J. H. Gillard

Imaging of carotid artery disease: from luminology to function?

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J. H. Gillard
University Department of Radiology,
Addenbrooke's Hospital,
Hills Road,
Cambridge, CB2 2QQ, UK
E-mail: jhg21@cam.ac.uk
Tel.: +44-1223-336890
Fax: +44-1223-330915

Abstract There have been tremendous advances in our ability to image atheromatous disease, particularly in the carotid artery, which is accessible and large enough to image. The repertoire of methodology available is growing, giving anatomical information on luminal narrowing which is approaching the level at which conventional carotid angiography will become very uncommon as CT and contrast-enhanced MR angiographic techniques become the norm. More exciting is the tentative ability to perform functional plaque imaging addressing enhancement patterns and macrophage activity using MR or

positron-emission tomography techniques. These techniques, once rigorously evaluated, may, in addition to complex mathematical modelling of plaque, eventually allow us to assess true plaque risk. Time will best judge whether we will be able to move from the use of simple luminology to assessment of plaque function.

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