

Abstract Submitted
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On the clinical characterization of impulse and suction force contributions by the diastolic left ventricular vortex¹ PABLO MARTINEZ-LEGAZPI, MAE Dept UC San Diego, La Jolla, CA, MARTA ALHAMA, Dept of Internal Medicine, Scripps Green Hospital, La Jolla CA, YOLANDA BENITO, JAVIER BERMEJO, RAQUEL YOTTI, ESTHER PEREZ-DAVID, ALICIA BARRIO, CANDELAS PEREZ-DEL-VILLAR, ANA GONZALEZ-MANSILLA, FRANCISCO FERNANDEZ-AVILES, Dept of Cardiology, Hospital Gregorio Maranon, Madrid, Spain, JUAN C. DEL ALAMO, MAE Dept UC San Diego, La Jolla, CA — One of the fluid-dynamic mechanisms that characterize the diastolic phase of the cardiac cycle is the formation of a left ventricular (LV) vortex ring that has been proposed to improve LV filling. However, direct clinical quantification of the contribution of this vortex to LV filling is elusive. In this clinical study, we considered 20 patients with dilated cardiomyopathy (DCM) and 40 healthy volunteers. We have developed and validated a method that derives two-dimensional maps of the LV flow from standard color-Doppler sequences. This study employs the new imaging modality in combination with a vortex identification method and a panel method in order to isolate and estimate the direct contribution of the LV vortex to fluid impulse and suction force during filling in the healthy and diseased populations.

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