Response to Letter by Bendok et al

Response:

We would like to thank Dr Bendok and his colleagues for their response to our study on the yield of follow-up of small unruptured aneurysms with CT/MR angiography.1 We agree with the authors that long-term radiological follow-up of unruptured aneurysms is essential to further elucidate the mechanism of growth of intracranial aneurysms. In a mathematical model we recently found that the growth of intracranial aneurysms is probably not constant and time-dependent but rather an irregular and discontinuous process with periods with and without growth (H. Koffijberg et al; unpublished data, 2006). It is important to verify this finding in long-term follow-up studies of intracranial aneurysms because it has consequences for the usefulness of radiological follow-up of unruptured aneurysms and for the evaluation of the cost-effectiveness of aneurysm screening programs.

The annual growth rate of 3.2% that we found in our study is indeed rather high. However, it is important to keep in mind that our study included only patients with a history of subarachnoid hemorrhage (SAH) or a positive family history of SAH. These patients have a relatively high risk of SAH compared with the general population. The results of our study cannot, therefore, be extrapolated to all small aneurysms that are detected incidentally.

In our study we found that short-term radiological follow-up of unruptured aneurysms is not helpful because it does not eliminate the risk of rupture. Whether long-term follow-up is beneficial for patients remains to be investigated. Dr Bendok et al suggest yearly imaging of patients with unruptured aneurysms over the long-term. From a research perspective long-term screening at a yearly interval can be advocated. From a patient perspective such frequent follow-up is less preferable because screening has also negative effects. We recently found that in relatives with familial SAH, screening had considerable impact on psychosocial well-being and mood.2 Another drawback of frequent screening is the radiation associated with screening with CT. Patients with clipped aneurysms have to be followed by CT angiography because clips cause large artifacts on MR. Yearly follow-up with CT may, therefore, be harmful because of radiation effects. We encourage prospective registries of patients with unruptured and untreated aneurysms that are followed over time. However, in our opinion the pros, cons and frequency of such follow-up should be carefully weighed and discussed with each individual patients before it is performed.

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