Abstract: 1645

A rare case of sub aortic membrane mimicking valvular aortic stenosis

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Topic(s):
Transesophageal Echocardiography

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Introduction:
Sub aortic membrane is uncommon cause of aortic stenosis. It is typically located 0.5-1.5 cm beneath the aortic valve. We describe a case of an unusual anatomical site of sub aortic membrane where the membrane is noted to be immediately below the aortic cusps and attached to the LVOT side of the non-coronary cusp restricting its opening.

Case presentation:
A 17-year-old boy presented to our institute for follow up of aortic stenosis. Three years ago, he was diagnosed with severe aortic valve stenosis at another medical facility. He had a transthoracic echocardiogram which revealed a dysplastic aortic valve with severe stenosis and moderate regurgitation. Suprasternal Doppler interrogation demonstrated a peak trans-valvular gradient of 5 m/s and a mean gradient of 50 mmHg. At that time, he had been evaluated for surgical intervention and was advised to repeat echocardiogram in 6 months. However, he was lost to follow-up and presented to our institution three years later. He remained asymptomatic.

A transthoracic echocardiogram performed at our institute revealed severe aortic stenosis and moderate regurgitation. A trans-valvular peak gradient of 105 mmHg and a mean gradient of 65 mmHg were demonstrated . There was no evidence of LVOT obstruction. The aortic valve appeared tricuspid and cusps were mildly thickened with restricted mobility of the non-coronary cusps.

In view of mildly abnormal aortic valve cusps and discrepancy between AV morphology and severely elevated transvalvular gradient, a cardiac MR and transesophageal echocardiogram were pursued for better anatomical delineation.

Cardiac MR revealed an anatomically trileaflet aortic valve with severe functionally bicuspid stenosis with valvular orifice area of 0.7 cm². It also demonstrated moderate aortic regurgitation. However, there was no evidence of subaortic membrane or LVOT obstruction or aortic coarctation.

Transesophageal echocardiogram confirmed the aortic valve to be tricuspid. There was moderate aortic valve regurgitation and severe aortic valve stenosis. A thin semilunar membrane was noted to be causing obstruction immediately below the aortic valve leaflets. The membrane appeared to be attached to the LVOT side of the non-coronary cusp restricting its opening. The aortic valve area was 0.67 cm² by continuity equation. The transvalvular peak gradient of 116 mmHg and the mean gradient is 62 mmHg was demonstrated. On the short axis view of the aortic valve, the membrane was noted just below the valve and reduced the orifice opening to an area of 1.3 cm² (by planimetry).

Conclusion:
Our case demonstrates a rare case with atypical anatomical site of sub aortic membrane which is attached to the LVOT side of the valve cusps resulting in restricted mobility and severe aortic valve stenosis. Identification
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Conclusion:
Our case demonstrates a rare case with atypical anatomical site of sub aortic membrane which is attached to the LVOT side of the valve cusps resulting in restricted mobility and severe aortic valve stenosis. Identification of a high aortic valve outflow gradient in an otherwise structurally mildly diseased aortic valve should persuade further evaluation.