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# Non Invasive Imaging

## MITRAL VALVE LEAFLET ABNORMALITIES CORRELATE WITH LEFT VENTRICULAR REMODELLING AND OBSTRUCTION IN HYPERTROPHIC CARDIOMYOPATHY: A QUANTITATIVE 3D TRANSTHORACIC ECHOCARDIOGRAPHIC STUDY

Poster Contributions
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Elongated mitral valve (MV) leaflets were described as a morphological marker of hypertrophic cardiomyopathy (HCM) at magnetic resonance. 3D echocardiography (3DE) may provide better insights on the non-planar MV geometry than linear measures.

**Methods.** In 32 HCM pts and 32 age- and gender-matched controls, 3D LV datasets (38±6vps) containing the MV were acquired by transthoracic approach. 3D MV and LV geometry were quantitated by semiautomatic softwares (TomTec 4D MV assessment 2.1, GE EchoPac BT12).

**Results:** Compared to controls, HCM pts had larger and more spherical MV annulus and increased leaflet tenting (p<0.001). In HCM pts, anterior (ALA) and posterior (PLA) leaflet areas were larger than in controls (ALA 6.9±1.9cm² vs 5.6±1.6cm², p=0.006; PLA=7.3±2.8cm² vs 3.6±1.2cm², p<0.001), and a reversed relative contribution to mitral annular area (MAA) in favor of PLA was identified (PLA/MAA: 61±16% in HCM vs 46±13% in controls, p<0.001). In HCM pts, PLA/MAA ratio correlated with dynamic gradient (r=0.53), LV mass (r=0.43) and LV mass/end-diastolic volume ratio (r=0.70, p4.64 cm² enabled an excellent discrimination of pts from controls (AUC 0.923, with 84% Sv and Sp), better than ALA (AUC 0.680)(Figure).

**Conclusions:** In HCM, a relatively larger contribution of PLA to overall MAA was identified by 3DE. PLA was correlated with LV remodelling and dynamic obstruction. Non-invasive quantification of MV geometry by transthoracic 3DE may have important diagnostic and therapeutic implications.