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Recurrent strokes and heart failure: Left ventricular non-compaction cardiomyopathy as a unifying diagnosis

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Introduction: Left ventricular non-compaction cardiomyopathy (LVNC) is a relatively rare congenital disease caused by an arrest of normal compaction of the myocardium. This is usually progressive, and if not treated appropriately, can lead to overt heart failure. Other common complications are thrombo embolism, stroke events, atrial fibrillation and ventricular arrhythmias.

Clinical Presentation: We present a case of a 43 year old male with history of non-ischemic cardiomyopathy with a left ventricular ejection fraction (LVEF) of 20%, an implantable cardiac defibrillator, and a history of recurrent superior cerebellar strokes complicated by cerebellar edema requiring craniotomy. The patient also had a history of pulmonary embolism treated with an IVC filter. The patient had no known history of ventricular arrhythmias or atrial fibrillation. The patient's medical regimen included lisinopril, metoprolol, spironolactone and aspirin. The patient presented complaining of chest pain. BNP was elevated and troponins were negative. Chest x-ray revealed bilateral pleural effusions with an enlarged heart. EKG showed an atrial sensed, ventricular paced rhythm. Transthoracic echocardiogram showed a dilated left ventricle with global hypokinesia and severely reduced LVEF <15%, with the left ventricular apex heavily trabeculated, as seen in Figure 1 and 2. The patient was diagnosed with LVNC. The patient was discharged on Coumadin and a guideline based cardiomyopathy medical regimen without further events to date.

Discussion: LVNC should remain high on the differential for patients who have heart failure and recurrent strokes and a characteristic echocardiogram. Prompt diagnosis will render proper treatment and can lessen preventable adverse outcomes. Isolated LVNC is a rare disorder, classified as a primary genetic cardiomyopathy by the American Heart Association. The diagnosis of LVNC is usually established by echocardiography. Findings include prominent myocardial trabeculations and deep intertrabecular recesses communicating with the left ventricular cavity. Embolic complications may be related to development of thrombi in the extensively trabeculated ventricle, depressed systolic function, or the development of atrial fibrillation. Patients at high risk for thromboembolism in the presence of impaired left ventricular function should receive anticoagulation. As this patient already had recurrent strokes with a low LVEF, it was prudent to start anticoagulation and if initiated early on, recurrences of embolic events may have been prevented.

Biography

Toni Anne de Venecia, MD is a 2nd year internal medicine resident in Albert Einstein Medical Center Philadelphia. She graduated Magna Cum Laude from University of Santo Tomas, Philippines for her medical education. She is very interested in clinical research and clinical practice as well. She is interested in getting published and had two publications in American Journal of Medicine recently. She aspires to become a cardiologist someday.

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