Looking Beyond the Lumen Does Make All the Difference

To the Editor:

We read with interest the article by Takaya et al.1 and the accompanying editorial, further supporting the hypothesis that intraplaque hemorrhage (IPH) occupies a central role in the progression of atheroma and is commonly associated with symptom generation. A means by which IPH can be readily identified, noninvasively, will obviously provide a means by which the risk of future cerebral thromboembolic events can be further stratified. Willinek2 highlighted a number of drawbacks in the multisequence technique presented by Takaya that will result in delays to its implementation in the clinical field. These included long acquisition times, small volumes of coverage and variable image quality. Other MRI techniques that address many of these problems have, however, been developed which Takaya unfortunately omitted to reference. In 2003 we reported a 3-dimensional technique that allows imaging of both carotid systems from the aortic arch to the circle of Willis.3 This requires a single acquisition which is rapid (4 to 5 minutes), and the technique is robust and simple to interpret. We currently add this technique to all patients being investigated for carotid disease (Figure), thus not only providing information regarding stenosis (Figure, c) and end organ damage (Figure, a and b) but also important characteristic of the vessel wall disease itself (ie, the presence or absence of IPH; Figure, d and e). Although outcome studies using this latter technique are underway and the results are now awaited, the results from the study by Takaya suggests that a simple, clinically applicable technique capable of detecting IPH will be an extremely useful tool to help further stratify future stroke risk.

Alan R. Moody, FRCR, FRCP
Richard Bitar, MD, MSc
General Leung, MSc
Robert Maggisano, MD, FRCP
Sunnybrook Health Sciences Centre
University of Toronto
Toronto, ON, Canada


Images of a 68-year-old man who presented acutely with left-arm weakness undergoing investigation for carotid artery disease. a, Diffusion-weighted image demonstrates acute cerebral ischemia in the right motor area. b, FLAIR image confirms the right hemispheric ischemic change. c, Contrast-enhanced MRA of the carotid vessels only demonstrates minor narrowing within the proximal right internal carotid artery. d, Magnetic-resonance direct thrombus–imaging reveals high signal intensity indicative of intraplaque hemorrhage within the proximal right internal carotid artery wall. e, Axial reconstruction of the 3-dimensional data shows extensive intraplaque hemorrhage but also maintenance of the vessel lumen.