MRI in CT in the diagnosis of coronary artery disease indication and application

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CT coronary angiography: luminography and beyond CT coronary angiography: are we there yet? Coronary catheter angiography (CCA) is still considered to be the clinical standard technique for the evaluation of CAD. However, the risk of serious complications associated with CCA is not negligible, and inconvenience for the patient and economic deliberations have strengthened the search for a non-invasive alternative. Currently, CT is the most promising imaging technique for the non-invasive evaluation of the coronary artery tree. Current CT technology combines high spatial and temporal resolution with fast volume coverage, thus enabling imaging of the small and fast-moving coronary arteries within a single breath-hold. A huge number of publications have abounded evaluating the diagnostic performance of CT coronary angiography. With continuous development in CT system generations—starting with four-slice CT until the advent of the most recent 320-slice and second-generation dualsource CT systems—the diagnostic accuracy performs as follows [2]. Patients with significant morphological coronary stenoses are detected with a sensitivity of 95higher. With modern technology, the specificity to detect patients with significant morphological coronary artery stenoses with CT showed steady improvement. In parallel, the number of segments showing a non-diagnostic image quality decreased. Most importantly, the negative predictive value of CT coronary angiography has been reported in

The most important clinical indication for CT coronary angiography is the evaluation of chest pain syndrome in patients with intermediate pre-test probability of CAD and uninterpretable ECG, or the inability of the patient to undergo exercise testing [3]. On the other hand, patients with a high pre-test probability of CAD should not undergo CT coronary angiography. Similarly, in patients with a low pre-test probability, the appropriateness of CT coronary angiography is considered uncertain. In a clinical context, CT should be used as a filter test: When the CT coronary angiography test results are negative, no further invasive work-up is required, and when the results are positive, CCA should subsequently be performed in most cases.

Reference

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