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Reply:

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Reply:

We thank Chandra et al for their contribution in detailing the angiographic findings of extracranial internal carotid stenosis associated with cortical subarachnoid hemorrhage (cSAH). Our postulated mechanism of rupture of fragile dilated collateral pial vessels is supported by their findings of severe extracranial internal carotid artery stenosis, angiographic visualization of dilated pial anastomoses, the borderline topography of cSAH (in the same area as the dilated pial anastomoses), and the absence of other potential causes.

Autoregulatory vasodilation is a compensatory mechanism for decreases in cerebral perfusion pressure in patients with unilateral chronic steno-occlusive disease. It would be interesting to have, in this setting, a functional examination for evaluation of cerebral vascular reserve. Different techniques exist (eg, positron-emission tomography, single-photon emission CT, and, more widely available, CT perfusion with acetazolamide challenge).^{1,2} We suppose that fragile dilated collaterals would be associated with a depletion of the cerebral vascular reserve, with very limited reactivity after acetazolamide challenge compared with the contralateral side.

In our clinical routine, we prefer performing a brain CT angiography for patients with cSAH, and if negative, it is completed with

cervical contrast-enhanced MR imaging or CT angiography to evaluate the presence of this rare association of a cSAH and an extracranial carotid artery stenosis. Angiography should remain reserved for selected cases only.

References

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2. Chen A, Shyr MH, Chen TY, et al. **Dynamic CT perfusion imaging with acetazolamide challenge for evaluation of patients with unilateral cerebrovascular steno-occlusive disease.** *AJNR Am J Neuroradiol* 2006;27:1876–81

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