Conclusion.— Percutaneous stent placement for management of native or recurrent aortic coarctation is an efficient and safe alternative to surgery, and is associated with a long term reduction in blood pressure and LV hypertrophy.

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27 Closure of huge tubular patent ductus arteriosus using amplatzor vascular plug II or IV in premature infants and small children under 6 kg
Alexandre Bretonneau, Claire Cornolle, Hugues Lucron
Congenital and Pediatric Cardiology, Antilles, Guyane tertiary care center for complex congenital cardiac diseases (M3C), University Hospital of Martinique, BP 632, 97200 Fort-de-France, Martinique, French West Indies
Corresponding author.

Background.— Percutaneous closure of huge and tubular (type C) patent ductus arteriosus remain challenging or unsuccessful in small infants.

Aim.— To evaluate the usefulness and safety of Amplatzor vascular plug II and IV for percutaneous closure of very large ductus arteriosus under 6 kg.

Methods.— Single-center retrospective study including all consecutive unselected patients (<6 kg, large symptomatic ductus arteriosus) referred to our institution over a 4 years period for percutaneous closure and treated with plug II or IV. No patient was excluded and there was no failure or surgery within the weight limit to consider percutaneous closure (>2.5 kg).

Results.— Seven patients were successfully treated using vascular plug II and IV without any residual shunt. Six plug II were implanted (mean patients weight 4.3 ± 0.8 kg, mean ductus diameter 6 ± 1.8 mm, mean device size 8.6 mm (6–14), fluoroscopy time 14.6 ± 6.3 min, occlusion rate 100%, mean follow-up 6 ± 2 months) including huge type C (5) and one type E (1) ductus. Mean pulmonary artery pressure dropped from 25 ± 7 (17–38) mm of Hg to normal value in all cases and there was no aortic protrusion or embolization. One patient experienced severe but reversible pulmonary hypertension crisis in the catheter lab requiring blood transfusion. A 6 mm Amplatzor vascular plug IV was also implanted in a 4.2 kg patient (4.8 mm type D ductus, fluoroscopy 10 min, uneventful 8 months follow-up).

Conclusion.— Percutaneous closure of very large ductus arteriosus is safe and effective under 6 kg. In our experience, the vascular plug II profile allows with acceptable risk to extend indication to infants below 4 kg with huge tubular forms. This might contribute to reduce surgical indications and in hospital morbidity and to improve cost effectiveness. We believe that plug II could also be proposed in the near future for closure of conical shape (type A) with similar results.

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29 Systematic description of cardiac phenotype based on the anatomical and clinical classification (ACC-CHD) in a DNA bank for congenital heart disease
Daniela Luxa, Fanny Bajolle, Virginie Salle, Stanis Lyonnreb, Damien Bonnet
a Centre de Référence Malformations Cardiaques Congénitales Complexes (M3C)-Necker, Hôpital Necker-Enfants—Maladies, Assistance Publique des Hôpitaux de Paris, Université Paris Descartes, Sorbonne Paris Cité, Paris, France
b Service de Génétique médicale, Hôpital Necker-Enfants—Maladies, Assistance Publique des Hôpitaux de Paris, Université Paris Descartes, Sorbonne Paris Cité, Paris, France

cardiology pediatric, Clinique Pasteur, 45, avenue du Lombez, BP 27617, 31076 Toulouse cedex 3, France

Background.— DNA banks containing samples of patients with congenital heart disease are being developed at international level. The accurate anatomic description of the cardiac phenotype of such samples is a key feature for their success.

Objective and methods.— To precisely describe the cardiac phenotype of the available samples of the "CARREG" DNA bank, started in April 2009 in our institution, based on the recently published clinical and anatomic classification (ACC-CHD) and the International Pediatric and Congenital Cardiac Code (IPCCC). Samples collected...
from 01.04.2009 to 31.10.2011 were classified retrospectively based on medical records including surgical and imaging reports. Samples collected from 01.11.2011 onwards were classified prospectively.

**Results.**— Since creation of the DNA bank, 2364 blood samples have been collected after informed consent of patients and their legal representatives. They are stored in a dedicated space of the institution’s general DNA bank. Among them, there are 1299 patients’ samples and 1065 samples belonging to parents or relatives. Four hundred and sixteen triple samples (patient and both parents) have been obtained. One hundred and fifty-eight samples come from families with at least two members affected by congenital heart disease. Eighty-eight samples belong to patients without congenital cardiac defects but with other severe cardiac pathologies. Six hundred and fifty-two patient samples (50%) were coded retrospectively. Based on the ACC-CHD classification, “CARREG” contains 658 samples (51%) belonging to the group 8 (anomalies of the outflow tract). One hundred and fifty-two samples (12%) were attributed to group 4 (anomalies of the atrioventricular valve). The remaining samples were classified in group 1: 41 (3%), group 2: 22 (2%), group 3: 85 (7%), group 5: 31 (2%), group 6: 62 (5%), group 7: 55 (4%), group 9: 95 (7%) and group 10: 9 (1%).

**Perspectives.**— To make international comparison and data exchange easier, cardiac phenotyping in “CARREG” relies on IPCC and the newly developed ACC-CHD. First cooperations with national and international research partner are in progress. The development of a limited access website as communicative platform for researches will be one of the major goals in the near future.

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