CP Stent Implantation in the Children with Coarctation of the Aorta: Short-Intermediate-Long Term Results From Turkey in a Single Centre

Erciyes University Faculty of Medicine, Department of Pediatric Cardiology, Kayseri-Turkey (1) Erciyes University Faculty of Medicine Pediatric Radiology, Kayseri-Turkey (2)

Objectives: Our aim was to evaluate patients with coarctation, who were treated by percutaneous stent implantation.

Method: Patients with coarctation (n=36, 26 male) who had been treated with 39 stents (12 bare, 27 covered) were evaluated. The demographics, procedural and follow-up data were recorded from hospital registers and compared among the patient specifications (e.g. weight, coarctation nature).

Results: Mean follow-up time was 39±16 months. There was a statistically significant difference between the patients with native coarctation (n=17) and recurrent coarctation (n=19) in terms of pre-procedural blood pressures, systolic gradients, coarctation diameters and the ratio of coarctation site diameter to descending aorta (CoA/DAo). While all patients received antihypertensive drugs before the procedure, the drug was discontinued in 27 patients during follow-up (p<0.001). The procedure was successful in all patients. Stent migration was observed in four patients (11.1%) (all of them with recurrent coarctation) and peripheral arterial injury was seen in three patients (8.3%). On average 21(6-42) months after the procedure, six patients underwent cardiac catheterization. Four of these patients underwent balloon dilatation. At least two years following the procedure, multislice CT was performed in 21 patients (58.3%). The patients who were evaluated by MSCT revealed no pathology such as restenosis, intimal proliferation in the lumen of the stent, aneurysm formation, stent fracture and migration. Five patients (13.9%) were <20 kg, 16 patients (44.4%) were <30 kg (11-70). There was no statistically significant difference between the five patients weighed <20 kg and the other patients in terms of demographic-procedural characteristics, procedure success and complication rates and follow-up data (Figure).

Conclusion: Stent implantation for coarctation of the aorta is a method with satisfactory results in the reduction of both invasive and non-invasive gradients and in the efficient enlargement of the lesion area. CP stents may also be applied to the selected patients whose anthropometric measures are below the age and weights recommended by the manufacturer. Although multislice CT results alone do not seem to be a marker in the determination of patients who need a re-intervention, multidisciplinary evaluation using the available imaging methods seems to be the best follow-up model in the patients at risk.