of over 26 mmHg had a longer average life expectancy with CABG/AVR than with CABG alone. In patients over age 70, CABG/AVR was preferred only as the baseline aortic valve gradient increased to approximately 50 mmHg. Sensitivity analysis demonstrated that the rate of AS progression influenced outcomes. With slow progression (2 mmHg/year), CABG is favored for all ages of patients with AS gradients <50 mmHg; with rapid progression (14 mmHg/year), CABG/AVR is favored for all patients except those >80 years old with a valve gradient less than 25 mmHg.

Conclusions: This study provides clinicians with an empirical means of deciding which is the best procedure for patients with mild/moderate AS requiring bypass surgery based on their age, baseline aortic valve gradient, and rate of AS progression.

4:30 p.m.

837-3

Constrictive Pericarditis in Patients With Coronary, Valvular, or Congenital Heart Disease: Outcome of Pericardiectomy Combined With Other Cardiac Operations


Background - The safety of isolated pericardiectomy has improved in recent years (mortality of 6% in our most recent review), but little is known regarding outcome of the operation when combined with other cardiac surgical procedures.

Methods - From 1972 through 2000, 52 patients (mean age 61±15 years; 39 men) with other forms of heart disease had pericardiectomy for constrictive pericarditis; all had additional procedures including CABG in 28 (43% with IMA), valvular repair or replacement in 27 (tricuspid 55, mitral 33%, and aortic 22%), and atrial septal repair in 4 pt. The etiology of constrictive pericarditis was idiopathic in 46%, postoperative (mean interval 8.1 years) in 38%, and secondary to mediastinal radiation in 14%. Advanced congestive heart failure (48% in NYHA Class IV) was present for an average 16 months preoperatively.

Results - Nine pt died postoperatively, and the risk was independent of the etiology of constriction. Low cardiac output syndrome was the cause of death in 5 pt; hemorrhage accounted for one death. Excessive postoperative bleeding (medialastinal drainage >150cc/hr for six hours) occurred in 31% patients, and 7 pt (14%) required reoperation for bleeding. Use of antifibrinolytic agents including aprotinin did not reduce total blood transfusion requirements or transfusion of blood components. For all pt, probability of survival was 74±6% at 1 year and 53±9% at 5 years; survival was significantly reduced (P<0.001) in pt who had large transfusion requirements (>50 units of blood and blood products, 44). Postoperatively, 43% of pt were in NYHA Class I or II.

Conclusions - The presence of associated cardiac disease increases mortality and morbidity of pericardiectomy for pt with constrictive pericarditis. Excessive bleeding occurs in approximately one-third of pt despite aggressive use of antifibrinolytic drugs. Importantly, excessive bleeding after operation is associated with poor early and late survival.

4:45 p.m.

837-4

Echo/Doppler Evaluation of 137 Normal Aortic Allografts: Comparison With New Generation Bileaflet Mechanical and Stentless Xenograft Prostheses

Darryl J. Burston, Raffel Shameem, Ian Smith, Joan Pitch, Mark F. O'Brien, The Prince Charles Hospital, Brisbane, Australia.

Background: A major advantage of the normal allograft prosthesis (A Pro) is said to be superior hemodynamic performance. Recently, new generation mechanical and tissue prostheses with improved hemodynamics have become available. The aim of the current study was to establish the normal values for Doppler hemodynamic parameters for A Pro and compare findings with previously obtained data for the ATS mechanical and Crysol O'Brien (CLOB) stentless xenograft prostheses. Method: Using our data base, 137 patients who had undergone echo/Doppler evaluation less than 12 months following A Pro implantation had data for CLOA and CLOB. The values were obtained from a database of 205 patients in our institution. Results: A selection of data is provided below and is presented as median and interquartile ranges. The Mann-Whitney test was used for comparison of Doppler parameters. Values were <0.05 for all A Pro Doppler parameters compared with equivalent CLOB and ATS A Pro values which was <0.05 for all CLOA values compared with ATS A Pro values and CLOA and CLOB at the 27mm valve size. Dπ = Dimensionless Performance Index. EOA = Effective Orifice Area. BSA = Body Surface Area. Conclusions: 1. This study establishes normal reference ranges for A Pro Doppler data. 2. Hemodynamic performance of A Pro is still superior to new generation mechanical and tissue prostheses. CLOB valve has superior to the ATS valve especially at the smaller valve sizes.

