

# Basilar Artery Stent - Threading the Needle in a Complex Case

## PHYSICIAN'S CONCERNS?

- Recurrence of symptoms
- Intracranial bleed
- Patient lacks posterior communicating arteries

## HOW DID NOVA HELP?

NOVA assists in the management of this very complex case while allowing the most margin of safety possible.

## History

A 77-year-old right-handed man experienced symptoms of vertigo following a long international flight. He was found to have a greater than 90% basilar artery stenosis and subsequently underwent balloon angioplasty and stenting of his basilar artery.

After the angioplasty, the patient exhibited remarkable improvement in his overall stamina according to his wife. This period of enhanced well-being lasted for a few weeks, but then he started experiencing symptoms of low-grade fever and he was evaluated for an intercurrent diagnosis of a pericardial effusion for which he was placed on steroids together with a course of antibiotics. No clear diagnosis of infection was made. Ultimately, he was found to have restenosis of his basilar artery and was re-treated with a balloon angioplasty. The stenosis improved but not fully.

Clinically, the patient improved somewhat after retreatment, although shortly after the periprocedural period, he seemed to have experienced an occipital embolic infarct for which his Plavix dose was increased. He was also noted to have some memory difficulty.

His primary physician's concern was heightened about the chance of his stenosis recurring and he was referred for consideration of a bypass to the posterior circulation.

## Referral Consult

- Neurological exam unremarkable
- At his initial referral visit, a baseline flow study with NOVA is established with quantitative values that can be tracked over time.
- Flows in the basilar artery and in his posterior cerebral arteries bilaterally are normal

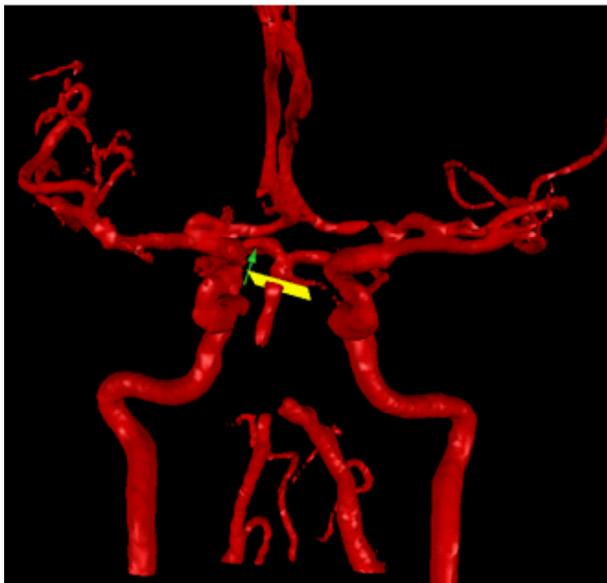
## Recommended Management Strategy

- Maximal medical management as utilized in the SAMMPRIS trial
- Maintain a very close follow up on the status of his basilar stenosis

## Precipitating Event

One year after the repeat angioplasty, the patient was found to have a subdural hematoma while undergoing a non-invasive follow up with NOVA. The bleed was silent and had not been suspected.

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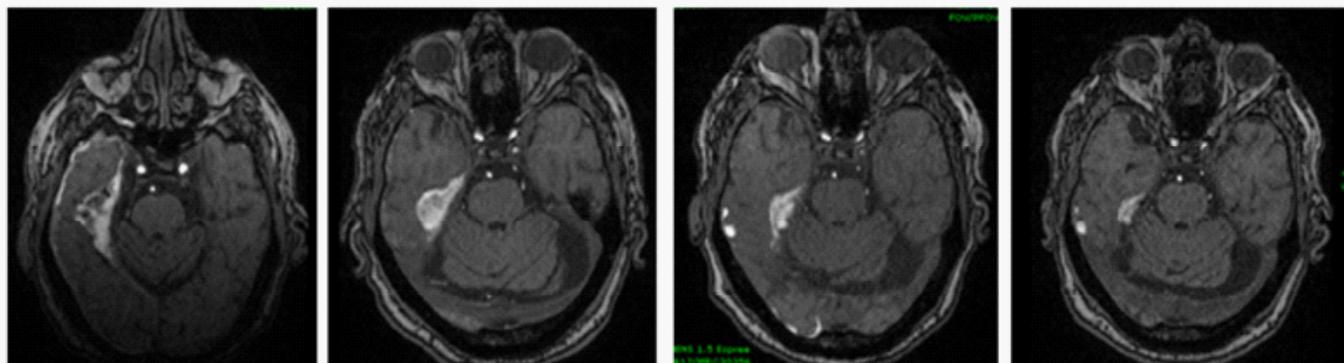
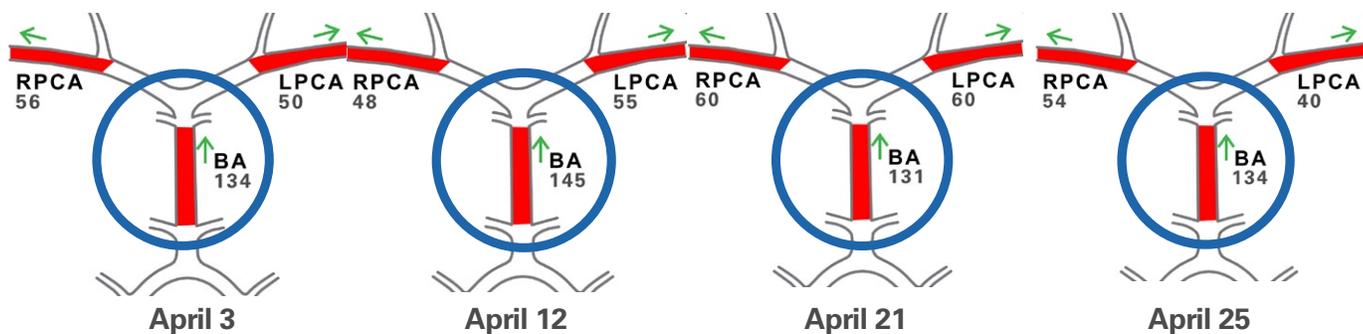
**Fig. 1 NOVA 3D** The yellow plane indicates the point of basilar artery flow measurement. The signal void in the basilar artery is due to the metallic artifact from the stent.

Now his physicians had to balance the management of the hematoma with the absolute necessity to preserve flow in the basilar artery. As the patient lacks posterior communicators, should the basilar occlude, the outcome would surely be catastrophic.

The antiplatelets were stopped and the patient was followed with NOVA at weekly intervals. NOVA allowed close monitoring of the patient, without the necessity for multiple angiograms or simply waiting without a means of knowing the flow status of the basilar artery.

Two weeks after the initial hematoma was diagnosed, the patient experienced a TIA and his antiplatelets were resumed. Throughout this period, his posterior circulation flows, and in particular the basilar artery flow remained stable, while the size of the hematoma was reduced.

**Fig. 2** Weekly NOVA studies permit close monitoring of BA stent patency and the progress of the subdural hematoma during the period when the patient is taken off antiplatelet and anticoagulant therapy. Basilar artery flow remained stable during this period.



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Case No. 22

## Conclusions

NOVA helped guide decision making during a critical phase of the patient's care which required balancing of multiple clinical imperatives.

The recommended course of treatment is to maintain aggressive medical management and continue close follow up of his basilar artery flow. The patient will be monitored non-invasively for restenosis with NOVA every 6 months while he remains stable or more frequently if symptoms recur.

*"This is a great example of how we are able to thread the needle in managing this extremely complex case while giving ourselves the most margin of safety possible. "*

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