**Table III. Differential Diagnosis**

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|  | **Differentiating signs/symptoms** | **Differentiating tests** |
| **Mitral regurgitation (MR)** | Distinguishing signs are right ventricular heave, soft S1, split S2, and aloud P2. The classical murmur of MR is pansystolic at the apex, radiating to the axilla. | CXR: pulmonary edema, enlarged left atrium and left ventricle, and mitral valve calcification. ECG: can present with atrial fibrillation. Echocardiography: for MR it is used to assess left ventricular function. |
| **Mitral stenosis** | Distinguishing features are a malar flush, low-volume pulse, a tapping and undisplaced apex beat, and loud S1 with an opening snap. The murmur is a rumbling mid-diastolic one, which can be distinguished from the Austin Flint murmur sometimes heard in severe AR by the absence of the opening snap and loud S1. | CXR: pulmonary edema, enlarged left atrium, and mitral valve calcification.ECG: can present with atrial fibrillation. RVH may also be present.Echocardiography: diagnostic for mitral stenosis. |
| **Aortic stenosis** | Presentation includes dyspnea, dizziness, fainting and congestive cardiac failure. Characteristic signs are a slow rising pulse, heaving but undisplaced apex bear, left ventricular heave, and an ejection systolic murmur that radiates towards the carotids and can have an ejection click. This can be distinguished from the ejection systolic murmur that is sometimes heard with moderate or severe AR by absence of an ejection click and no radiation towards the carotids. | CXR: LVH, calcified aortic valve.ECG: P-mitrale, LVH with strain pattern, left bundle branch block, or complete AV block.Echocardiography: diagnostic for aortic stenosis. |
| **Pulmonary Regurgitation** | Diamond-shaped diastolic murmur best heard in the second and third left intercostal spaces. The murmur increases with inspiration, and P2 is loud in the presence of pulmonary artery hypertension. | CXR: may show dilation of main pulmonary artery with right ventricular dilation. ECG: right ventricular hypertrophy is usually present.Echocardiography: diagnostic for pulmonary regurgitation. |