

# Clinical News Corner

Focusing on current and new clinical procedures An Andramed Publication

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## Case Report: Pulmonary artery stenosis treated with AndraStent in Fontan-Circulation

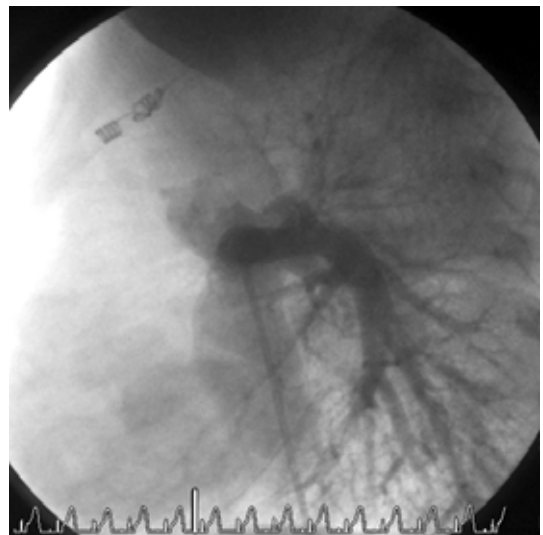
**References:** Dr. C. Beck and Dr. N. Haas, Department of Paediatric Cardiology, HDZ-NRW Bad Oeynhausen, Germany email: cbeck@hdz-nrw.de

**Case History:** A 2½ year old boy with Hypoplastic Left Heart Syndrome underwent staged single ventricle palliation with Fontan completion at 21 months of age. Because of recurrent pleural effusion postoperatively he received a 4 mm fenestration in his extracardiac tunnel. Cardiac MRI revealed a significant stenosis at the left pulmonary artery (LPA) origin and mild hypoplasia of the proximal vessel.

**Procedure:** Cardiac catheterisation was carried out in deep conscious sedation and without general anaesthesia through the left femoral vein. A 5 Fr. Berman Angio catheter was advanced into pulmonary arteries anastomosis site and angiography confirmed stenosis at the LPA origin and mild hypoplasia of the proximal LPA of approximately 20 mm length with preferential blood flow to the right lung (Fig 1a+b). Mean central venous pressure was 16 mmHg with no gradient between IVC, SVC, LPA and RPA. After careful measurement of the anatomy and diameters the Berman Angio catheter was replaced by a 9 Fr. Mullins sheath (Cook) over an Amplatzer superstiff exchange wire.



**Fig 1a**  
Angiogram into LPA in AP projection showing stenosis at the LPA origin and mild hypoplasia of proximal LPA.



**Fig 1b**  
Angiogram into LPA in lateral projection showing stenosis at the LPA origin and mild hypoplasia of proximal LPA.

A 21 mm XL AndraStent (Andramed Germany) was hand-crimped on a 10 mm x 30 mm Zed Med II Ballon (NuMed) and hand injections confirmed optimal stent position in the LPA stenosis site (Fig 3). The balloon was inflated with 10 atm using an inflator. The post implantation angiogram demonstrated an optimal stent position with relief of the obstruction and no extravasation (Fig. 4a+b, 5). The proximal end of the stent was flared with a 12 mm x 20 mm Opta Pro Ballon (NuMed). The stent shorting was 6% with a homogeneous diameter. Overall procedure time was 154 minutes with a fluoroscopy time of 14 minutes. The patient was discharged home 48 hours post procedure.

Cardiac MRI 6 month after after stent implantation demonstrated an optimal stent position and a flow distribution of 61% to the right lung and 39% to the left lung.

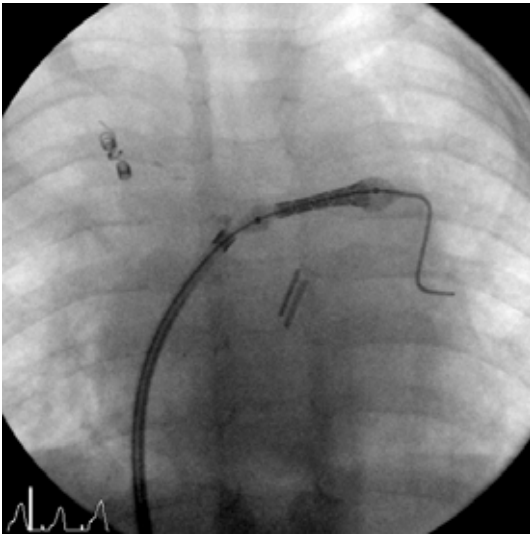


Fig 3  
Picture of stent implantation in AP projection.

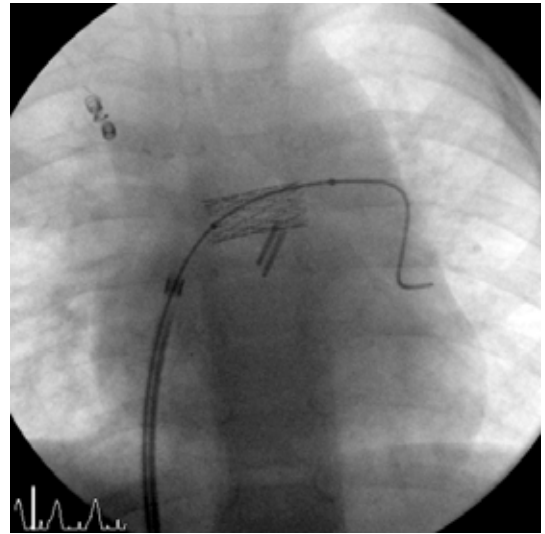


Fig 4a  
Picture in AP projection following stent implantation.



Fig 4b  
Picture of proximal stent flaring in AP projection



Fig 5  
Angiogram after stent modulation showing increased proximal LPA diameter in AP projection.

**Result:** Specific modulation of the AndraStent stent morphology was possible to achieve an optimal anatomic result with excellent angiographic result. Together with the added benefits of the chromium-cobalt technology as well as the semi-open cell design, placing the stent in a angulated part of pulmonary vessels seems easily achievable.

