maximum balloon size was 3.45 ± 0.40 mm. Post-stent dilatation was performed in 40 patients (80%). High pressure (>12 atm) was used in 22 of these cases (54%). Two patients needed a second stent; one for an occlusive distal dissection and one for a distal lesion. There were no major complications, i.e. death, myocardial infarction, urgent CABG, re-PTCA or cerebrovascular accident. Peripheral vascular complications required vascular surgery in 3 patients (5.9%) and blood transfusion in one (2%).

Conclusions. In this pilot study implantation of heparinized stents was associated with a 100% success rate, absence of serious complications and a moderate incidence of vascular complications. Further reduction of antithrombotic treatment may be feasible.

10:45

741-2 Full Antiplatelet Therapy without Anticoagulation After Coronary Stenting

Jean-Marc Lablanche, Gilles Grollier, Nicolas Danchin, Jean-Louis Bonnet, Eric Van Belle, Eugene Mc Fadden, Michel E. Bertrand. *Universities of Lille, Caen, Nancy and Marseille, France*

Subacute thrombosis remains a major limitation of coronary stenting. In addition, local complications related to the intensive anticoagulation that is commonly employed are frequent.

We prospectively studied a regime of intensive antiplatelet therapy (aspirin 200 mg daily begun before percutaneous transluminal coronary angioplasty, ticlodipine 500 mg daily for 3 months begun just after angioplasty) with periprocedural dextran infusion continued for a period at the discretion of the local investigator. To date, 98 patients (85 men, 13 women) undergoing 102 procedures involving 125 stents have been enrolled; 71 patients had one stent implanted; 19 patients had 2 stents implanted, and 2 patients had 3 stents implanted. Symptoms before coronary angioplasty included effort angina (23%), angina at rest (6%), unstable angina (23%), recent myocardial infarction (27%). The indications for stent implantation were occlusive dissection 36%, dissection without occlusion 32%, suboptimal result or elective implantation 32%. The stented site was the LAD (37%), RCA (35%), LCx (17%), and vein graft (11%). Stent types were Wiktor (70%), Palmaz-Schatz (23%), Gianturco-Roubin (7%). The diameter of the stents implanted was 2.5 mm (2%), 3.0 mm (32%), 3.5 mm (44%), and 4.0 mm (22%). There were 2 deaths; 1 patient died from cardiogenic shock that was present before stent implantation 1 patient commited suicide; 4 patients developed q-wave AMI, 1 was already complete at the time of stent implant, 3 occurred in the hours after stent implant for occlusive dissection; 8 patients had non-Q AMI; 3 patients had CABG, 1 at 5 hours post stent for reocclusion (non-Q wave AMI), 2 were performed electively without sequelae for an unsatisfactory angiographic result but without ongoing ischemia. Blood transfusion for peripro-