ADO II in Percutaneous VSD Closure of Pediatric Patients:


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Background:
It is hard to find an ideal device to use for every VSD successfully. If inappropriate device was chosen; complication rate increases, procedure time gets longer that prolongs exposure to ionizing radiation. Therefore interventionalists are in the search for new ideal devices. Main aim of our study to show that ADO-II device can be used for small ventricular septal defects successfully, safely with low complication rates.

Methods and Results
Between the dates April 2011- October 2014, 17 VSD closures with ADO-II device. Actually there were 16 patients but one of the patient had 2 perimembranous defects which were closed separately. Patients having muscular and perimembranous VSD with hemodynamically significant left to right shunt detected by clinical examination and echocardiography were included in the study.

Results:
Age of patients ranged between 3-18 years. Weight of the patients was between 14-76 kg. VSD diameter ranges between 2-6.7mm (3.75±1.25). One of them was muscular, eighteen of them were perimembranous type. Fourteen of the perimembranous defects were aneurysmatic, tunnel shaped.

We have used mostly venous route (12 patients) for closure. One of the patients had two separate VSDs. The distance between two defects were 7 mm. Therefore we have used two separate devices to occlude them. One of the defect was 3.2 mm, occluded with ADO II sized 5x4 from arterial side. The other one was 3.4 mm width and closed with 5x6mm ADO II from venous side. All cases were successfully closed, no major complications were reported. There was no incidence of left bundle branch block, P-R prolongation, or complete heart block.

Conclusion
Perimembranous aneurysmatic ventricular septal defects are difficult, risky for percutaneous closure because of its proximity to aortic, atrioventricular valves, conduction tissue. We have showed that ADO-II devices (in fact they are off-label use) can be used safely, effectively in such defects. Up to our knowledge this is the only study includes largest number of pediatric patients whose VSD were closed by ADO-II.