

Implantation of bioabsorbable scaffolds in a baby with repeated stenoses of all pulmonary veins

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History: At the age of 3 months a male patient developed severe stenosis of all pulmonary veins. In the cathlab all stenosis were dilated using Paclitaxel covered balloons (IN.PACT Falcon, Invatec, Germany) and conventional balloons (Sapphire, Orbus Neich, Hong Kong). Patient was dismissed home. After three months restenoses occurred. Surgical correction with the sutureless operation was performed and assisted by intraoperative balloon dilation with Paclitaxel covered balloons (Elutax, Aachen resonance, Germany). Again the patient was dismissed home. Three months later he reappeared with hypersystemic right ventricular pressures. Under compassionate care regulations and after having obtained informed consent by the parents, decision was made to implant bioabsorbable Novolimus covered scaffolds (DeSolve, Elixir, USA).

Angiography and/or other diagnostic tests: stenosed and stented left lower pulmonary vein.

Procedure: A hybrid approach was chosen to reduce procedure time and radiation. All but the right upper pulmonary veins were found severely obstructed and were consequently stented with 4 * 18 mm and 3.5 * 14 mm DeSolve scaffolds under x-ray guidance. After proper placement the delivery material was completely removed and the chest closed. The patient could be extubated after 24 hours and was sent home twelve days later. Medication was diuretics, aspirine and clopidogrel.

Conclusion: Bioabsorbable scaffolds with cytostatic drugs may help to overcome the otherwise often fatal prognosis of intrinsic pulmonary vein stenosis. It rapidly improves the acute life-threatening situation and possibly reduces the chance of restenosis by its continuous cytostatic delivery to the tissue.

Comments: This is a single case with only short term follow-up, so more data and longer follow-up will be needed to allow a conclusion on the possible efficiency of scaffolds in congenital heart diseases. The use of bioresorbable material is still of great interest is all young patients with further growth of their vessels to expect.