

Abstract Submitted
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Intraventricular vorticity favors conservation of kinetic energy along the cardiac cycle: analysis in patients with dilated cardiomyopathy by post-processing color-doppler images¹ MARTA ALHAMA, YOLANDA BENITO, JAVIER BERMEJO, RAQUEL YOTTI, ESTHER PEREZ-DAVID, ALICIA BARRIO, CANDELAS PEREZ DEL VILLAR, ANA GONZALEZ MANSILLA, FRANCISCO FERNANDEZ AVILES, Division of Cardiology, Hospital General Universitario Gregorio Maranon, Madrid, JUAN CARLOS DEL ALAMO, MAE Department, UC San Diego — Background: This study assesses if the left ventricle (LV) filling vortex developed during diastole may be a mechanism that improves systolic efficiency. 19 patients with dilated cardiomyopathy (DCM) and 37 healthy volunteers were studied. Recently, we have developed and validated a method that derives two-dimensional maps of the LV flow from standard color-Doppler sequences. Two-dimensional maps of instantaneous LV flow were obtained, and circulation, energy and position of the main and secondary vortices were calculated along the cardiac cycle. At aortic valve opening (AVO) the vortex circulation is higher in DCM subjects than healthy volunteers. However, the position of the vortex is farthest from LV outflow tract (LVOT), and this results in lower flow velocity in LVOT at AVO. This phenomenon is altered in patients with DCM.

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