Transient monocular vision loss

NOVA™

Case No. 010

Q&A

Q: How did quantitative vessel flow measurements contribute to the diagnosis and subsequent treatment plan?

A: NOVA demonstrated good collateral compensation with preservation of flow in the LMCA, despite the LICA occlusion. Considering good compensation/reserve, no revascularization procedure was advised.

Q: Could this assessment have been made with other technologies?

A: Other technologies - functional MRI and MR perfusion - tend to be qualitative and provide no insight on the direction of flow or where collateral is coming from.

Patient History

- 46 year-old Indian woman with amaurosis fugax on the left.
- dyslipidemia, diabetes mellitus, and family history of stroke and coronary artery disease.

Diagnostic Workup

MRI/MRA	Vascular Reserve Testing	nova
left internal carotid artery occlusion & right internal carotid artery stenosis	fMRI & MR Perfusion showed good vascular reserve in left hemisphere	No detectable flow in LICA. LMCA flow preserved and compensated via ACOM & PCOM collateral flow

NOVA Report

There is no detectable flow in the LICA. However, the LMCA has normal flow and receives collateral from a retrograde LA1 and the LPCOM. All other measured flows are normal.

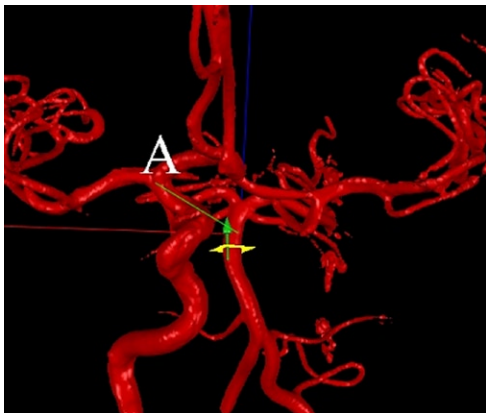

Fig. 1 NOVA 3D surface rendering showing slice plane through the basilar artery

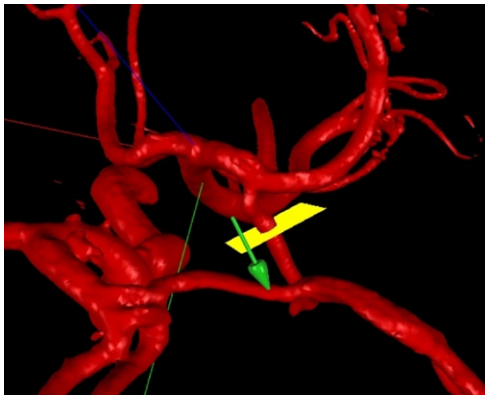

Fig. 2 NOVA 3D showing slice plane through the left posterior communicating artery

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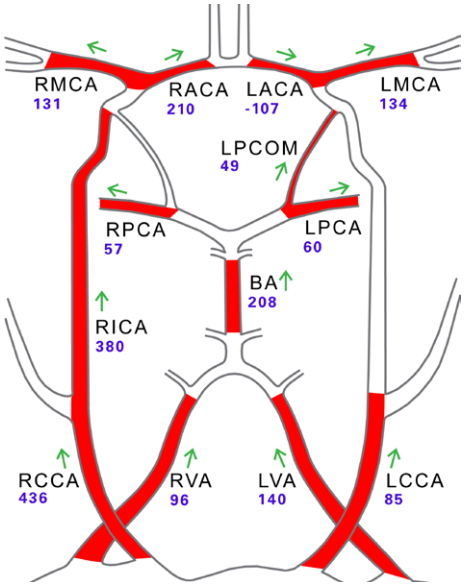
NOVA baseline table

vessel	flow mL/min (%TCF)	range* mL/min
Total Cranial Flow (TCF)	757	770-1460
LVA	140 (18%)	80-170
RICA	380 (50%)	180-310
LCCA	85 (11%)	300-550
RCCA	436 (58%)	310-570
RVA	96 (13%)	80-170
BA	208 (27%)	160-260
LMCA	134 (18%)	110-210
RMCA	131 (17%)	100-200
LACA	-107 (14%)	60-170
RACA	210 (28%)	60-160
LPCA	60 (8%)	50-100
RPCA	57 (8%)	50-100
LPCOM	49 (6%)	-

NOVA vessel map



Conclusion

NOVA and vascular reserve testing both showed good collateral compensation. Based upon this, she is being treated medically with an antiplatelet agent, Atorvastatin, Glyburide and has not had any recurrent ischemic symptoms in > 18 months.

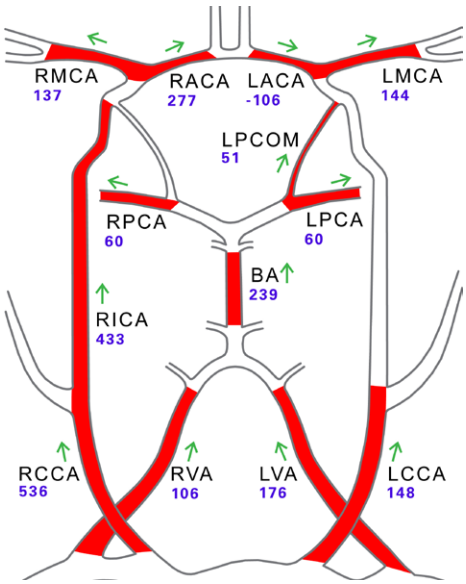
Follow up NOVA study 6 months later

Compared to the previous study, the flows are similar

NOVA baseline table

vessel	flow mL/min (%TCF)	range* mL/min
Total Cranial Flow (TCF)	966	770-1460
LCCA	148 (15%)	300-550
RCCA	536 (55%)	310-570
LVA	176 (18%)	80-170
RVA	106 (11%)	90-170
RICA	433 (45%)	180-310
BA	239 (25%)	160-260
LMCA	144 (15%)	110-210
RMCA	137 (14%)	100-200
LACA	-106 (11%)	60-170
RACA	277 (29%)	60-160
LPCA	60 (6%)	50-100
RPCA	60 (6%)	50-100
LPCOM	51 (5%)	-

NOVA vessel map



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