

period. Twenty six patient were male (55.3%) and 21 patients were female (44.6%). Their mean age was 53.57+ 13.38 years. The diagnosis of pulmonary embolism was made by spiral computed tomography. Echocardiographic parameters suggestive of acute pulmonary embolism were dilated right ventricle in 45 patients (95.74%) with a mean RVEDD Of 32.08+ 1.66. D shaped septum in 41 (87.32%). McConnell sign is a distinct echocardiographic finding described in patients with acute PE. There is a distinct regional pattern of right ventricular dysfunction, with akinesia of the mid free wall but normal motion at the apex. Seventeen (36.17%) patients had severe right ventricular dysfunction and 9 (19.1%) patients had moderate right ventricular dysfunction who were classified as massive or submassive pulmonary embolism based on haemodynamic stability. Three mechanisms have been proposed that may explain these findings. First, in acute PE, the tethering of the right ventricular apex to a contracting and often hyperdynamic left ventricle may account for the preserved wall motion at the apex. Second, the right ventricle may be assuming a more spherical shape to equalize regional wall stress when subjected to an abrupt increase in afterload. Third, there may be localized ischemia of the right ventricular free wall as a result of increased wall stress.

Conclusion: Echocardiography is a very useful tool in diagnosing acute pulmonary embolism in centers where there is no CT scan available to confirm the diagnosis, where a rapid presumptive diagnosis is required to justify the use of thrombolytic therapy. Regional wall motion abnormalities sparing the right ventricular apex (McConnell's sign) are particularly suggestive of PE.

Utility of longitudinal strain imaging by speckle tracking in predicting obstructive CAD in patients with no wall motion abnormality in 2D echocardiography

Kiran Gopinath, Sajan Ahamed, A. George Koshy, Sunitha Viswanathan

Department of Cardiology, Government Medical College, Thiruvananthapuram, India

Background: Abnormalities in strain imaging appear before wall motion abnormalities in the ischemic cascade. Strain imaging is yet to find definite practical utility in the routine evaluation of CAD. This study is to define the utility of strain imaging in predicting obstructive CAD in a subset of patients who do not have RWMA in routine 2D echocardiography.

Methods: Prospective study enrolling patients with no RWMA in routine 2D echo being taken up for CAG. Longitudinal strain imaging by speckle tracking using automated functional imaging was done by a single operator, using a VIVID E9 machine, prior to CAG. All angiograms were read by a second operator who was unaware of the strain imaging findings. Obstructive CAD was defined as $\geq 70\%$ luminal diameter narrowing of any epicardial coronary artery and abnormal strain was defined as a value less negative than 20%. Strain values were calculated for each ventricular segment. The sensitivity, specificity, positive and negative predictive values for each artery as well as each coronary segment were obtained.

Results: 129 consecutive patients were enrolled over a 7 month period from Nov 2013 to May 2014. Strain imaging had a high sensitivity- 97% for LAD, 90.69% for RCA, 91.6% for LCX, a high negative predictive value- 81.81% for LAD, 91.3% for RCA, 92.3% for

LCX but a poor specificity- 15.2% for LAD, 13.9% for RCA, 22.8% for LCX and a poor positive predictive value-57.6% for LAD, 34.5% for RCA and 21.3% for LCX territories.

Conclusion: Strain imaging has a high sensitivity and high negative predictive value when compared to CAG (gold standard) in identifying obstructive CAD, thus making this a good test to rule out obstructive CAD in a low risk population. Though, in this study, strain imaging has not been compared to TMT, as these tests represent different physiological states of rest and exertion, strain imaging may be used in patients who cannot undergo TMT. CAG may be avoided in patients with normal strain values.

Effect of balloon mitral valvotomy on left ventricular function in rheumatic mitral stenosis

Pradeep Sreekumar, G. Rajesh, M.N. Krishnan

Government Medical College, Kozhikode, India

Background: Mitral stenosis (MS) is found to produce left ventricular dysfunction in some studies. Even in the presence of preserved global LV function as measured by ejection fraction, there can be impairment in long-axis function as shown by tissue Doppler echocardiography. We sought to study the left ventricular function in patients with rheumatic MS undergoing balloon mitral valvotomy (BMV).

Methods: In this prospective cohort study, we included 43 patients with severe rheumatic mitral stenosis undergoing BMV. They were compared to twenty age-matched healthy controls. The parameters compared were left ventricular (LV) ejection fraction (EF) by modified Simpson's method, mitral annular systolic velocity (MASV), mitral annular plane systolic excursion (MAPSE), mitral annular early diastolic velocity (E'), and myocardial performance index (MPI).

Results: Mitral annular systolic velocity, MAPSE and E' and EF were significantly lower and MPI was higher in mitral stenosis group compared to controls. Impaired longitudinal LV function was present in 77% of study group. Within the study group, atrial fibrillation patients had a higher MPI with other parameters being similar. Mitral annular plane systolic excursion and EF did not show significant change after BMV while MPI, MASV and E' improved significantly. Mitral annular systolic velocity and E' showed improvement immediately after BMV, while MPI decreased only at 3 month follow up.

Conclusions: There was significantly lower mitral annular motion parameters and higher myocardial performance index in patients with rheumatic mitral stenosis. Those with atrial fibrillation had higher MPI compared to those in sinus rhythm, indicating a worse global LV function. Immediately after BMV, there was improvement in LV long axis function with a gradual improvement in global LV function.

Diagnostic performance of echocardiography in cases of hypothyroidism

D.P. Singh, Kundan Sinha, Anand Kumar Srivastava, S.S. Singh

S S Hospital, IMS, Banaras Hindu University, Varanasi, India

Background: The aim of this study was to assess the diagnostic validation of myocardial performance parameter by