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Left ventricular noncompaction cardiomyopathy incidentally diagnosed during evaluation for ST-elevation myocardial infarction

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Background: Left ventricular noncompaction cardiomyopathy (LVNC) is a rare congenital cardiomyopathy which usually presents early in life but may also manifest itself later in life. We present the case of an elderly woman with LVNC which was discovered incidentally during evaluation for a ST-elevation myocardial infarction.

Methods and Results: A 67-year-old female smoker without prior cardiac history called emergency medical services due to acute onset dyspnea and left chest pressure without radiation. Electrocardiogram demonstrated two mm of ST-elevation in the anterior precordium. She was given aspirin and sublingual nitroglycerin with resolution of chest discomfort and transported directly to the catheterization lab. On arrival, physical examination demonstrated bilateral rales consistent with pulmonary edema. Coronary angiography revealed right coronary and left anterior descending artery occlusions. As it was difficult to discern which vessel was the culprit lesion, drug-eluting stents were successfully placed in both vessels with restoration of TIMI-3 flow. LV end-diastolic pressure was elevated to 44 mmHg and she was diuresed cautiously overnight with marked symptomatic improvement in her respiratory status. Echocardiogram revealed an ejection fraction of 25% with apical akinesis and global anterior and inferior hypokinesis. Incidentally noted were prominent elongated LV apical trabeculations with visualization of intertrabecular flow on color Doppler, consistent with isolated LVNC. With administration of contrast, an apical filling defect was visualized, confirming the diagnosis of LV apical thrombus. She was commenced on aspirin, clopidogrel, and warfarin and discharged on hospital day seven.

Conclusion: Left ventricular noncompaction cardiomyopathy is a rare genetic cardiomyopathy resulting from an arrest of normal ventricular maturation during embryogenesis. Patients commonly present with heart failure, arrhythmia, and thromboembolism. Echocardiography and magnetic resonance imaging may aide in diagnosis and management involves treatment and prevention of heart failure. Per guidelines, it is reasonable to consider ICD therapy in patients with LVNC in presence of syncope, non-sustained ventricular tachycardia, family history of sudden cardiac arrest, or LV ejection fraction ≤ 35% (class IIb) for prevention of sudden death. In our patient, LVNC was presumed to be present at birth and was discovered rather serendipitously during evaluation for myocardial infarction. She later admitted to mildly worsening dyspnea over the past year which had previously been attributed solely to tobacco use. In hindsight the symptoms may have been the first manifestation of LVNC.

Biography

Christopher D. Janishcompleted his M.D. degree at Mayo Medical School, in Rochester, MN (2011). He is a third year internal medicine resident at Mayo Clinic in Rochester, USA. He is interested in interventional cardiology.

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