

**742** **Surgery for Ischemic Heart Disease**

Tuesday, March 21, 1995, 10:30 a.m.–Noon  
Ernest N. Morial Convention Center, Room 6

10:30

**742-1** **Use of the Perma-Flow<sup>R</sup> Graft in Coronary Bypass Surgery**

Robert W. Emery, Noel L. Mills, Lyle D. Joyce, Demetre M. Nicoloff. *Minneapolis Heart Institute, Minneapolis, MN; West Jefferson Medical Center, New Orleans, LA*

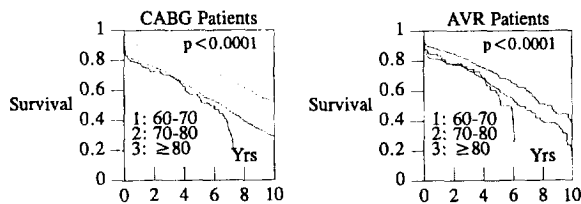
The Possis Perma-Flow<sup>R</sup> Graft is 5 mm PTFE tubing into which is incorporated a Venturi flow restrictor. An aortocaval fistula is created, and coronary anastomoses are constructed proximal to the resistor, where arterial pressure is maintained. From November 1992 through August 1994, this conduit has been used in 13 patients with inadequate autologous alternatives. Patient age ranged from 53 to 78 years and 3 patients were re-operative. On each Perma-Flow<sup>R</sup> graft, one to four coronary side-to-side anastomoses were constructed. In addition, LIMA (N = 12), vein graft (12), and/or gastroepiploic (3) grafts were also utilized to complete revascularization, or aortic valve replacement (1) performed. There was one perioperative death from cholesterol emboli and perioperative infarction in a second re-operative patient. Two to twenty months postoperative, all surviving patients (12) are asymptomatic. Protocol coronary angiography (8) performed in 7 patients, 1 week to 1 year postoperative, revealed all coronary anastomoses (11) to be patent. The Venturi resistor in one patient was occluded. The Perma-Flow<sup>R</sup> graft is a useful adjunct in patients with deficient autologous conduit.

10:45

**742-2** **Determinants of Survival in Patients Over 80 Years of Age After Cardiac Surgery**

Joseph M. Craver, John D. Puskas, Yannan Shen, William S. Weintraub, Robert A. Guyton, John P. Gott, Ellis L. Jones. *Emory University School of Medicine, Atlanta GA*

Cardiac valve replacement and coronary artery bypass surgery (CABG) are being applied with increasing frequency in patients (P) 80 years of age and older ( $\geq 80$ ). 517 patients patients  $\geq 80$  having cardiac surgery at Emory between 1974–93 (CABG = 425 (84%), AVR = 128 (25%), MVR = 21 (4%), CABG + valve = 65 (13%), CABG with LIMA = 77 (18%)) were studied retrospectively to assess results and determine risk factors for short and long term survival. They are compared to 9272 P age 60–69 years and 4874 P age 70–79 years undergoing similar procedures during the same time interval. In comparison to the P 60–69, more P  $\geq 80$  were female (43% vs 25%,  $p = 0.0001$ ), had class IV angina (56% vs 39%,  $p = 0.0001$ ) and had congestive heart failure class IV (4.4% vs 2.7%,  $p = 0.0001$ ). In-hospital death rates (9.0% vs 3.4%,  $p = 0.0001$ ) and stroke (4.9% vs 2.5%,  $p = 0.0001$ ) reflected these adverse clinical risk factors. Q-wave infarctions was less frequent, however (1.6% vs 2.5%,  $p = 0.024$ ). Interestingly, hospital mortality (9.0% vs 6.7%,  $p = 0.05$  was only slightly increased and stroke (4.9% vs 4.6%,  $p = NS$ ) was not more common in P  $\geq 80$  than in P 70 = 79 years old. Late survival curves (see figures) are similar for the first 5 years in all clinical subgroups,  $p = NS$ . However, after 5 years there is a more rapid decline in P  $\geq 80$  than in younger age groups.



When appropriately applied in selected patients over 80 years, cardiac surgery can be performed with acceptable mortality and excellent 5 year survival.

