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### Reply:

S. Bonasia and T. Robert

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## REPLY:

We were pleased to read the letter written by our colleagues from Wuhan about our recent article, “Angiographic Analysis of Natural Anastomoses between the Posterior and Anterior Cerebral Arteries in Moyamoya Disease and Syndrome.”<sup>1</sup> Their comments focused mainly on 2 issues analyzed in our article: on the one hand, the importance of the posterior circulation in the development of collateral circles that allow compensation of the anterior hypoperfused regions; on the other hand, the hemodynamic complexity of the cerebral circulation in patients with Moyamoya disease. The studies conducted by our 2 groups analyzed the compensatory, collateral circles present in Moyamoya disease from 2 different points of view: In our study, we focused on an angiographic description of the posterior cerebral artery–anterior cerebral artery (PCA-ACA) collaterals. The Wuhan group instead correlated some particular types of collaterals to the post–superficial temporal artery (STA)-MCA bypass hypoperfusion syndrome. The conclusions we both came to, even if from different points of view, are the same: In patients with more advanced stages of the disease, the contribution of PCA-ACA anastomoses becomes more and more consistent, though the posterior circulation is less affected by the disease. Although the posterior circle makes an important contribution in the reperfusion of ischemic areas, to have a more global picture, we must also consider the other collateral circles described by Baltasvias et al,<sup>2,3</sup> in 2014 and 2015, the superficial meningeal systems (pio-pial and duro-pial connections) and the deep parenchymal systems (subependymal or periventricular and thalamic connections).

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Considering the lack of a detailed description of the collateral circles in Moyamoya disease in the literature, the intention of our group is to analyze in the future, after the analyses performed for collaterals between the ophthalmic artery and anterior cerebral artery, the contribution of the other systems to reperfusion. Since this pathology is very rare and often occurs in young patients and with emergency presentation, the possibility to analyze the different collaterals involved into the reperfusion through selective microcatheterization is limited.

## REFERENCES

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 **S. Bonasia**

Department of Neurosurgery  
Neurocenter of Southern Switzerland  
Regional Hospital of Lugano  
Lugano, Switzerland

 **T. Robert**

Department of Neurosurgery  
Neurocenter of Southern Switzerland  
Regional Hospital of Lugano  
University of the Southern Switzerland  
Lugano, Switzerland