



MRI of Amyloid Plaque in the Brain

IP Status: Issued US Patent; **Application #:** 11/631,581

In Vivo MRI Imaging of Amyloid Plaque

A magnetic resonance imaging (MRI) method performs in vivo imaging of amyloid plaque in the brain, with or without a contrast agent. The image is reconstructed using data acquired from a very high resolution spin-echo imaging pulse sequence, which achieves contrast using a respiratory gated and cardiac gated spin-echo pulse sequence to reduce motion artifacts at the very high image resolution required to see plaque. A preparatory pulse sequence ensures that longitudinal magnetization remains constant for allacquired views, even if the effective TR changes during the scan due to irregular breathing.

Very High Resolution MRI using Respiratory Gating

The method, which acquires very high resolution in vivo images, uses respiratory gating. Each pulse sequence in the imageacquisition is triggered by a signal from a physiological monitor that detects a specific point in the respiratory cycle. A preparatory pulse sequence precedes each imaging pulse sequence to create uniform view-to-view longitudinal magnetization in the presence of non-uniform view-to-view respiratory trigger times.

BENEFITS AND FEATURES:

- In vivo imaging of amyloid plaque in the brain
- Can be used with or without a contrast agent
- Very high resolution spin-echo imaging pulse sequence acquires data
- Respiratory gated and cardiac gated spin-echo pulse sequences reduce motion artifacts
- Preparatory pulse sequence ensures that longitudinal magnetization remains constant for all acquired views
- Very high resolution

APPLICATIONS:

- Brain MRI
- Alzheimer’s disease

Phase of Development - Imaging; Pilot Scale Demonstration

Technology ID

z04188

Category

Engineering & Physical Sciences/Instrumentation, Sensors & Controls
Engineering & Physical Sciences/MRI & Spectroscopy
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