

### Results of interventional procedures in children with aortic arch hypoplasia or stenosis after coarctation surgery.

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In aortic coarctation (CoAo) with borderline aortic arch (AoA), surgical treatment is usually related to coarctation itself. In some cases AoA develops inadequately with age or there are postoperative stenotic lesions requiring reoperation or intervention procedures because of systemic hypertension. The aim of the study was the analysis of the results of interventional treatment of AoA hypoplasia or stenosis in pts after coarctation surgery.

**The material** consisted of 34 pts after different types of CoAo surgery (age  $x = 1.8$  years), qualified to reintervention between 2000-2010, on the ground of systemic hypertension and results of ECHO studies (postoperative stenosis or hypoplasia of AoA).

**Methods:** All the pts underwent angiocardiographic/hemodynamic studies at the age:  $x = 7.3$  years and – with the exception of 2 (5.9%) - were subjected to balloon angioplasty (BAA) or stent implantation.

**Results:** In 2/34 pts, the procedure was postponed because of gothic shape of the AoA and the need for the stent to cover the origin of all AoA arteries.

**BAA:** Among 16 pts with AoA stenosis (age:  $x = 2.4$  years, body weight:  $x = 12.0$  kg), in 13(81,2%), the BAA results were satisfactory (Tab. 1), while in 3 the outcome was poor because of AoA hypoplasia and inadequate body weight of the pts for stenting. Tab.1. Outcome of BAA in pts with satisfactory results

Results of BAA in 13 pts with AoA stenosis	Pressure in ascending Ao (mmHg)	∅ of stenosis of AoA (mm)	Pressure gradient (mmHg)
Before	111.3	3.7	34.2
After	96.6	5.2	15.6
	P=0.035	P=0.14	P=0.01

**Stenting:** In 16 pts (age:  $x = 12.0$  years, body weight: 42.3 kg), the results of stent implantation were satisfactory. Tab 2. Outcome of stent implantation in pts with satisfactory results.

Result of stent implant. in 16 pts with AoA hypopl.	Pressure in ascending Ao (mmHg)	∅ of the narrowest AoA segment (mm)	Pressure gradient (mmHg)
Before	110.5	8.2	20.6
After	101.5	13.0	4.4
	P=0.051	P<0.01	P<0.01

**Conclusions:** 1 Results of interventional procedures in the majority of children with postoperative AoA stenosis are satisfactory. 2 Limitations of stent implantation in AoA hypoplasia except of AoA anatomy are age and inadequate body weight of pts.