



TRANSCATHETER SUBARTERIAL DOUBLY COMMITTED VENTRICULAR SEPTAL DEFECT CLOSURE WITH PROLAPSED RIGHT CORONARY CUSP: IS IT OKAY TO IMPINGE THE AORTIC CUSP?

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History and physical:

A 4-year-old girl with body weight of 18 kgs consulted to National Cardiovascular Center Harapan Kita outpatient clinic with murmur on physical examination, no symptom of heart failure, normal growth and development. A harsh holosystolic murmur heard on left mid sternal border without displaced cardiac apex, and other physical findings were unremarkable.

Imaging:

Transthoracic echocardiography revealed small (2-3 mm), left to right shunt subarterial doubly committed ventricular septal defect (SADC VSD) with prolapsed right aortic cusp (RCC), without aortic regurgitation (AR). Left ventricular dimension and systolic function were normal (LVEF 60%).

Indication for intervention:

We decided to perform transcatheter VSD closure despite absence of symptoms to prevent the development of infective endocarditis or new AR due to prolapsed RCC.

Intervention:

Pre-procedural transesophageal echocardiography (TEE) in catheterization laboratory revealed 2x4 mm SADC VSD, left to right shunt, no AR and mildly prolapsed RCC. Therefore, we decided to use KONAR-MF VSD Occluder (Lifetech) no 8/6 from retrograde (trans-arterial) approach. With fluoroscopy guided, we were able to cross VSD using a 5F internal mammary artery (IMA) catheter and replace it with 5F Judkins Right (JR) guiding catheter as the delivery catheter. The relative low-pressure disk of device KONAR-MFO 8/6 was attached to delivery cable (reverse technique), in order to prevent the hard-pressured disk from damaging the aortic cusp. We successfully deployed the device using TEE guided but the whole length of low-pressure disk impinged half of the RCC but without either obstruction or disturbance of the valve's mechanic. Post-procedural TEE showed good device deployment without any residual

shunt and no newly developed AR. TTE evaluation after 3 months showed no development of new AR or damage on aortic cusp despite impingement of low-pressure disk into the cusp.

Learning points of the procedure:

We reported one case of successful transcatheter SADC VSD closure with prolapsed RCC using KONAR-MF VSD occluder device and although the low-pressure disk impinged the RCC, there were no mechanical complication occurred during immediate and intermediate follow up.

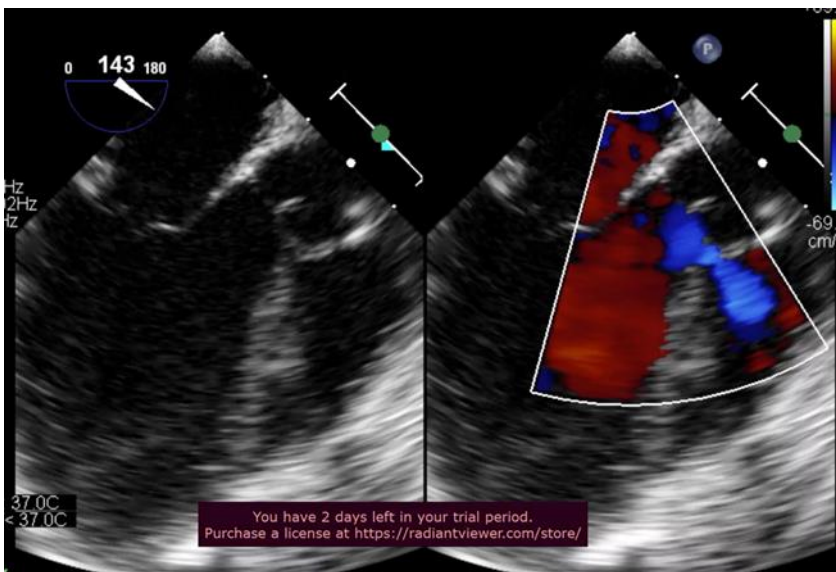


Image 1.: TEE long axis view revealed small SADC VSD with mild prolapse of the RCC with no AR.

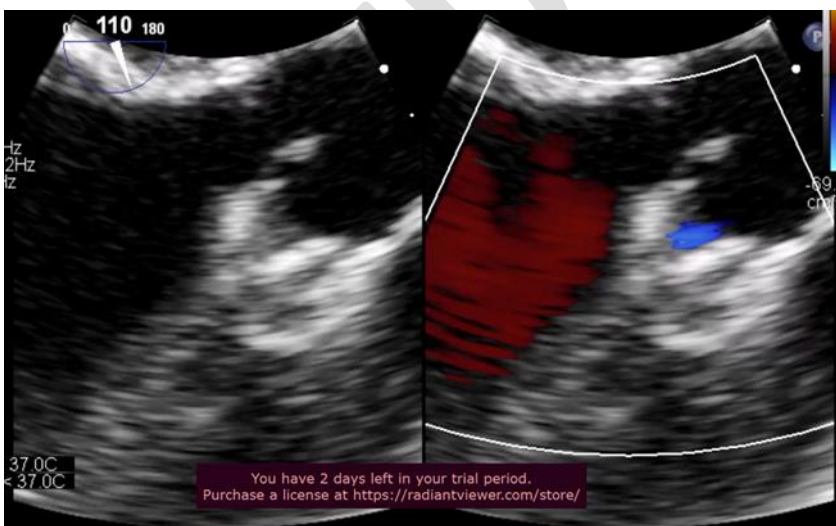


Image 2: TEE long axis view after deployment of KONAR-MFO (Lifetech) device no 8/6 showed well-seated device. Noted that low pressure disk impinged the RCC without any disturbance of the cusp's mechanic or valve coaptation.