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## Regarding "Differences in Hemodynamics and Rupture Rate of Aneurysms at the Bifurcation of the Basilar and Internal Carotid Arteries"

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## Regarding “Differences in Hemodynamics and Rupture Rate of Aneurysms at the Bifurcation of the Basilar and Internal Carotid Arteries”

With great interest and appreciation, we have read the article by Doddasomayajula et al<sup>1</sup> entitled “Differences in Hemodynamics and Rupture Rate of Aneurysms at the Bifurcation of the Basilar and Internal Carotid Arteries.” They analyzed the differences in hemodynamics at the bifurcation of the basilar and internal carotid arteries to explain why posterior circulation aneurysms have a higher rupture risk than those in the anterior circulation, and they found that higher-flow conditions in basilar tip aneurysms could explain their high rupture risk compared with internal carotid bifurcation aneurysms.

In their article, the typical inlet flow boundary conditions were used for all models. However, the inlet flow boundary conditions of the basilar artery (the posterior circulation) and internal carotid artery (the anterior circulation) could be an obvious difference for the diameter and flow of the inlet artery. Such settings with the same inlet flow boundary conditions of the basilar and internal carotid arteries may disrupt the hemodynamic results markedly in this study, and the conclusions might involve significant bias without considering this factor. To avoid such biases, mirror aneurysms may be an ideal within-patient disease model to provide an internal control for the analysis of possible factors linked to aneurysm rupture.<sup>2,3</sup> Moreover, patient-specific

inflow boundary conditions may avoid biases in the calculation of hemodynamics when using the computational fluid dynamics techniques.<sup>4</sup>

The authors should be commended for their meticulous in-study design using state-of-the-art methodology. We look forward to future research and discussion.

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