

Left Pulmonary Artery Stenting in the Palliated Hypoplastic Left Heart

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Introduction

Left pulmonary artery (LPA) stenosis is a well recognized complication following palliation for hypoplastic left heart syndrome (HLHS). These lesions are a significant factor increasing resistance in a circulation in series. Therefore they are an important negative impact on haemodynamics and flow. Over the last decade we have taken an aggressive approach to stenting LPA stenoses. This is a single-centre experience looking at medium term outcomes.

Patients and Methods

Between 2000 and 2011, eighty patients palliated for HLHS underwent LPA stenting. Thirty-one underwent stenting prior to Fontan at a median age 51.1(16.2-95.8) months and weight 15.5(9.3-19.5)kg. Four stents were inserted intra-operatively at Fontan completion (age 31-71 months, weight 13.1-17.5kg). Forty-five were placed following Fontan at median age 61.1(26.3-185.3) months, weight 17.2(11.5-55.2)kg and 12.9(0.3-1348)months-post. Indications for stent implantation were angiographic stenosis, long segment hypoplasia and/or LPA-SVC pressure gradient. This is a retrospective case-note review.

Results

Uncovered stents were used with median diameter of 10(8-15)mm and length 28(12-48)mm. Thirty-five patients have been re-catheterized at median 26(1-83) months after stent implantation. Twenty (57.1%) required no intervention with fourteen (40.0%) undergoing stent re-dilation to compensate for somatic growth. Re-stenosis due to neo-intima was rare, seen in only one (2.9%) case. There were no significant complications during any of these procedures.

Conclusion

LPA stenting is an important and effective therapy in patients palliated for HLHS to reduce overall vascular resistance in an effort to improve haemodynamics. Re-stenosis due to neo-intimal proliferation is rare and stents can be re-dilated to accommodate for somatic growth.