Transcatheter Closure of Perimembranous Ventricular Septal Defects (PmVSD) with Nit Occlud® Lê VSD Coil: Early and Mid-Term Results

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Background and Aim: Percutaneous techniques have been developed in order to reduce the impact of drawbacks of surgery. Since the first VSD closed by a transcatheter approach by Locket et al. various devices and techniques have been used. Here in we present our early and mid-term results of patients who underwent transcatheter closure of VSD using Nit Occlud® Lê VSD Coil.

Patients and Methods: We retrospectively reviewed our echocardiographic, angiographic, electrocardiographic and 24-hour Holter ECG data of transcatheter closure of VSD using Nit Occlud® Lê VSD Coil.

Results: Our approach to place a Nit Occlud® Lê VSD Coil were successful in 13/14 patients (93%). The median age at closure was 7.6 years (range 1.7-17 years) and the median weight was 25.5 kg (range 10 to 58 kg). All of the PmVSDs were with ventricular septal aneurysm except one. The median device size used was 8/6 (range 8/6 to 12/6). The median procedure and fluoroscopy time were 93.8 minutes (range 40-180 min.) and 32 minutes (range 13.3-67.4 min.) respectively. The median aortic rim was 4.7±1.8 mm (range 0-8 mm). When the procedures were completed the total occlusion rate was 11/13 (84%). One patient’s residual VSD closed spontaneously in a month. But in the other one we observed severe hemolysis which was resistant to medical therapy. An additional coil was placed in to the residual VSD but it was not successful to reduce hemolysis. After seven days this patient underwent surgical VSD closure. None of the patients developed valvular regurgitation during follow up. During the procedure or in follow up (mean 7.7 months) none of the patients developed high degree AV-block. No deaths occurred.

Conclusion: Transcatheter closure of PmVSD with shorter or without aortic rims and ventricular septal aneurysms can be performed by Nit Occlud® Lê VSD coil. The most important advantage of this device is seem to be free of high degree AV block. For the evaluation of the clinical implications and long term complications, studies with longer follow up periods are needed.