Ventricular Septal defect with Aortic Regurgitation Resembling Ruptured Sinus of Valsalva in a 24 year old woman

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Abstract

Ventricular septal defect (VSD) can be associated with various complications such as aortic regurgitation (AR). Here we report a 24 year old woman with VSD, AR and right coronary cusp prolapse which resembled as ruptured sinus of valsalva (RSOV) into the right ventricle (RV) on aortic root angiogram.

Keywords: Ventricular septal defect, Aortic regurgitation, Ruptured sinus of Valsalva

A 24 year old woman referred to us with complaints of dyspnea on exertion. She was detected to have heart disease in child hood and was not on any treatment. She was having functional class II dyspnea till date. On examination, her pulse rate was 80 bpm with high volume and collapsing character and blood pressure was 140/60 mm Hg. Cardiovascular system examination revealed cardiomegaly, soft S1, variable split S2, grade 4/6 pansystolic systolic murmur at left lower sternal border and an early diastolic murmur at pulmonary area. Chest x-ray showed cardiomegaly with increased pulmonary vascularity. Electrocardiogram revealed biventricular hypertrophy. Transthoracic echocardiogram showed 7mm perimembrous VSD with left to right shunt and moderate aortic regurgitation with right coronary cusp prolapse. Aortic root angiography showed right coronary cusp prolapse and contrast opacification of RV from right aortic sinus resembling RSOV (Figure 1 A, B). AR was moderate on aortic root injection. Subsequent trans-esophageal echocardiography (Figure 2 A, B) ruled out RSOV and confirmed right coronary cusp prolapse causing AR. Patient was referred for surgical closure of VSD.

Figure: 1 Tran-esophageal echo-showing: A) Right coronary cusp prolapse (arrow) B) Aortic regurgitation (arrow)

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Transesophageal echocardiography is very useful in these cases to rule out RSOV which may help the surgeon during repair of VSD.\textsuperscript{3,3}

**Implications to clinical practice:** In case of VSD complicated by AR, prolapse of right coronary cusp or non coronary cusp into RV should be properly assessed. Aortic root angiography may clearly demonstrate the right coronary cusp prolapse and AR. If an aortic root angiogram mimics RSOV into RV, a trans-esophageal echocardiography should be done for better assessment of aortic cusp prolapse. Here trans-esophageal echo helped us to rule out RSOV.

**Conflict of interest:** Nil

**Reference**