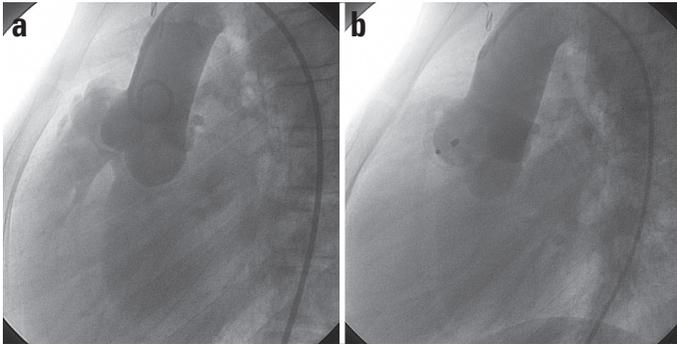


## Transcatheter closure of ruptured sinus of valsalva aneurysm using symmetrical perimembraneous VSD device

A 10-year-old patient who was operated for ventricular septal defect (VSD) 3 years previously was admitted to our outpatient clinic with chest pain. Physical examination revealed a grade 3 continuous murmur. Transthoracic echocardiography revealed a 7-mm ruptured sinus of valsalva aneurysm (SOVA) with a left-to-right shunt from the aorta into the right ventricle and mild aortic regurgitation. We decided to apply transcatheter closure (TCC) to the ruptured SOVA.

The procedure was performed under transthoracic echocardiography guidance. After aortic root angiogram (Fig. 1a), which confirmed the left-to-right shunt, the 0.035-inch hydrophilic guidewire crossed to the right ventricle from the aorta. An amplatz stiff guidewire was advanced to the right ventricle through a multipurpose catheter. A 10-mm symmetric VSD occluder was advanced in a 7f sheath. After implantation of the 10-mm device, no rest shunt remained detectable and coronary flow was normal. Medication with heparin (100 U/kg bolus) was administered. After release, the ascending aortography showed complete closure of ruptured SOVA and decrease of aortic insufficiency, and there was no relationship between the device and coronary arteries (Fig. 1b). The patient remained asymptomatic at follow-up at >1 year after the procedure.



**Figure 1. (a) Aortic root angiogram showed ruptured sinus of valsalva aneurysm of the right ventricle and moderately large aortic regurgitation. (b) Stiff guidewire and right Judkins catheter passed through the sinus valsalva and advanced to the right ventricle**

Open surgical repair has been conventionally used to treat ruptured SOVA. However, TCC has been reported as an alternative treatment option for ruptured SOVA. A symmetrical perimembraneous VSD device can be safely used for closure of the defect, and to our knowledge, this is the first such experience.

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