EVALUATION OF APICAL POUCHES IN HYPERTROPHIC CARDIOMYOPATHY USING CARDIAC MRI

Poster Contributions
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Background: Presence of an apical pouch in patients with hypertrophic cardiomyopathy (HCM) carries increased cardiovascular risk. Apical pouches are often challenging to visualize by echocardiography, and cardiac magnetic resonance imaging (CMR) may be better suited for identifying apical pouches in HCM.

Methods: This was a retrospective review of 45 consecutive HCM patients with an apical pouch identified by CMR at Mayo Clinic from May 2004 to Sept 2011. CMR and echocardiographic images were reviewed to determine pouch size and incremental diagnostic value of CMR.

Results: Mean age was 58 ± 16 years, 62% were male. Comorbidities included hypertension (42%), diabetes (7%), atrial fibrillation (24%) and coronary artery disease (29%). On CMR, the predominant morphological type was apical (87%), followed by sigmoid (9%) and reversed curve (4%). LV ejection fraction was 65 ± 9%. LV end-diastolic and end-systolic volumes were 129 ± 30 ml and 46 ± 18 ml, respectively. Maximum LV thickness was 21 ± 5 mm. Late gadolinium enhancement was present in 80%. Pouches were identified in only 38% of cases on echocardiography. Intravenous contrast (Definity or Optison) was used in 60%. Of the patients receiving contrast, 56% of pouches were not detected. Patients in whom pouches were detected on echocardiography had larger pouch dimensions on CMR (see figure).

Conclusions: While the use of IV contrast aids in the detection of apical pouches using echocardiography, CMR is better suited for the evaluation of apical pouches in HCM.