

A RARE CASE OF SINUS OF VALSALVA ANEURYSM PRESENTING WITH TRICUSPID STENOSIS AND RIGHT HEART FAILURE

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PRESENTATION OF CASE

A female patient of age 48 years came with the complaints of dyspnoea on exertion, no history of orthopnoea or PND attacks. There is history of easy fatigability and mild abdominal distension, since past 3 months. On clinical examination, she is moderately built and nourished.

There was no pallor, cyanosis, clubbing, lymphadenopathy, oedema and icterus. Family history was not significant. She was conscious and coherent. Vitals were within the normal limits. Her BP being 120/76 mmHg. She was found to have an elevated JVP up to angle of the mandible with a prominent "A" wave, and on palpation, there are no thrills or sounds palpable and on auscultation first heart sound and a normal split second heart sounds were heard with no added sounds or murmurs being heard and the presence of free fluid in the abdomen was confirmed. Hepatomegaly was also noticed. Clinically, she was thought to have right heart failure. Her ECG showed that she was in atrial fibrillation with controlled ventricular rate.

DIFFERENTIAL DIAGNOSIS

At this point of time, our differential diagnosis included ASD with PAH as she got the history of right heart failure features, but as there is no wide fixed split with the pulmonary vasculature being normal ASD was not considered. Other possibility is CRHD with tricuspid valvular involvement, but since there are no signs of other valvular involvement or the previous history of rheumatic fever in the past, this was not considered.

CLINICAL DIAGNOSIS

Clinically, she was diagnosed to have chronic right heart failure.

ECHOCARDIOGRAPHIC DIAGNOSIS

With this history, she was taken for echocardiographic examination, which showed a right atrial mass, which is also compressing the tricuspid orifice leading to increased

gradients across the tricuspid orifice. The mean gradient that was observed is 9 mm of Hg, which is much higher to say it as the significant TS gradient should be between 2 mm of Hg to 10 mm of Hg¹ in the normal condition where there is almost no gradient across tricuspid valve and as this mass is seen to arise from aortic sinus. Her echo was ended with a conclusion of having a sinus of Valsalva with aneurysm of non-coronary cusp, which is presenting as right atrial mass and also compressing the tricuspid valve as evidenced by increased gradient across tricuspid valve, and in the aneurysmal segment, there is spontaneous echo contrast was also noted.

This was confirmed by doing a transoesophageal echocardiography showing an aneurysm arising from the aortic root and compressing the tricuspid valve.

Management

As the patient is symptomatic, she was first stabilised on diuretics as there is a risk of cerebrovascular accident due to the presence of large aneurysmal segment with spontaneous echo contrast being noted. She was started on oral anticoagulation.

She proceeded for the surgery after stabilisation where after keeping the patient on cardiopulmonary bypass, a transverse aortotomy was done and aneurysmal part was resected and that was closed with a pericardial patch and gradually patient recovered and got discharged in a stable state.



Sinus of Valsalva with Aneurysm Compressing Tricuspid Valve with Mean Gradient across Tricuspid Valve being 9 mm of Hg

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DISCUSSION OF MANAGEMENT

Sinus of Valsalva are the out pouching's in the wall of the aorta just above the attachment aortic cusps. Aneurysms account for 1% of congenital anomalies of the heart and circulation.² 90% to 95% of aneurysms originate from right or non-coronary cusp leaving just a few that arise from the left sinus. In ruptured SVA, the clinical presentation depends on the rapidity with which it ruptures and the cardiac chamber with which it communicates. These cases usually present with severe dyspnoea, chest pain and haemodynamic instability or with progressive heart failure.

Unruptured SVAs are usually asymptomatic and incidentally detected. They may become symptomatic if they cause mass effect on the adjacent cardiac structures.

The clinical presentation depends upon degree of compression of neighbouring structures, competition for intracardiac space, rupture and dissection into IVS. Therefore, the spectrum of presentation in the descending order of frequency includes rupture, incidental detection without rupture, infective endocarditis, thromboembolism, valvular regurgitation, CHB and ventricular dysfunction.

Isolated aneurysm causing right heart failure is rare, although some cases were reported, most of them like those especially by A.G Desai et al,³ Levine et al⁴ were mainly due to RVOT obstruction, i.e. aneurysm of Valsalva compressing RVOT leading to right heart failure. Sinus of Valsalva aneurysm compressing tricuspid valve is extremely rare cause for tricuspid stenosis thereby leading to right heart failure. In our case, sinus of Valsalva aneurysm presented as a right atrial mass causing obstruction to tricuspid flow leading to right heart failure. Although, Gibbs et al⁵ has reported a sinus of Valsalva with aneurysm causing right heart failure, but that was due to the presence of tricuspid

stenosis, tricuspid regurgitation, but in contrast, our case had predominantly tricuspid stenosis with no tricuspid regurgitation leading to right heart failure.

CONCLUSION

Tricuspid valve is the largest orifice and it is very rare for the sinus of Valsalva aneurysm to compress upon its orifice. Here, we described a case where a large sinus of Valsalva with aneurysm causing tricuspid stenosis with right ventricular failure features.

REFERENCES

- [1] Baumgartner H, Hung J, Bermejo J, et al. Echocardiographic assessment of valve stenosis: EAE/ASE recommendations for clinical practice. *European Journal of Echocardiography* 2009;10(1):1-25.
- [2] Wells T, Byrd B, Nierste D, et al. Sinus of Valsalva aneurysm with rupture into interventricular septum and left ventricular cavity. *Circulation* 1999;100:1843-1844.
- [3] Desai AG, Sharma S, Kumar A, et al. Echocardiographic diagnosis of unruptured aneurysm of right sinus of Valsalva: an unusual cause of right ventricular outflow obstruction. *AHJ* 1985;109(2):363-364.
- [4] Ricardo LL, Marcela AD, Marcos S, et al. Sinus of Valsalva aneurysm with right ventricular outflow tract obstruction. *REV Argent Cardiol* 2011;79:368-370.
- [5] Gibbs KL, Reardon MJ, Strickman NE, et al. Hemodynamic compromise (tricuspid stenosis and insufficiency) caused by an unruptured aneurysm of the sinus of Valsalva. *J Am Coll Cardiol* 1986;7(5):1177-1181.