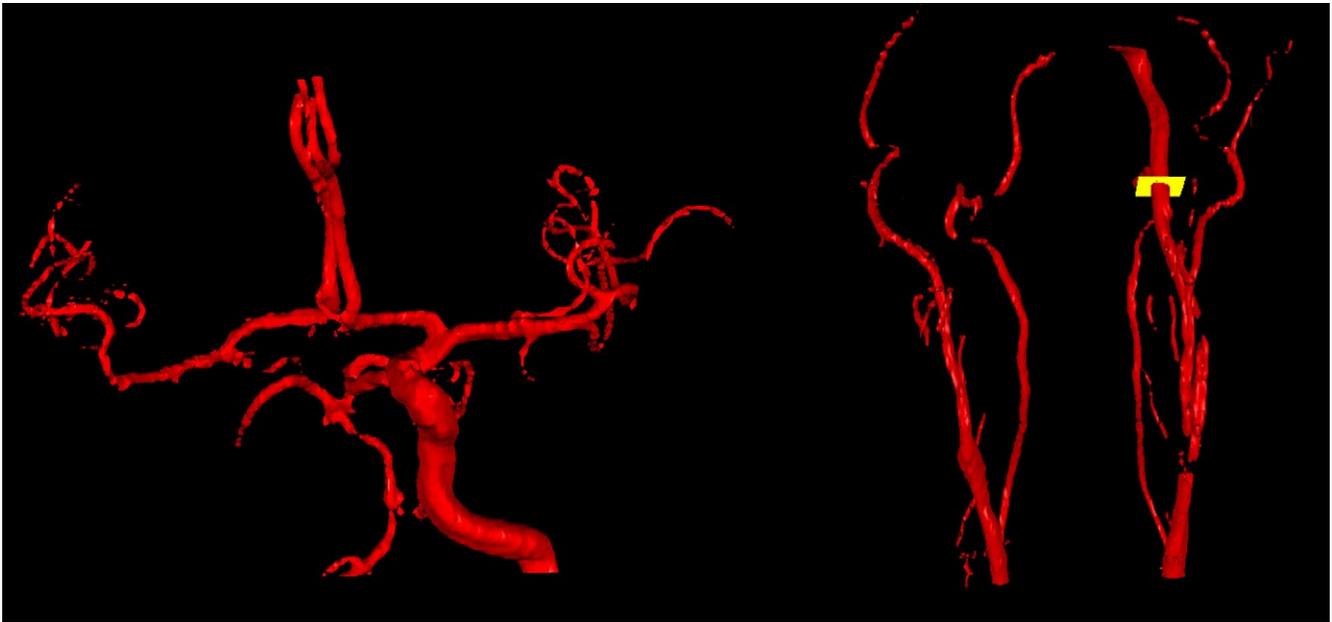


Symptomatic Vertebrobasilar Disease

NOVA™

Case No. 002



NOVA 3D surface rendering

“We have utilized NOVA as a tool to risk-stratify patients with symptomatic vertebrobasilar disease (VBD). Base on our patient’s distal flow status, we recommend medical therapy alone or intervention (surgical or endovascular therapy) coupled with medical therapy. This flow based management strategy has allowed us to defer surgery for patients with normal distal flow, whose symptoms can be attributed to embolic phenomena or small vessel disease and who are unlikely to benefit from revascularization.”¹

¹ Reference: Amin-Hanjani, S., Du X., Zhao M., Walsh K., Malisch, T., and Charbel FT. “Use of Quantitative Magnetic Resonance Angiography to Stratify Stroke Risk in Symptomatic Vertebrobasilar Disease,” Stroke 2005;36:1140-1145

