

MRI Evaluation of Diffuse Myocardial Diseases

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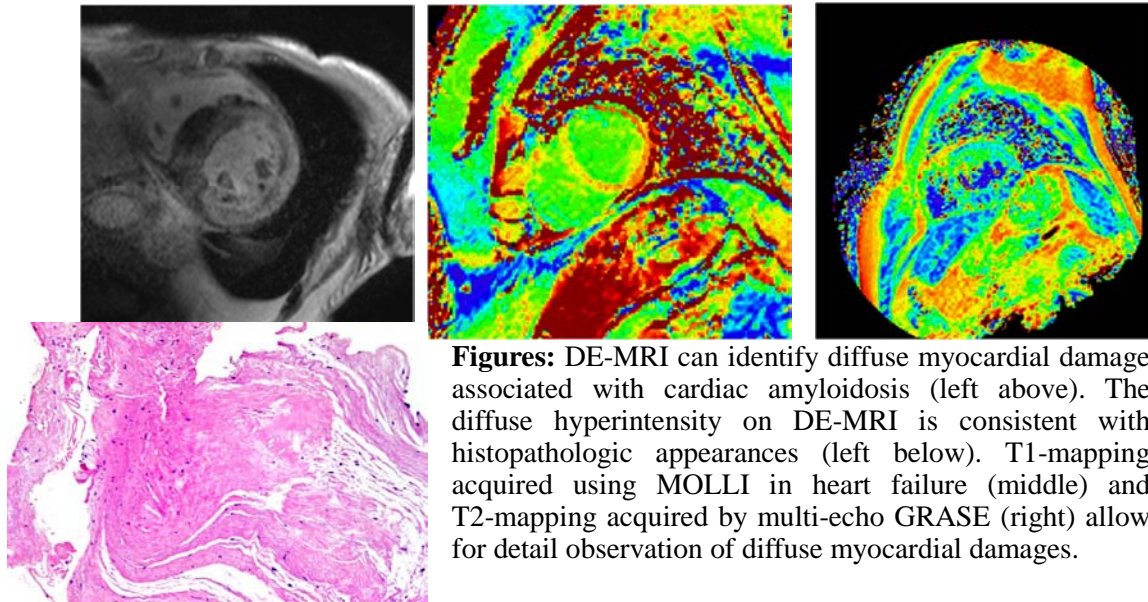
Purpose Delayed-enhancement MRI (DE-MRI) is useful for detection of myocardial scarring, but cannot identify diffuse myocardial diseases because of its binary contrast between normal and scarred myocardium. The purpose of this educational exhibit is to demonstrate MRI techniques that can identify the diffuse myocardial diseases and to exhibit some types of diffuse myocardial diseases by comparing with the pathohistologic findings.

Outline of Content

- 1) Clinical signs and importance of diffuse myocardial diseases
- 2) MRI techniques identifying diffuse myocardial diseases: a) cine SSFP, b) DE-MRI (suboptimal), c) Look-Locker and MOLLI, d) T2-weighted imaging and T2-mapping
- 3) Case presentation with pathohistologic findings
- 4) Summary

Summary

Qualitative and quantitative T1 or T2 assessment of the myocardium using variable MRI techniques can identify diffuse myocardial diseases, which lead to heart failure and deterioration of general status.



Figures: DE-MRI can identify diffuse myocardial damage associated with cardiac amyloidosis (left above). The diffuse hyperintensity on DE-MRI is consistent with histopathologic appearances (left below). T1-mapping acquired using MOLLI in heart failure (middle) and T2-mapping acquired by multi-echo GRASE (right) allow for detail observation of diffuse myocardial damages.