

Characterization of atherosclerosis by modern non-invasive imaging techniques

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Traditionally atherosclerosis has been evaluated by angiography detecting stenosis in the coronary, carotid or leg arteries. However, since the discoveries that it is not the very tight coronary stenosis that in most cases lead to myocardial infarction and the histological findings that the vulnerable plaques leading to infarction are most often characterized by a thin fibrous cap, including inflammatory cells overlying a large lipid core, have posed new demands on imaging of atherosclerosis. Ideally, an imaging technique would be non-invasive and be able to quantify not only the degree of stenosis, but also the size of the plaque together with its contents in terms of lipid material and degree of inflammatory engagement. The lecture will focus on how different imaging modalities, such as ultrasound, magnetic resonance imaging, computer tomography and PET could be used for non-invasive quantification of atherosclerosis.