Diastolic dysfunction in Amyloidosis Cardiomyopathy vs Heart Failure with Preserved Ejection Fraction.

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Background
Amyloidosis Cardiomyopathy (AC) is a rare disease that results from accumulation of inappropriately folded proteins. Heart Failure with preserved ejection fraction (HFpEF) is a syndrome of impaired left ventricular relaxation. Both entities are characterized by abnormalities in diastolic function. Our aim was to identify distinct echocardiographic patterns of diastolic function which could help in the differential diagnosis of these two entities.

Methods
We retrospectively analyzed the echocardiographic patterns of patients with AC and patients with HFpEF. In patients with AC, endomyocardial biopsy was required to confirm the diagnosis. In patients with HFpEF, a cardiac magnetic resonance without infiltrative pattern was required to confirm the diagnosis. Comparisons were performed using Fisher’s exact test and Chi square for categorical variables and Student t-test and Kruskal-Wallis for continuous variables.

Results
Eleven patients with AC and 10 patients with HFpEF were included in the analysis. The mean age was 79 years in the amyloidosis group and 76 years in the HFpEF group. Patients with HFpEF were predominately female (70%) compared to patients with amyloidosis (27%). Both groups had elevated brain natriuretic peptide, and levels were higher in patient with amyloidosis (565 vs 118 pg/ml, p = 0.007)
Patients with AC had higher extent (grade II and III) of diastolic dysfunction -72%, compared to only 27% of patients with HFrEF. Mitral septal annular e’ (a measure of impaired relaxation when is low) was 4.3 cm/s in AC and 7.6 cm/s in HFrEF (p = 0.007). Septal wall thickness was significantly higher in patients with AC compared to patients with HFrEF (18 vs 10 mm, p = 0.01).

**Conclusion**
More severe extent of diastolic dysfunction in patients presenting with heart failure should raise suspicion for amyloidosis cardiomyopathy.