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developed repeated episodes of non-sustained ventricular tachycardia in their early post-
operative period. Two of the 7 atrial arrhythmias were paroxysmal, the remaining 5 were
persistent and required treatment. Univariate analysis showed previous surgical pallia-
tion (p = 0.028) and a higher Gp:Qs ratio (p = 0.045) were significantly associated with
early postoperative atrial arrhythmia. One patient (4%) died during the hospitalization.
On the basis of available survival data in 21 patients, the probability of survival at 5, 10,
15, 20 years postoperatively were 96%, 89%, 78%, and 66%, respectively. CONCLU-
SIONS: Successful late surgical repair of TOF in these patients can be achieved with low
surgical mortality and favorable long term survival in centers with experience in dealing
with adult congenital heart disease. Atrial arrhythmias and conduction disturbance are
the most common source of early postoperative morbidity in this group of patients.

1069-161  The Bidirectional Cavopulmonary Shunt in Young Patients With Interrupted Inferior Vena Cava: The Semi-Fontan

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Introduction: Because more systemic venous return is diverted to the pulmonary bed at a young age, this group is at risk for increased morbidity/mortality after BCPS. METHODS: We retrospectively reviewed the cardioiology database and included all pts with an IVC who underwent BCPS at Children's Hospital of Wisconsin between 1990 and 5/2000. RESULTS: Eleven pts were identified. Diagnoses included unbalanced AVSD with double outlet right ventricle (n=8), single left ventricle (n=1), multiple VSDs with RV hypoplasia (n=1), and HLHS (n=1). Prior to BCPS, 6 pts had 8 operations including Norwood in 4, aortopulmonary shunt in 2, pulmonary artery band in 1, and valvuloplasty in 1. At the time of BCPS, the median age was 6.5 mo (range 3.2-20 mo). There were 4 early deaths and 1 late death of pneumonia in a patient with non-cardiac anomalies, all with significant cardiac lesions. Mortality among the four patients with complex heart disease and IVVC was 88%. Prognostic analysis was performed in 4 pts because the majority of pts were well saturated at intermediate follow-up. Conclusions: The semi-Fontan can be performed safely and at an early age in the subgroup of pts with complex heart disease and IVVC.

1069-159  Pulmonary Position Cryopreserved Homografts: Durability in Ross and Non-Ross Patients

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Background: The surgical repair of aortic coarctation in infants has evolved over time,
largely in response to high rates of residual or recurrent coarctation. This review evalu-
ates our current approach utilizing extended end-to-end anastomosis without prosthetic
material to enlarge all areas of aortic arch hypoplasia.

Methods: The Michigan Congenital Heart Center surgical database was reviewed for
patients who underwent isolated repair of aortic coarctation from January 1, 1990 to Janu-
ary 1, 2000. Patients who underwent simultaneous repair of other lesions and those with
significant associated lesions were excluded.

Results: Eighty-three infants underwent surgical repair of isolated coarctation during this
decade. Median age at repair was 21 days (range 3-363 days). Repair was performed via
thoracotomy in 72 patients while the remaining 11 underwent median sternotomy with
circulatory arrest because of severe transverse arch hypoplasia. There were 2 deaths: 1
due to pulmonary hypertension in a patient with alveolar capillary dysplasia and 1 late
death of pneumonia in a patient with non-cardiac anomalies. Neither had residual coar-
ctation. Technique related complications of bronchial compression, clyvthorax, and vocal
cord paralysis were noted in 6 patients. At discharge, 14 patients had a gradient < 15
mmHg by both physical exam and echocardiogram. Follow-up data were available for 65
patients (78%) with mean follow-up duration 4.3 years (SD ± 1.1 years). Renitentiation
was required in 1 patient (6%). One underwent reoperation after 1 month, and 3 under-
grew balloon angioplasty within 7 months of initial repair. The remaining 60 patients are
asymptomatic, on no anti-hypertensive medications, and have aortic arch gradients < 15
mmHg. One developed subacute stenosis necessitating resection.

Conclusion: Tailored surgical repair for aortic coarctation has a low rate (6%) of residual
and recurrent coarctation even when performed in infants. Mortality and morbidity are
to low. Thus, far this low recurrence rate approaches that reported with other techniques
in older children.

1069-158  Repair of Aortic Coarctation in Infants: Results of a Tailored Surgical Approach in the Modern Era

Gal E. Wright, Cheryl A. Nowak, Caren S. Goldberg, Richard G. Ohay, Edward L. Bove, Albert P. Rocchini, University of Michigan Medical Center, Ann Arbor, MI

Background: The surgical repair of aortic coarctation in infants has evolved over time,
largely in response to high rates of residual or recurrent coarctation. This review evalu-
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Conclusion: Tailored surgical repair for aortic coarctation has a low rate (6%) of residual
and recurrent coarctation even when performed in infants. Mortality and morbidity are
to low. Thus, far this low recurrence rate approaches that reported with other techniques
in older children.

1069-157  Insights Into Mitral Valve Function After Repair of Atrioventricular Defects: Follow-Up Studies Using Real-Time Three-Dimensional Echocardiography With Color Doppler Mapping

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Background: Previous 2D studies in atrioventricular canal (AVC) patients after repair
have defined inadequate mural or lateral leaflet area as the major determinant of lateral
commissural mitral regurgitation (MR), and inadequate inferior leaflet area as the major
determinant of medial or cleft related MR. METHODS: We studied 15 patients, ages 2-20
years, 6 male and 9 female, who had undergone AVC repair in our institution from Jan-
uary 1990 to January 2001. Atrioventricular canal defects included partial defects (n=3),
septum free defects (n=2), and septum intact defects (n=10). Real time 3D echo was performed
(Philips Sonos 7500, Bothell, WA). Patients were divided into 'good' and 'poor' clinical out-
comes (n=7 each). 3D echo was performed 6-18 months after AVC repair. At least 3 determinants (e.g. mild MR, lateral leaflet non-coaptation, mild prolapse) were required in order to be classified 'poor' clinical outcome. All patients were followed up at least 4-9 years postoperatively. 3D echo was performed a mean of 4.8 years postoperatively. On univariate analysis: young age, commissural mitral regurgitation (MR), and inadequate inferior leaflet area as the major determinant of lateral MR, and young age, lateral leaflet non-coaptation, and inadequate mural leaflet area as the major determinant of medial MR. On multivariate analysis: young age, commissural MR, and inadequate inferior leaflet area were independent risk factors for lateral MR (p < .05), and age, commissural MR, and inadequate inferior leaflet area were independent risk factors for medial MR (p < .05). Conclusions: 1. AVC patients with small residual defects require 'early' postoperative 3D echo for proper management. 2. Younger patients (mean age 10.3 years) were at increased risk of residual MR. 3. Younger patients with commissural MR have a higher risk of residual MR. 4. Younger patients with lateral leaflet non-coaptation have a higher risk of residual MR. 5. Residual MR may be missed on 2D echo. 6. 3D echo is superior to 2D echo for detecting residual MR. 7. Residual MR may be more common in AVC patients than previously thought. 8. Color Doppler 3D echo is needed to detect residual MR.