PW1-3

Percutaneous Fenestration Closure using the Amplatzer Ductus Occluder II – Increasing the Experience

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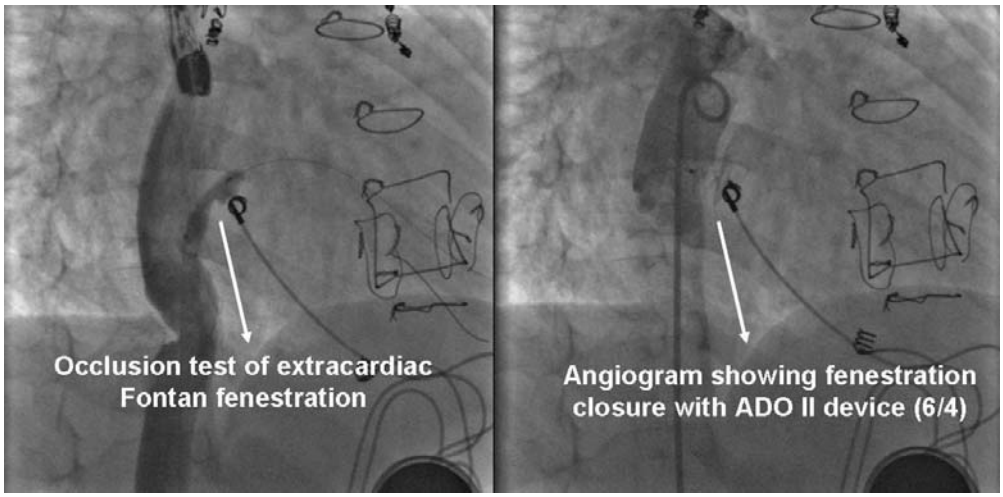
Introduction: In the late 60's Fontan/Baudet described the basis for the surgery that became the final palliative surgery for single ventricular lesions. Since then, a relevant number of changes have been added to the classical Fontan operation, as Fontan baffles fenestration. With the aim of improving O2 saturation and withdrawing anticoagulation, percutaneous fenestration closure in patients with a stabilized chronic hemodynamic situation became a routine procedure in many centers. To this purpose, many different devices have been used.
Aim: Evaluate the efficacy and safety of the Amplatzer Duct Occluder II (ADOII) for Fontan fenestrations occlusion.

Methods: Retrospective review of medical records of all patients undergoing fenestration closure after Fontan procedure in the last 3 years. Each patient had complete right and left heart catheterization and fenestration test occlusion with a Thysak Mini Balloon, to assess hemodynamic suitability for closure (conduit pressure <15mmHg); defect size was determined by transesophageal echocardiography.



Results: During this period, 27 Fontan fenestrations were percutaneously closed; in 22 cases (81.4%) ADOII was the implanted device (10 with extracardiac conduit and 12 with intracardiac lateral tunnel). Mean age was 7yrs (18-5yrs) and mean weight was 25Kg (18-81kg). All the patients tolerated test occlusion and fenestration device occlusion without significant changes in arterial or venous pressures. Mean pressure in Fontan circuit increased from 10.4 mmHg (6-15mmHg) to 11.7 mmHg (8-15mmHg). PaO2 showed a mean increase of 51.8mmHg – range: 17-92 mmHg; FiO2 <40% ($p<0.001$). Only one patient presented significant device protrusion in the baffle, which was retrieved and replaced by a covered stent, with good result. Immediate post-implantation angiogram revealed trivial residual leaks in 11 patients, but subsequent follow-up echocardiography showed complete occlusion in all patients. The device position and integrity was satisfactory and there were no complications during the follow-up period.

Conclusion: ADOII device can be used safely and successfully in Fontan fenestrations percutaneous closure. Its low hemodynamic profile favours its easy implantation without significant protrusion on both sides of the conduit.