Carotid Stenosis: Looking Beyond the Lumen With Ultrasound

To the Editor:

We read with great interest the article by Wasserman et al.1 It represents an excellent review on the importance of carotid wall–imaging in decision-making in contemporary vascular neurology. The authors are to be congratulated for the excellent presentation of their case and for their keen comments. Unfortunately, MRI of carotid atheromata has a number of important limitations, as stated by the authors, and it seems little probable to be integrated in everyday practice in the near future. Moreover, its cost is high and although it can be used to follow-up selected cases, it is impractical for screening and following-up large populations.

The authors state that: (1) coronary atheromata are considered to have thin caps when these measure <65 μm, (2) an equivalent measurement for the fibrous cap of carotid atheromata has not been reported; and presume that it could possibly be <200 μm given the relative size differences between the 2 vessels. This estimation is probably not correct. We have recently described an ultrasound method of measurement of the fibrous cap of stenosing (>70%) carotid plaques.2 The axial resolution of the ultrasound probe that we used was 300 μm, which is sufficiently lower than the resolution of the currently available coils for carotid MRI. We have demonstrated that carotid plaques with mean fibrous cap thickness <650 μm have a high possibility of being symptomatic. The equivalent value for the minimum cap thickness was <460 μm, but its discriminatory accuracy was much lower because the measured values were quite close to the axial resolution of the ultrasound system. Despite the limitations of our method, we have demonstrated that fibrous cap measurement of carotid plaques using ultrasound is feasible. Our results suggest that for carotid plaques, a cap should be considered thin at values much “thicker” than the 200 μm presumed by Wasserman et al. In everyday practice MRI and ultrasound are complementary, and clinical decisions are commonly taken after “looking into the lumen” by using both methods. We hope that in the near future the same principle will apply when “looking beyond the lumen” as well.

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