

**Percutaneous closure of perimembranous and postsurgical ventricular septal defects with Amplatzer Duct Occluder II Additional Sizes in pediatric patients**

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**Background** Reports of percutaneous closure of perimembranous and residual postsurgical ventricular septal defects (pmVSD and psVSD) are scarce. We aim to present our preliminary experience with Amplatzer Duct Occluder II Additional Sizes (ADOIIAS) implantation in selected patients (pts) with pmVSD and psVSD. We have found no previous reports regarding such ADOIIAS application.

**Methods** We analyzed retrospectively 6 children with a percutaneous attempt to pmVSD (4 pts) or psVSD (2 pts) closure with ADO II AS. ADO II AS (St. Jude Medical, Inc) is a device originally designed for ductus arteriosus closure. There are three different waist-disc diameters available (3 mm – 4 mm, 4 mm – 5,25 mm, 5 mm – 6.5 mm), every with subsequent three different waist lengths available (2, 4 and 6 mm). Dedicated Amplatzer TorqVue LP 4 French catheter is recommended for the deployment procedure. Briefly, ADO II AS is a symmetrical, self-expanding, single mesh layer nitinol occluder. The devices were implanted in 3 pts from arterial side and in 3 from venous side ( after arteriovenous loop creation).

**Results:** Median age of treated children was 2,5 years (range 1,3 – 8,8). There were 4 aneurysm-type pmVSD (diameter from 2,5 to 3 mm) and 2 psVSD (after Tetralogy of Fallot correction first localized in outflow tract and the second Gerbode type (left ventricle-right atrium connection) with diameter 2,5 and 3,2 mm respectively. There were 4 implants 5/2mm, one 5/4 and 4/4 mm used. All attempts were successful and no major periprocedural complications occurred. The median fluoro time was 25,5 (range 9-36,4) minute. Complete heart block has not been noticed during implantation at any stage of the follow-up (median 10,5 month; range 1-21). We have not observed more than trivial aortic insufficiency after device implantation or tricuspid insufficiency progression. Two patients with psVSD had insignificant residual shunt after the procedure, that was constant in the follow-up.

**Conclusion** ADO II AS seems to be a good device for closure selected pmVSD as well as psVSD. Preliminary safety data are encouraging. Mid-term and long-term results should be further evaluated.