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Assessment of right ventricular mechanics before and after surgical myectomy in patients with hypertrophic obstructive cardiomyopathy, using two-dimension speckle tracking echocardiography**Mohamed Ahmed Ezzat¹, Hala Mahfouz Badran^{1,2}, Ghada Soltan¹ and Magdi H Yacoub^{2,3}**¹Cardiology Department Menoufiya University, Egypt, ²The BAHCM National Program, Egypt, ³Imperial College, London, UK

Methods: 25 HCM patients, 68% males with mean age (34.5±12 years) were examined before and within two months after surgical myectomy using VVI. In addition to conventional echocardiographic parameters, peak systolic strain (ε_{sys}), strain rate (SR) and time to peak ε_{sys} (TTP) of regional RV free wall (RVFW) & septal walls were analyzed in longitudinal (long) directions from apical four chamber view and their (Δ) changes were calculated. Similar parameters were quantified in LV from apical 2&4 CH views. Intra-V-delay was defined as SD of TTP and inter-V dyssynchrony was estimated from TTP difference between the most delayed LV segment & RVFW.

Results: All study patients showed improvement of their functional class from NYHA class III to class I and reduction of LVOT gradient to below 20 mmHg except one patient who had 30 mmHg gradients at rest. There was significant reduction of septal thickness, left atrial diameter & volume, LVOT gradient, LVMI, severity of mitral regurgitation, tricuspid annular velocities (P<.0001), RV diameter (P<.02) and increase in LV internal dimensions (P<.001) post myectomy. However, there was significant reduction of RV and LV systolic mechanics; RV global ε_{sys} % (from -16.1±4.4 to -12.9±2.9, P<.0001) and LV global ε_{sys} %: from -11.6±2.8 to -9.4±2.2%, P<.0001) respectively. The magnitude of reduction of RV strain (Δ RV ε_{sys}%, Δ SR_{sys}) was directly correlated LV maximal wall thickness (r=.46, P<.01) and ΔRV dyssynchrony (TTP-SD), (r=.4, P<.05) and negatively correlated to age (r=-.46, P<.02), pre-op RV SR_{sys} (r=-.52, P<.01) and pre-op LV EF% (r=-.43, P<.03). Meanwhile the reduction in RV diastolic mechanics: Δ RV SR_e & SR_a were directly correlated to PAP and LVOT gradient before surgery (r=.62, P<.002).

Conclusion: Despite improvement of patient functional status and reduction LVOT gradient, RV mechanics shows further deterioration after surgical myectomy. The magnitude of reduction is modestly related to cardiac phenotype and pre-op mechanical function.

Biography

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