Residual hypertension and aortic wall abnormalities at mid-term follow-up after native aortic coarctation stenting

Jerome Bouet (1), Issam Kammanche (2), Beatrice Bonello (2), Mohamed El Tahliawi (2), Virginie Fouilloux (2), Thomas Cusset (1), Gilbert Habib (1), Alain Fraisse (2)
(1) Hôpital de la Timone, Cardiologie Adultes, Marseille, France - (2) Hôpital de la Timone, Cardiologie Pédiatricque, Marseille, France

Purpose: The feasibility of transcatheter primary stenting (TPS) to treat native aortic coarctation (Coa) is well-demonstrated as an alternative of surgical repair. However, information on mid-term follow-up remains scarce, especially regarding the frequency of systemic hypertension and the integrity of the aortic arch. We retrospectively studied the patient’s outcome after TPS for Coa, paying particular attention to residual hypertension and aortic wall abnormalities, including arch obstruction, aneurysm and dissection.

Patients and Results: Since 2002, 20 patients (8 female) with Coa were treated by TPS at a median age and weight of 21 (7 to 52) years and 60 (27 to 94) kg, respectively. They were symptomatic in all cases with upper limb hypertension in 16. Twenty stents were successfully implanted and the mean peak systolic pressure gradient dropped from 31 (10 to 60) mmHg to 1.6 (0 to 15) mmHg. One major complication occurred in a patient who experienced bilateral groin hematomas, with hypotension and anemia necessitating transfusion. After a median follow-up of 2.9 (0.12 to 7.8) years, the 20 patients are asymptomatic. Residual upper limb hypertension is present in 7 cases (35%), including 3 (15%) treated by TPS. By transthoracic echocardiography (n=20), spiral computed tomography (n=4), and magnetic resonance imaging (n=13), there is no aortic aneurysm or dissection.

Conclusion: TPS for Coa is successful with minimal morbidity. After midterm follow-up, residual hypertension is similar to that observed after surgical repair, whereas aortic wall abnormalities are not encountered. Longer term follow-up is mandatory to confirm this favorable outcome.

Dilatative aortopathy in adults with repaired conotruncal defects.

Tobias Rutz, Max Friedrich, Andreas Wahl, Markus Schwerzmann
Cardiology, University Hospital Berne, Berne, Suisse

Background: Dilatative aortopathy is a feature of tetralogy of Fallot (TOF). Structural abnormalities of the medial aorta have also been described for other conotruncal defects, like d-transposition of the great arteries (d-TGA). This study aims to elucidate the severity of aortopathy assessed by cardiac magnetic resonance imaging (CMR) in adults with repaired TOF compared to adults with repaired d-TGA (atrial switch procedure) and normal controls (C).

Methods: In 3 groups of 20 individuals each (d-TGA, TOF, C), aortic diameters were retrospectively measured with CMR at the following levels: aortic sinus (Si), sinotubular junction (STJ), ascending and descending aorta at the level of the bifurcation of the pulmonary artery (aAP, dAP), and diaphragm (D). As a measure of aortic elasticity the aortic distensibility of the ascending and descending aorta (aAD, dAD) at the level of the pulmonary bifurcation was determined from cine images: (maximal cross sectional area (CSA) - minimal CSA) / minimal CSA / (systolic blood pressure - diastolic blood pressure).

Results: There were no differences in age and gender between groups. Dieters of Si and STJ were significantly increased in TOF as compared to d-TGA and C: Si mm/m2: 21.6 vs. 18.2 vs. 17.2, p=0.001. STJ mm/m2: 18 vs. 15 vs. 13.7 p=0.001. Diameters of aAP were significantly increased in TOF as compared to d-TGA and C: aAP mm/m2: 16.8 vs. 15.8 vs 14.4, p=0.008. aAD was significantly reduced in TOF compared to C, and showed a trend to a lower value in d-TGA: aAD 10^-3 mmHg^-1: 3.3 vs. 3.6 vs. 3.5, p=0.014 (figure). dAD showed a trend to a lower value in TOF compared to d-TGA and C: dAD 10^-3 mmHg^-1: 5.2 vs. 6.2 vs. 6.9, p=0.113.

The diameters of the descending aorta (dAP, D) did not differ significantly between the groups.

Conclusions: The intrinsic aortopathy in repaired TOF is evident by increased diameters and reduced elasticity of the ascending aorta. In d-TGA patients, the severity of aortopathy is less evident and primarily expressed by a reduced distensibility. Nevertheless, aortic dimensions in this patient group should also be carefully followed, especially with increasing age.

Insurability of patients with congenital heart disease in France

Bertrand Dugardin (1), Laurence Iserin (2), Daniel Sidi (3), Stéphanie Gourdin (2), Magalie Ladouceur (2)
(1) Médecine générale, Paris, France - (2) Hôpital Européen Georges Pompidou, Paris, France - (3) Hôpital Necker-Enfants Malades, Paris, France

Improvements in the treatment of children with congenital heart disease (CHD) have led to the majority of these patients reaching adulthood. There is little data on their ability to obtain a mortgage or a consumer loan. We supposed that the majority of adults with CHD would be denied insurance or offered higher rates independently on the severity of their heart disease.

Objective: to investigate the outcome of mortgage and loan application of adults at different severities.

Methods: four hundred and seventy six adult CHD patients underwent a questionnaire-based interview by phone. One hundred and forty two replied. CHD patients were classified into three categories based on severity according the Bethesda conference. Comparison was made between different severities of CHD.

Results: ninety (64%) patients had applied for loans or mortgages, among them; seventeen have not reported their heart disease to the insurance. Thirteen patients have been refused and 39 asked to pay extra. This concerned significantly more patients classified significant and complex according the severity of their CHD (p<0.0001 and p=0.003, respectively compared with mild). No difference was observed between patients classified significant and complex. Age, sex, other diseases, cardiovascular risk factors and duration of the loan had no influence on loan applications.

Conclusion: adults with CHD are significantly more likely to have difficulty obtaining a mortgage or a loan independently of severity of CHD. Despite a better ability to obtain a loan for CHD with mild severity, refusal rates are the same in significant and complex CHD. This suggests that the label CHD may have a negative impact despite the improvement in the management of adults with CHD whose life expectancy is increasing.