Cerebrovascular Reserve Testing – A case with adequate reserve

NOVA™

Case No. 017

Physician's concerns?

An active, 55 year old man presents with a left internal carotid artery occlusion and re-curring symptoms. He has been referred by his primary care physician.

How did NOVA help?

Quantitative flow measurements pre and post diamox are used to evaluate cere-brovascular reserve and rule out cere-bral ischemia as the origin of symptoms.

Patient History

- 55 year old right handed man
- Left internal carotid artery occlusion, likely dissecting in origin
- Initial presentation 13 months ago when he had an episode of left facial hypersensitivity, headaches and droopy eyelid; all consistent with Horner's syndrome.
- Past medical history relevant for hypertension and hyperlipidemia
- Family history of coronary artery disease (father died at 49)
- High level of cognitive function; employed as an engineer
- Residual Horner's syndrome. Currently, he is not symptomatic for TIA or stroke

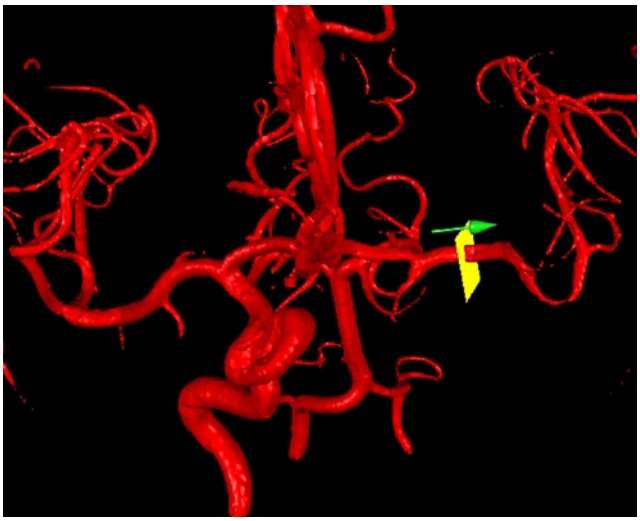

Figure 1: NOVA 3D with slice plane on left middle cerebral artery

NOVA Report

• Flow measurements in the major cerebral vessels were taken at baseline and following administration of the vasodilator, diamox.

• Blood flow increased in response to diamox in all measured vessels.

• The flows in the L and R MCAs increased by 36% and 52% respectively, demonstrating good cerebrovascular reserve. (Figure 2)

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NOVA Diamox Map

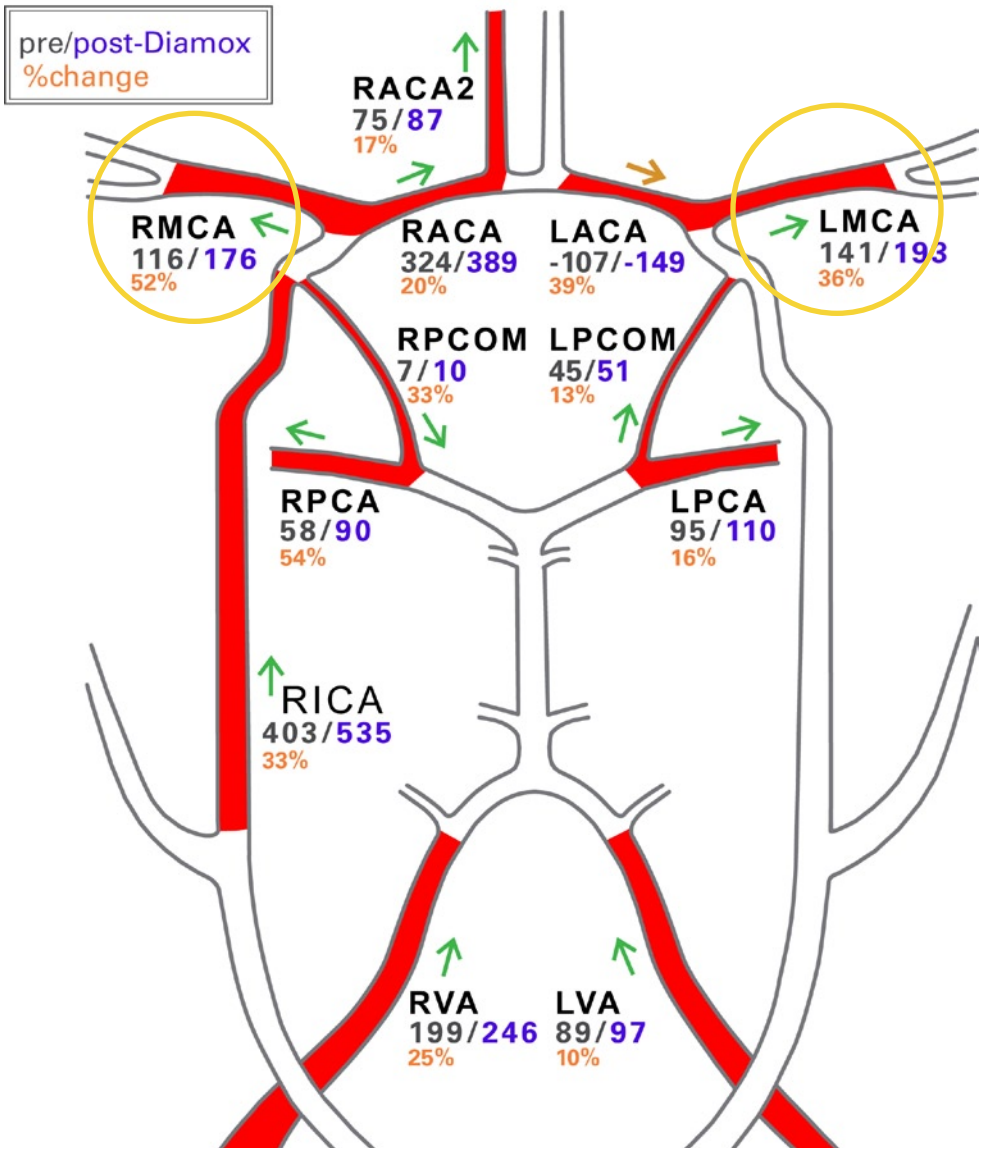

Figure 2: NOVA Vessel Map

Conclusions

- NOVA qMRA quantifies the collateral flow supply
- In response to a diamox challenge, the patient demonstrates good cerebrovascular reserve
- Patient is adequately compensated and does not need flow augmentation