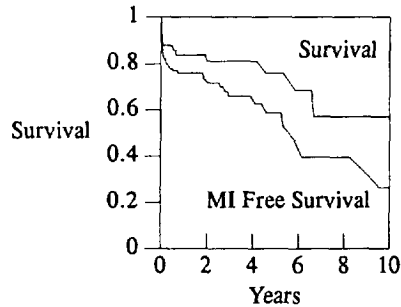
11:00

**742-3** **In Hospital and Long Outcome After a Third Coronary Bypass Procedure**

Joseph M. Craver, Alexander Justicz, Yannan Shen, William S. Weintraub, Ellis L. Jones, Robert A. Guyton. *Emory University School of Medicine, Atlanta GA*

Increasingly patients are returning for third and even fourth coronary artery bypass grafting (CABG) procedures. The in hospital and long term outcome

of patients undergoing a third CABG were reviewed. The time from the first to second CABG was  $5.2 \pm 3.6$  years and from the second to the third CABG  $6.7 \pm 4.2$  years. There were 107 patients, age  $60 \pm 9$  years, 91% were male, 33% had hypertension, 17% diabetes, 86% class III or IV angina and 6.4% congestive failure. 72% had 3 vessel disease. The in-hospital mortality was 9.3%, with 1.9% strokes, and 8.4% myocardial infarction. The 5 and 10 year survival were 0.79 and 0.57. The 5 and 10 year myocardial infarction free survival were 0.59 and 0.26. Patients undergoing a third CABG suffer from severe disease. Most were severely symptomatic, the majority had suffered a myocardial infarction and had 3 vessel disease.



While operative mortality in patients undergoing a third coronary bypass procedure was reasonable at 9.3%, continuing events over time limit long term prognosis.

11:15

**742-4** **Radial Artery Graft: Angiographic Follow-up**

Mark Menegus, Alan Chen, Mark Greenberg, Richard Charney, Richard Grose, Michael Johnson, Angelo Reyes, Rosemary Frame, Richard Brodman. *Montefiore Medical Center, Bronx, NY*

Interest in the use of the radial artery (RA) as a coronary bypass graft has increased. Attention to harvesting and use of perioperative calcium channel inhibitors have ameliorated problems with spasm noted in earlier studies. Since 1993, 72 patients (pts) underwent grafting using a free RA from the non-dominant forearm. Re-angiography was performed in 24 pts to date and is the subject of this study. Pts ranged from 39–79 years (mean 55.5); all had 2 or 3 vessel disease and an average of 3 grafts/pt were constructed (range 2–4). Left internal thoracic artery (LITA) was used in all cases except 1. The RA was a single graft in 19 including 2 to the LAD system, 12 to the circumflex system and 5 to the RCA. The RA was sequential in 5 cases. Of the 24 pts catheterized an average of 9 weeks post-op 24/24 RAs were patent; 1 (sequential) RA had a mid-graft stenosis. There was no spasm seen in any RA. RA distal diameters (2.6 mm) were well matched to the recipient vessel (RV) (2.2 mm). The ratio RV/graft diameter was 0.83 for the radial artery similar to the ratio for the LITA (0.90).

*Conclusion:* The RA is a viable coronary conduit, easily harvested and has excellent early patency rates.

**11:30** **742-5**

**Population Trends in Emergency Coronary Artery Bypass Graft Surgery**

Angela M. Vargas, Katherine M. Doliszny, Jing-Ping Mo, Russell V. Luepker. *University of Minnesota, Minneapolis, MN*

In a population-based registry of all Minneapolis–St. Paul residents who had coronary artery bypass graft (CABG) surgery, emergency CABG surgery (ECS) as a proportion of the total surgery steadily increased from 2.4% in 1970–74 to 12% in 1985–90. Operative mortality (OM, death within 30 days of CABG surgery) for ECS was significantly higher than OM for elective and urgent CABG surgery (odds ratio, OR = 2.6). To understand the factors associated with ECS and the changes in these factors over time, the medical charts of 3,059 patients (814 women) randomly selected from 19,316 CABG surgery cases from 1970 to 1990 were reviewed. ECS cases ( $n = 264$ ) were those described as emergent by the cardiologist or surgeon, or surgeries following cardiac arrest, immediately post infarction or within 24 hours of a cardiac procedure. Significant predictors of ECS were progressive/unstable angina (OR = 5.4), myocardial infarction (MI) within 30 days prior to CABG surgery (OR = 5.0), NYHA functional class III/IV (OR = 3.4), female gender (OR = 1.7), later year of CABG surgery (OR = 1.7), history of prior MI (OR = 1.6), moderate to severe left ventricular dysfunction (OR = 1.4), and increasing age (OR = 1.03). Factors that did not predict ECS included history of previous CABG surgery, history of diabetes, left ventricular aneurysm, left main coronary artery (LMCA) disease and increasing number of diseased vessels. In 1985–90, undergoing percutaneous transluminal coronary angio-

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