4:55 p.m.

838

Current Dilemmas in Valve Surgery

Monday, March 18, 2002, 4:00 p.m.-5:30 p.m.

Georgia World Congress Center, Room 256W

4:00 p.m.

838-1

Fate of Severe Mitral Regurgitation After Coronary Revascularization Alone

B.Ko ech Lam, A. Marc Gillinov, Brian Griffin, Jaavanantham Rajeraman, Eugene H. Blackstone, Cleveland Clinic, Cleveland, Ohio.

Background: Traditionally, patients (pts) with moderately severe (3+) and severe (4+) mitral regurgitation (MR) undergo concomitant repair during coronary artery bypass grafting (CABG). The objectives of this study were to 1) contrast preoperative (preop) and introporoperative (inop) MR, 2) characterize the pattern of MR postoperatively (postop), and 3) to identify predictors of postop MR severity.

Methods: From 1980 to 2000, 243 pts undergoing CABG alone had unpaired 3+ and 4+ MR by preop angiography or transthoracic echocardiogram (TTE). Mechanism of MR was ischemia in 205 (84%) pts, degenerative in 15 (6%), rheumatic in 4 (2%) and idiopathic in 11 (4.5%). Preop information was available in 190 pts with preop MR. Of these, 180 (95%) were 3+ or 4+ MR (p=0.08). Post-CABG MR in 56 (23%) pts was 0, 1+ or 2+ in 39 (88%) and 3+ in 7 (12%). This preop downgrading of MR led to non-repair in 150 (96%) pts; other reasons were apparent ossification in 42 (18%), discrepant preop grading in 34 (14%) and hemodynamic instability in 5 (2%). Analysis of follow-up TTE for MR severity over time showed that 76% of patients had 0 or 1+ early postop while 24% remained with a high grade of MR (3+/4+). Within the first two months, the proportion of pts with high grade remained at 39% however that of moderate MR (2+/3+) decreased to 34% (P<0.02). A subsequent steady state of MR was observed to 14 years. Predictors of postop MR severity included RCA (P<0.01) and LCx (P<0.02) disease. InOR downgrading did not predict milder MR during follow-up.

Conclusions: When inOR TEE downgrades postop, surgical decision-making should be based on preop assessment of MR. Early decreases in MR after CABG do not persist over time. High grade (3+/4+) MR is unlikely to resolve by coronary revascularization alone, particularly in patients with RCA and LCx disease.

4:15 p.m.

838-2

Should CABG Patients With Mild or Moderate Aortic Stenosis Undergo Concomitant Aortic Valve Replacement? A Decision Analysis Approach to the Surgical Dilemma

William T. Smith, W. T. Ferguson, Jr., Eric D. Peterson, Carrie Backstone, Cleveland Clinic, Cleveland, Ohio.

Background: Patients who need coronary artery bypass surgery (CABG) who also have asymptomatic, mild to moderate aortic stenosis (AS) may undergo isolated CABG or concomitant CABG and aortic valve replacement (CABG/AVR). This decision should ideally be individualized based on the patient's predicted long-term outcomes with each competing surgical strategy.

Methods: We performed a Markov model decision analysis to compare the long-term quality adjusted life outcomes of patients with mild to moderate AS undergoing CABG, or CABG/AVR. Age-specific procedural morbidity and/or mortality risks with CABG, CABG/AVR and those with following a prior CABG were based on the STS National Data Base (N=1 million) from 1995-2000. Likelihood of progression to symptomatic AS, probabilities for valve-related morbidity (stroke and bleeding risk), and age-adjusted mortality rates were obtained from available literature.

Results: CABG mortality increased from 1.3% for patients <55 years old to 5.7% for patients >75. CABG/AVR mortality increased from 3.9 to 8.7%. Assuming a constant annual rate of progression of AS (7 mmHg/year), the optimal model decision was strongly affected by baseline patient age and aortic valve peak systolic gradient by echocardiography. For example, patients younger than 70 years old with a peak gradient