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A case of symptomatic coronary artery fistula

Huda Elshershari and Mark A Hubbard
Deaconess Hospital, USA

A 43-year-old female presented to our institution with recurrent episodes of left upper and lower extremity numbness associated with palpitation and shortness of breath. Her vital signs were stable and physical examination was remarkable for a continuous murmur on the upper right side of the sternum. She underwent stroke workup including MRI of the brain, carotid ultrasound and CT angiogram of the head and neck that were normal. Electrocardiography was normal. Transesophageal echocardiogram was performed to evaluate for possible paradoxical embolism which showed enlarged left main coronary artery measuring 2 cm in diameter with turbulence and increased flow velocities. An abnormal large, tortuous vessel was noted at the base of the heart draining into the right atrium with continuous left to right shunt. Coronary computed tomography was performed for further investigation that revealed an extremely large left main coronary artery which arises from the left coronary cusp. A markedly enlarged fistula vessel originating from the left main coronary artery was seen making a tortuous course posterior to the aorta and inferior to the pulmonary artery and feeding into the right atrium. This was consistent with a left main coronary artery to right atrium fistula. Patient underwent cardiac catheterization and fistula was successfully occluded without any complications.

elshershari@hotmail.com

Role of non-invasive imaging in the evaluation and management of cardiomyopathies

Huda Elshershari^{1,2}

¹Deaconess Hospital, USA

²Indiana University, USA

Cardiomyopathies are myocardial disorders that may result in ventricular dysfunction and can progress to heart failure. They are classified into a number of morphological and functional phenotypes that can be caused by genetic and non-genetic mechanisms. Non-invasive imaging plays a major role in the assessment of patients with heart failure and the identification of an underlying cardiomyopathy. Non-invasive imaging modalities can determine whether abnormalities are present in the myocardium, endocardium, or pericardium. Echocardiography is the most common imaging technique used for the initial diagnosis and management of cardiomyopathy; however, other imaging modalities, including cardiac magnetic resonance imaging (CMR), and cardiac computed tomography, may play an important role depending on the underlying etiology of the cardiomyopathy. CMR has emerged as a useful non-invasive imaging tool in the investigation of patients suffering from cardiomyopathy. CMR sequences have high spatial and temporal resolution image acquisition and become a gold standard non-invasive imaging modality for many cardiomyopathies. The acquisition of high-resolution images in any selected plane overcomes the limitations due to patient's body habitus and suboptimal acoustic windows. Furthermore, lack of ionizing radiation is a large advantage for the clinical follow-up of patients. The use of late gadolinium-enhanced sequences has had an important impact on the ability to characterize the myocardium. The pattern of myocardial fibrosis seen on late gadolinium-enhanced images is a major strength of CMR in helping the differential diagnosis of the underlying etiology of a cardiomyopathy. This presentation focuses on the classification of cardiomyopathies and basic CMR sequences used in evaluating different types of cardiomyopathies.

elshershari@hotmail.com