A 55-year-old woman presented with progressive heart failure symptoms and was diagnosed by endomyocardial biopsy with light chain amyloidosis. Magnetic resonance imaging (MRI) at baseline showed slightly increased wall thickness of the right and left ventricles and abnormal nulling of the myocardium with a dark blood pool (Figure A) on postgadolinium images, consistent with amyloidosis. Baseline N-terminal prohormone of brain natriuretic peptide (NT-Pro BNP) level was 1429 pg/mL (normal range 10–168 pg/mL). Three years after autologous peripheral blood stem cell transplant (SCT), she continued to have complete hematologic response and had improvement of the heart failure symptoms. NT-Pro BNP level improved to 277 pg/mL. Repeat MRI showed regression of the mildly increased ventricular wall thickness and normal nulling of the myocardium (Figure B), with faint residual areas of myocardial delayed enhancement.

Extent of cardiac involvement is the major determinant of outcome in light chain amyloidosis. Cardiac MRI with gadolinium administration can be used to detect the presence of amyloid deposition, which is seen as either global transmural or subendocardial delayed enhancement or suboptimal myocardial nulling, as was seen in this case. The improvement in the imaging findings after SCT in this case suggests regression of the amyloid infiltration of the myocardium and correlates with the improvement in the heart failure symptoms and the NT-Pro BNP levels.

Disclosures

None.

References


Figure. A, Baseline midventricular short axis magnetic resonance imaging (MRI) obtained 10 minutes after administration of intravenous gadolinium shows diffusely abnormal nulling of the myocardium with a characteristic dark blood pool, consistent with cardiac amyloidosis. B, Three years after stem cell transplant, postgadolinium midventricular short axis MRI image shows normal nulling of the myocardium with faint patchy areas of residual delayed enhancement. RV indicates right ventricle; LV, left ventricle.
Improvement in Myocardial Delayed Enhancement After Autologous Stem Cell Transplant in a Patient With Light Chain Amyloidosis
Crystal R. Bonnichsen, James F. Glockner and Martha Grogan

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