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Noninvasive diagnosis of vulnerable coronary plaque

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Abstract

Myocardial infarction and sudden cardiac death are frequently the first manifestation of coronary artery disease. For this reason, screening of asymptomatic coronary atherosclerosis has become an attractive field of research in cardiovascular medicine. Necropsy studies have described histopathological changes associated with the development of acute coronary events. In this regard, thin-cap fibroatheroma has been identified as the main vulnerable coronary plaque feature. Hence, many imaging techniques, such as coronary computed tomography, cardiac magnetic resonance or positron emission tomography, have tried to detect noninvasively this histomorphological characteristics with different approaches. In this article, we review the role of these diagnostic tools in the detection of vulnerable coronary plaque with particular interest of their advantages and limitations as well as the clinical implications of the derived findings.

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