Symptomatic Vertebrobasilar Disease

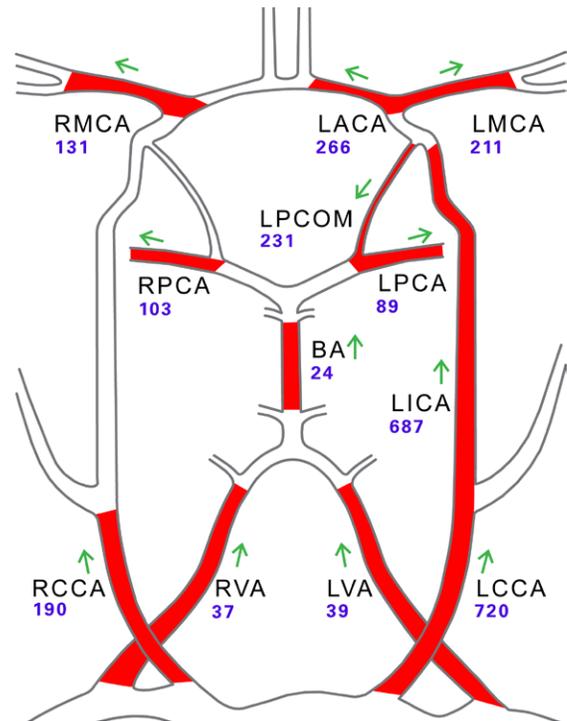
Case No. 002

Patient History

- ❖ 56 year old male
- ❖ VBI, symptoms resolved
- ❖ The angiogram shows long segmen BA stenosis & RICA occlusion

NOVA Study

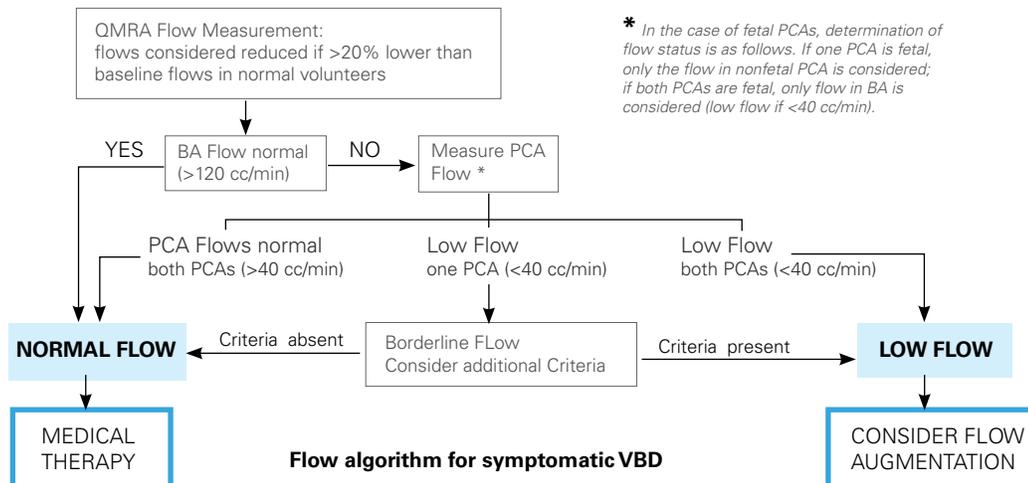
- ❖ The NOVA Vessel Map (at right) shows volumetric flow rates in cc/min and direction of flow in the Circle of Willis. Flow in the left PCOM is anterior to posterior at a rate of 231 cc/min, thereby maintaining flow in both PCAs within the normal range, despite the basilar stenosis. There is collateral flow through the anterior communicating artery supplying the right MCA territory. Supra-normal flow rates in the LCCA and LICA reflect the compensatory response to RICA occlusion.



flow rate in ml/min, green arrows indicate direction of flow

Patient Management

- ❖ The patient was managed according to the flow based algorithm shown below that evaluates the flow in the distal vertebrobasilar tree. According to the algorithm, the distal flow status was designated as normal (low flow in the basilar artery and normal flow in both posterior cerebral arteries) and the patient was recommended for medical therapy with anti-coagulant and anti-platelet agents.



Conclusion

- ❖ NOVA documented both the presence and quantity of collateral flow. Surgical intervention was felt not to be necessary and the patient has been managed on medical therapy alone with no recurrence of symptoms. Non-invasive follow up with NOVA is repeated every 6 months.

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