

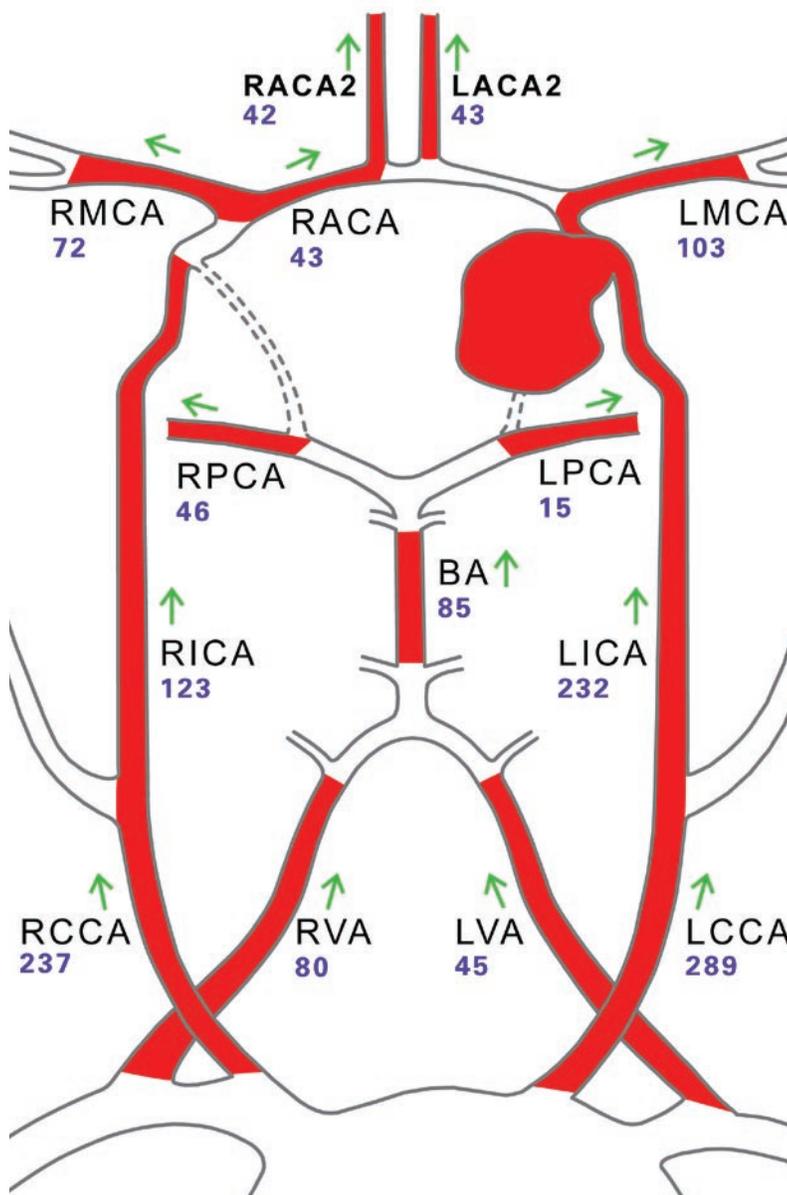
Post operative Stroke – Embolic or Hemodynamic?

WHAT ARE HER PHYSICIAN'S CONCERNS?

- Elderly patient
- Risk of post operative bleeding

HOW DID NOVA HELP?

- NOVA ruled out a hemodynamic cause for the patient's symptoms and supported decision to administer heparin to treat embolic stroke

