



Differential Diagnosis of AS

Disease	Notes
Subaortic membrane	Echocardiography is particularly useful to show a discrete, subvalvular ridge in the left ventricular outflow tract. Can mimic a murmur consistent with aortic valvular stenosis. The aortic component of the S2 is typically preserved.
HOCM	Standing and the strain phase of Valsalva increase the intensity of an HOCM murmur by decreasing left ventricular filling resulting in increased LV outflow tract obstruction. Can mimic a murmur consistent with aortic valvular stenosis. Careful physical examination and echocardiography can distinguish valvular AS from hypertrophic cardiomyopathy.
Congenital supra- valvular AS	Major physical findings resemble those of a patient with valvular AS with several exceptions: accentuation of aortic valve closure as a result of elevated aortic pressure proximal to the stenotic area, a sporadic systolic ejection sound, transmission of a thrill and murmur to the jugular notch and carotid arteries. Physical examination frequently reveals a higher systolic pressure in the right arm than in the left that may be due to selective streaming of blood into the innominate artery. Can mimic a murmur consistent with AS. As with a subvalvular membrane, the aortic component of S2 is preserved. Echocardiography can localize the obstruction to the supra- valvular area.
Mitral regurgitation	Typically a holosystolic, soft murmur auscultated at the apex, radiation to the left axilla, medium to high pitch with a blowing quality. Differs from an AS murmur in location, radiation, quality, and duration in systole. However, disorders of the posterior leaflet of the mitral valve may result in a murmur that increases in intensity through the duration of systole, peaks late during systole, and is heard radiating toward the sternal border rather than the apex.
VSD	This may either be congenital or acquired following a myocardial infarction. The VSD murmur can present in a variety of ways and depends upon the size of the defect and the pressure difference between the left and right ventricles. The VSD murmur may be holosystolic or crescendo-decrescendo, and the maximal intensity will depend upon the location of the lesion. Echocardiography and a high index of suspicion are useful in making the diagnosis. Can closely mimic the valvular AS murmur.

AS = aortic stenosis; HOCM = hypertrophic obstructive cardiomyopathy; LV = left ventricle; VSD = ventriculoseptal defect.

Table adapted from Physicians Information and Education Resource (PIER), Aortic Stenosis module.