management has evolved from coronary ligation to Takeuchi intrapulmonary artery tunnel to anatomical repair with coronary transfer. We report our experience with surgical repair of ALCAPA since 2001.

Methods: It is a retrospective study involving 18 patients operated for ALCAPA at our institute between 2001 & 2005, age of presentation 2 months to 11 years. Takeuchi repair was done in 5 patients, coronary transfer was done in 12 patients and coronary ligation was done in 1 patient. Left ventricular ejection fraction (LVEF) ranged from 10-40%. Associated mitral valve incompetence was present in 11 patients. Mitral valve repair was carried out in 5 patients. One patient underwent mitral valve replacement.

Results: There was no early or late mortality. Cardiopulmonary bypass (CPB) times and ischemic times were 115.6 and 61 min respectively in the Takeuchi group and 198.5 and 100.5 min in the coronary transfer group weaning from CPB was uneventful in all and there has been no requirement of prolonged extracorporeal support so far. Mean intensive care unit (ICU) stay was 17.4 days (range 3-18 days). Delayed Sternal closure was undertaken in 13 patients. Three patients needed tracheostomy for weaning from ventilator. LVEF after surgery ranged from 20-60% at discharge .Residual mitral incompetence was present in 8 patients and one of these one patients had undergone mitral valve (MV) repair. One patient (the last to undergo Takeuchi repair in this experience) underwent transannular patching of the pulmonary annulus because of severe right ventricular outflow(RVOT) obstruction caused by the Takeuchi tunnel. Follow up ranges from 3 months to 4 yrs (mean 2 yrs). LVEF on follow up ranged from 40-70%. Mitral incompetence that was present preoperatively has not altered despite improvement in EF in those who did not undergo concomitant mitral valve repair. There has been no late mortality.

Conclusions: ALCAPA repair has been accomplished with a high success rate. The left ventricle retains the capacity to recover even when the operation is performed late and in the presence of severe left ventricular dysfunction. Coronary transfer is our preferred approach due to risk of producing iatrogenic right ventricular obstruction. Mitral valve intervention at time of ALCAPA repair is probably indicated for significant preoperative mitral regurgitation.

Extending the limits of the primary arterial switch operation for TGA

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Introduction: The single stage arterial switch operation (ASO) has now become the treatment of choice for D-TGA. Late presenation for sugery, is common in developing countries like India and Sri Lanka. The purpose of this study is to asess the results of a treatment protocol offering a primary ASO to all patients presenting with D-TGA irrespective of the age at presentation.

Methods: A retrospective review was performed for all 70 children who underwent a primary ASO from 7/2002-7/2005. Forty of them had TGA with intact ventricular septum and 30 had TGA/DORV with VSD. All patients underwent a single stage primary ASO±VSD closure/aortic arch repair irrespective of their age at presentation, status of the LV, coronary artery anatomy. There were 9 children with TGA/IVS, older than 6 weeks, upto 2 years age who underwent primary ASO, with controlled LV loading, despite having a regresed LV at presentation.

Results: There were 4 hospital deaths. There were no reoperation for residual defect. All children had primary sternal closure. Only one of the nine children with regressed LV's died. All 8 survivors with regessed LV's recovered normal LV function in 7-10 days and continue to have a normal LV function on follow-up. One 6 month old patient with TGA, VSD died from advanced pulmonary vascular obstructive disease (PVOD) Survival and functional class are excellent beyond the early hazard phase soon after the operation in all groups of patients having the ASO.

Conclusions: This study over a period of 3 years has shown than primary ASO can be successfully performed in a broad spectrum of patients with TGA, irrespective of their age at presentation, status of the LV, coronary artery anatomy and aortic coarctation. Pesence of a bicuspid pulmonary valve or mild LVOTO is not a contraindication for ASO. Primary sternal closure is possible in almost all cases after the ASO. Patients with TGA/VSD, often develop early severe pulmonary vascular obstructive disease with 3-6 months of life.

Double switch operation: Narayana Hrudayalaya Experience

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Introduction: The long term results with conventional repair for congenitally corrected transposition of the great arteries (CCTGA) are known to be extremely poor. Our center's policy is to perform anatomic repair for this lesion. Early and intermediate term result of our experience is presented.

Methods: All patients admitted with the diagnosis of CCTGA and who underwent anatomic repair between 2001 & 2005 was included in this study. These patients were divided into two groups. Group I → Sennings + Rastelli procedure for CCTGA with ventricular septal defect (VSD) and pulmonic stenosis (PS), Group II → Sennings + Atrial switch for CCTGA with or without VSD and no PS.

Results: Total no of case operated were 27: Sennings + Rastelli (group I) seven. There was no early or late mortality. The mean age in group I was 5.17 years. One patient required permanent pace maker implantation and one patient has an RVOT gradient exceeding 40 mm of Hg on follow up. All are Class 1 symptomatic. Twenty Patients underwent Sennings + ASO i.e Group II of which there were three early deaths. Three (15%) patients required tracheostomy for weaning from the ventilator and three needed permanent pace maker insertion.. Incremental risk factors for early demise were uncorrected severe tricuspid regurgitation and persistant pulmonary hypertension. There was one late death secondary to severe postoperative left ventricular (LV) dysfunction. Postoperative follow-up echocardiography ranging from 2 months to 4 years (mean of 3 years) showed that two patients had moderate left ventricular dysfunction, six patients had moderate aortic regurgitation and one patient had mild right ventricular outflow obstruction. All the surviving patients are asymtomatic. One needs to be on diuretics for right sided failure secondary to tricuspid valve stenosis.

Conclusions: 1) Uncorrected significant Tricuspid incompetence increases the chances of early mortality in arterial switch + Senning for CCTGA, 2) Aortic incompetence (AI) is not uncommon following the arterial switch + Senning procedure, 3) Left ventricular dysfunction has been noticed in some early survivors. Cause of both AI & LV dysfuntion is unclear. Longer followup and greater experience are required to describe the precise role of DSO for different CTGA categories.

Fontan failure in the current era

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Objective: To review predisposing factors of Fontan failure at our institution.

Methods: It is a retrospective study from May 2001 to October