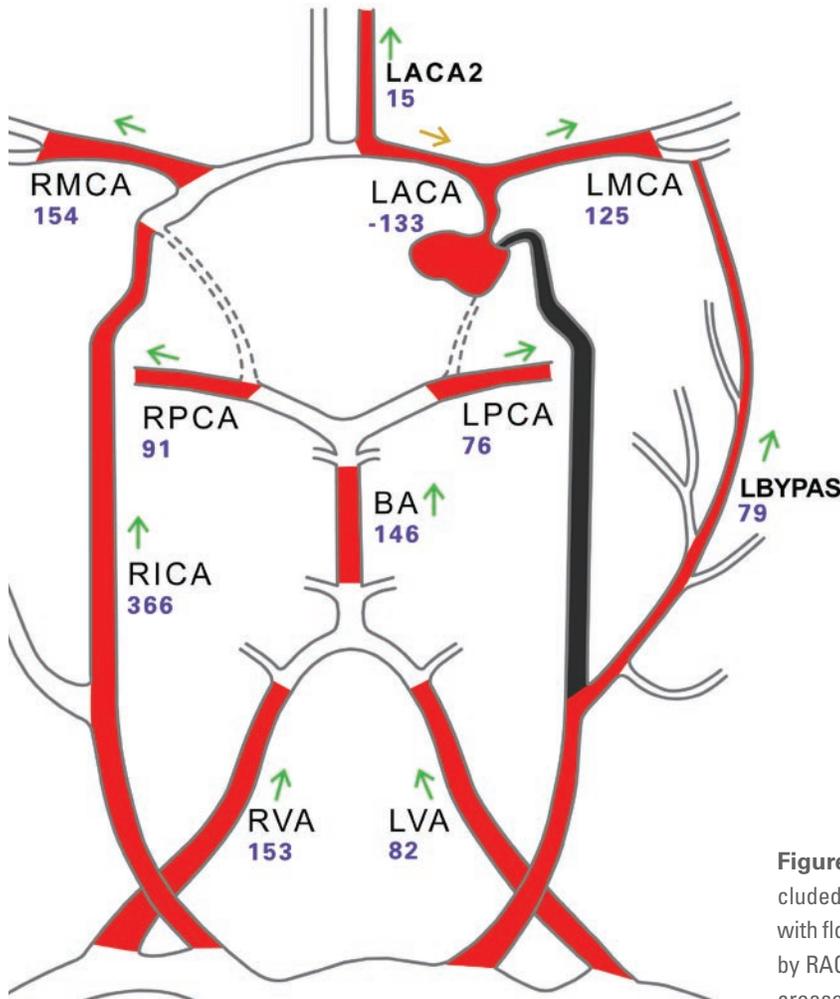


Patient History

- ❖ 79 year old woman with increasing blindness coincident with a large left internal carotid artery aneurysm
- ❖ Status post left STA – MCA bypass and permanent internal carotid occlusion
- ❖ Post op day 1 she develops receptive aphasia suggesting a stroke in the left middle cerebral artery territory. Is the cause embolic or hemodynamic?

Figure 1: Pre op NOVA Vessel Map.
LICA aneurysm
Treatment strategy: permanent carotid occlusion and STA-MCA bypass for flow replacement.

Post operative Stroke – Embolic or Hemodynamic?



Summary

Identifying the origin of her symptoms will determine choice of treatment. If the stroke is embolic, she will receive heparin; if the stroke is hemodynamic, the bypass may not have been sufficient to replace left ICA flow.

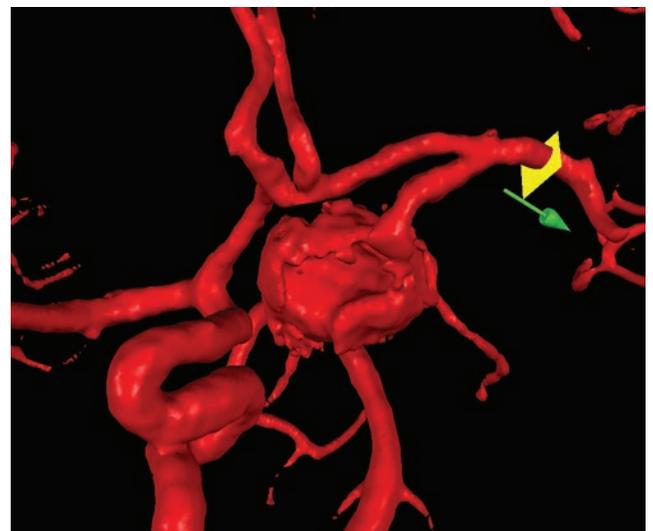
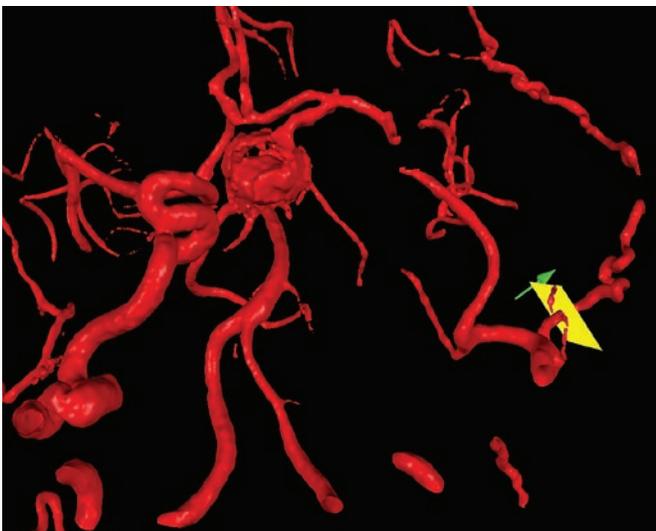
Given her age and immediate post operative status, the risks of heparin administration are significant.

A NOVA - quantitative MRA study was performed and pre and post op flows in the MCA were compared.

NOVA conclusively demonstrated preservation of flow in the LMCA compared to preop. Hence, this was an embolic event. Patient was anticoagulated and remains symptom free.

Figure 2: Post op NOVA. LICA is occluded. STA-MCA bypass is patent with flows of 79 ml/min. LMCA supplied by RACA across Acom. LMCA flow increased compared with pre-op values.

Post-operative 3D models



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