Abstract:
Coronary magnetic resonance (MR) imaging has dramatically emerged over the last decade. Technical improvements have enabled reliable visualization of the proximal and midportion of the coronary artery tree for exclusion of significant coronary artery disease. However, current technical developments focus also on direct visualization of the diseased coronary vessel wall and imaging of coronary plaque because plaques without stenoses are typically more vulnerable with higher risk of plaque rupture. Plaque rupture with subsequent thrombosis and vessel occlusion is the main cause of myocardial infarction. Very recently, the first success of molecular imaging in the coronary arteries has been demonstrated using a fibrin-specific contrast agent for selective visualization of coronary thrombosis. This demonstrates in general the high potential of molecular MR imaging in the field of coronary artery disease. In this review, we will address recent technical advances in coronary MR imaging, including visualization of the lumen and the vessel wall and molecular imaging of coronary arteriothrombosis. First results of these new approaches will be discussed.