Complications after transcatheter ASD closure with the amplatz septal occluder

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The aim of this study is to report complications of transcatheter ASD closure using the Amplatzer Septal Occluder (ASO) (St Jude Medical) implantation. From December 1999 to October 2013 (April 2014), 760 patients underwent ASD closure with the ASO. Closure was mostly performed under general anesthesia and transoesophageal echocardiography control. Choice of the device diameter was established after balloon sizing and measurement of the stretched diameter.

Mean age of the patients was 31.9±22 years (0.5 month – 84 years). The stretched diameter was 22.5±6.6 mm (5-40mm) and device dimension 22±6.7mm (4-40mm). Duration of the procedure was 41±15 minutes (10-120 minutes) and fluoroscopic time 7.6±3.65 minutes (1-92 minutes). Dose of radiation was 18.7±22 Gy.cm² (median 12 Gy.cm²).

Implantation succeeded in 96% of repair at first procedure was mainly related to deficient rim. No device related death was noticed. Embolization occurred in 4 pts (0.5%): 1 in the aorta, 1 in the left ventricle, and 2 in the pulmonary artery. All but one underwent surgical extraction and ASD closure. The patient with aortic embolization had percutaneous device extraction and underwent subsequently successful implantation with a larger device. No patient required blood transfusion for any groin hematoma. One patient without aortic rim had hemopericardium one month after implantation; this was corrected by drainage with no recurrence and ASD full occlusion was noticed on colour Doppler control. No late complication was observed. The rate of full occlusion on Doppler control is more than 90%, and the remaining have trivial shunt.

Transcatheter ASD occlusion with the Amplatzer Septal Occluder is a safe and effective procedure. The rate of immediate complication is very low and need for immediate surgery following the implantation is rare (<1%). No device related mortality was noticed in the first 15 years after implantation.

The risk of aortic perforation in absence of anterior rim (observed in about 20% of pts) is trivial and not a real limitation in clinical practice.

Atrio-ventricular valve regurgitation in univentricular hearts: outcomes after repair

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Objective: To describe the early and midterm outcome after atrio-ventricular valve (AVV) procedure in patients with univentricular hearts (UVH) and to identify risk factors for AVV reoperation and death.

Methods: Retrospective review of patients undergoing procedure for AVV regurgitation at any phase of univentricular palliation from 1998-2013. Patient and procedure related variables were analyzed.

Results: 28 consecutive patients underwent 34 procedures for moderate+ AVV regurgitation at a median age of 3.7 years. 29% of patients had a common, 25% had dominant left, 14% had dominant right AVV and 32% two AVV. All patients underwent repair at first procedure without early mortality. At hospital discharge patients preserved their ventricular function (FS <30%; preop 17% vs. postop 21%, NS) and only 14% had moderate+ residual regurgitation. Dominant left AVV and postoperative moderate+ regurgitation were univariate risk factors for death and transplantation. Younger age, need for repair before superior cavo-pulmonary shunt and significant residual regurgitation were univariate risk factors for AVV reoperation. Freedom from death and transplantation was 84% (CI 95%±0.14) at 5 and 10 years. Survival free from AVV reoperation was 77% (CI 95%±0.18) at 5 years and 66% at 10 years (CI 95±0.25). At last visit, 91% of survivors were in class NYHA 1-2 without ventricular dysfunction and with mild or less AVV regurgitation.

Conclusion: Patients with UVH and moderate+ atrio-ventricular valve regurgitation can profit from AVV repair without deterioration of their ventricular function but remain at increased risk for death and AVV reoperation.

Extracardiac or chromosomal anomalies strongly influence parental treatment decision and postnatal survival of newborns with prenatally diagnosed congenital heart diseases

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Objective: To describe the influence of extracardiac or chromosomal anomalies on parental decision of termination of pregnancy and on survival rates in newborns with prenatally diagnosed congenital heart diseases.

Methods and results: 2057 consecutive foetuses with congenital heart disease diagnosed from January 2002 to December 2011 were included: 1258 (61%) in-born neonates and 799 (39%) terminations of pregnancy (TOP). The overall prevalence of major extracardiac or chromosomal anomalies was 18.6%. Of the 1258 newborns, 121 had a major associated anomaly but only 55 were identified before birth. Prenatally identified associated anomalies were significantly lower in the newborn group in comparison with the TOP group (4% vs 31%, p<0.0001). They were also lower in the surviving group at one year of follow up (7.5% vs 20.7%, p<0.0001). A 4-fold increase of death rate was observed if an associated anomaly was identified (IC95% [2.5-...