

Probable Simulation of Isolated Right Ventricular Myocardial Infarction by Anterior Myocardial Infarction

A 38-year-old man with a history of cigarette smoking and hypertension presented to our emergency department with atypical chest pain. He had a history of non-ST-

elevation myocardial infarction 2 weeks earlier, for which he had been admitted to another center and treated medically. Electrocardiography showed an ST elevation in lead V_1 and nonspecific ST-T changes in the other limbs and the left precordial leads (Figure 1). Right precordial electrocardiography showed an ST-segment elevation in leads V_2R to V_6R (Figure 2). Accordingly, he was referred to the catheterization laboratory for primary percutaneous coronary intervention. Selective coronary angiography showed 100% stenosis in the mid-portion of the left anterior descending artery, which was treated via coronary stenting (Video 1). The other coronary arteries had insignificant

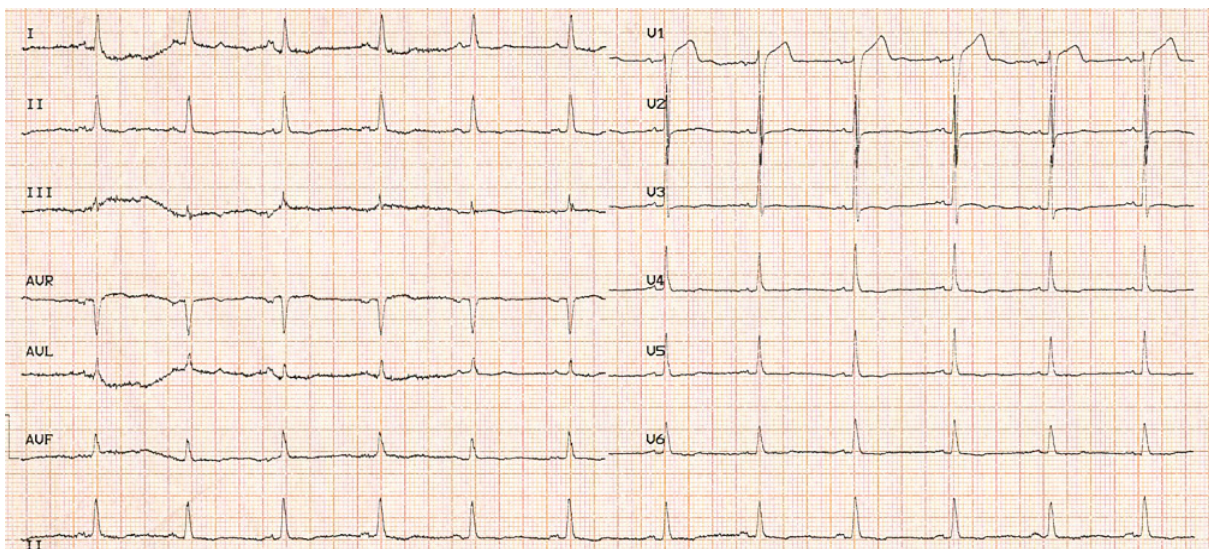


Figure 1. Admission time electrocardiography (limbs and left precordial leads), demonstrating an ST elevation in lead V_1 and nonspecific ST-T changes in the other limbs and the left precordial leads

