

**Transcatheter Closure of Perimembranous Ventricular Septal Defects Using the Amplatzer Perimembranous Ventricular Septal Defect Occluder in Children: Initial and 4-year Results. A Multicenter Study**

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Introduction: In this report we present experience with 65 patients (pts) with PMVSDs who underwent transcatheter closure at 5 different Institutions with the Amplatzer PMVSD occluder and had completed a 4-year follow-up. Methods: The age of the pts ranged from 0.3 to 15 years and the weight from 5 to 46 Kg. During the study period 24 (38%) other patients were excluded from transcatheter closure because they did not fulfil the patient selection criteria (distance less than 2 mm from the PMVSD to the aortic valve, size of VSD in relation to patients age). Results: The device was permanently implanted in all patients. Complete occlusion of the communication at six month, one-year, and 2-year follow-up was observed in 89.2%, (58/65 pts), 92.3.8 % (60/65 pts), and 93.8% (61/65 pts). Main complications included: Early. a. Device embolization (2 patients-catheter removal), b. severe procedural bradycardia (4 pts) and Mobitz II heart block (3pts, sinus rhythm after device removal). Late. Complete heart block (1 pt-epicardial pacemaker was inserted). No other patient developed heart block during the 4-year follow-up. Three patients developed a mild aortic regurgitation not seen early after the procedure. In 2 of them the regurgitation was not seen at the 1-year follow-up. No other complications were observed. Conclusions: Transcatheter closure using the Amplatzer PMVSD occluder is as a safe and effective nonsurgical alternative that should be offered in properly selected patients with PMVSDs. However, due to anatomic reasons, this therapy cannot be offered to significant number of patients with these defects.