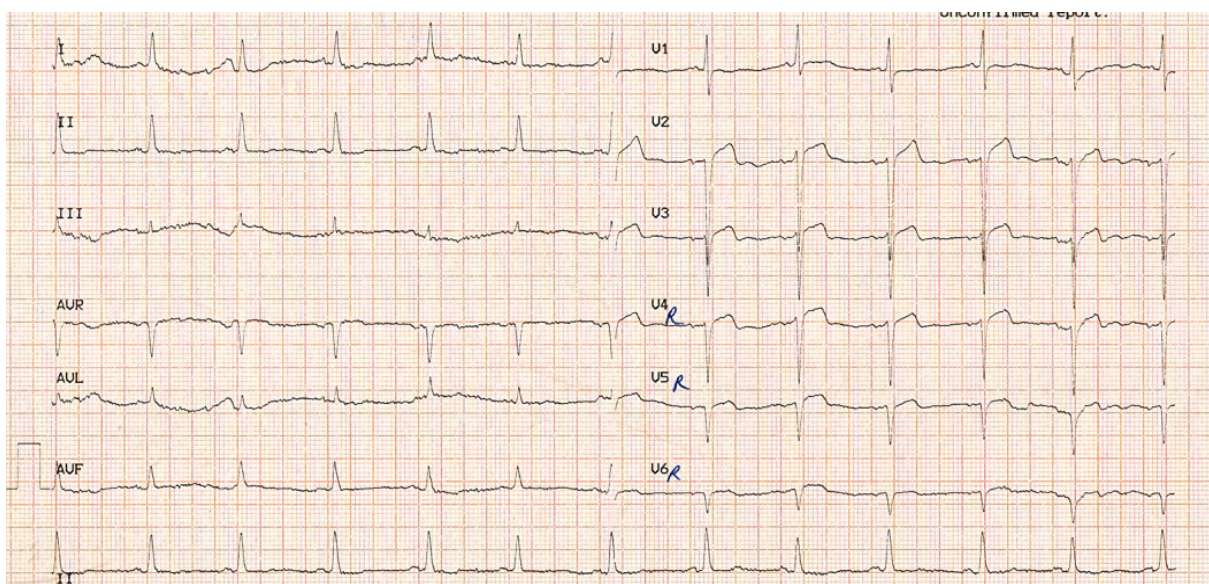


Figure 2. Admission time electrocardiography (limbs and right precordial leads), demonstrating an ST elevation in leads V_2R to V_4R



stenosis. The right ventricular branch was normal (Video 2). Transthoracic echocardiography showed mesocardia (Figure 3 & Video 3) without other congenital defects. The left ventricular ejection fraction was about 45%, alongside hypokinesia in the mid-anteroseptal, mid-inferoseptal, and apicoseptal portions. The right ventricular systolic function was intact. Chest X-ray was in favor of mesocardia (Figure 4). It appeared that the rotation of the base-to-apex axis from left to midline might have resulted in the probable simulation of an isolated right ventricular myocardial infarction by an anterior myocardial infarction. Therefore, an anterior myocardial infarction in the presence of mesocardia should be considered in the differential diagnosis of an isolated right ventricular infarction.

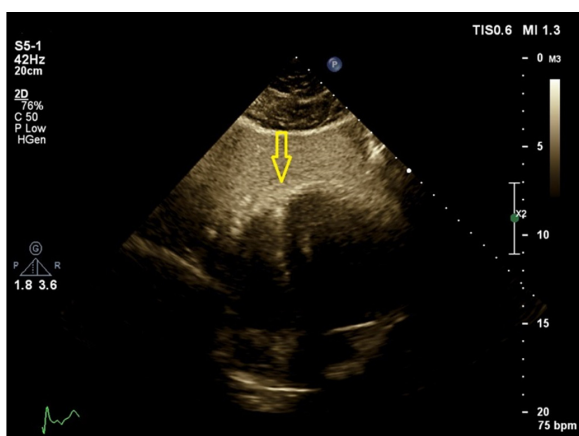


Figure 3. Mesocardia in the subcostal view in transthoracic echocardiography. The arrow shows the cardiac apex, which is in the midline and is suggestive of mesocardia.



Figure 4. Chest X-ray in the posterior-anterior view, showing that the cardiac apex is not on the left or the right

To watch the following videos, please refer to the relevant URLs:

<http://jtch.tums.ac.ir/index.php/jtch/article/view/987/858>

Videos 1. Selective coronary angiography, demonstrating 100% stenosis in the mid-portion of the left anterior descending artery

<http://jtch.tums.ac.ir/index.php/jtch/article/view/987/859>

Video 2. Selective coronary angiography, demonstrating insignificant stenosis in the right coronary artery and normal right ventricular branches

<http://jtch.tums.ac.ir/index.php/jtch/article/view/987/860>

Video 3. Transthoracic echocardiography, showing mesocardia in the subcostal view

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