Carotid Case Report

Pre & Post Carotid Endarterectomy

NEED

Quality control after carotid endarterectomy is recommended since early occlusion or embolization from the operative site may result in a perioperative stroke. The risk of restenosis increases if technical imperfections during the operation remain undetected.

SURGICAL PROTOCOL

Before endarterectomy, volume flow is measured in the common carotid artery (CCA) with an 8 mm probe. The external carotid artery (ECA) is clamped and flow through the internal carotid artery (ICA) is measured. Then the ICA is clamped and flow through the ECA is measured. The vessels are clamped at sites where the vessel is soft and free from arterosclerotic plaque. Measurements are repeated immediately after restoration of flow following endarterectomy, and after a 10 minute observation period.

RESULTS

n = 37 patients
CCA: Mean flow increase: 46 mL/min
ICA: Mean flow increase: 100 mL/min
ECA: Mean flow decrease: 13 mL/min

In 6 (16%) of the operated 37 cases, flowmetry had an impact on the surgical procedure. In one operation decreasing flow through the observation period led to a reopening of the arteriotomy where a thrombus was forming at the endarterectomy site. The site was cleansed and the arteriotomy closed using a patch. Flow measurements at the end of the operation were similar to those measured immediately after the endarterectomy.

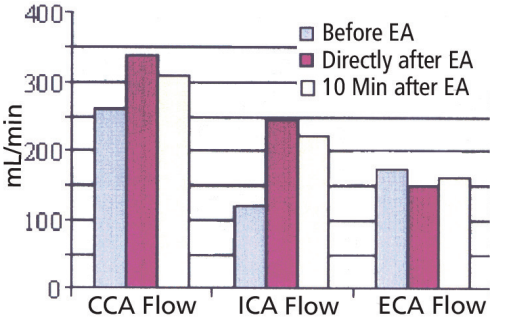
CONCLUSIONS

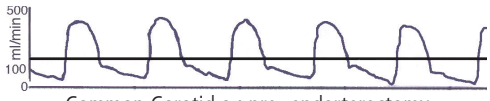
Transit-time flowmetry can reveal flow deficiencies that necessitate immediate reintervention before occlusion or embolization occurs. Absolute values of blood flow vary considerably between individuals depending on the severity of their disease. Consequently, relative changes in flow seem to be more important than a defined target volume of flow.

REFERENCES:

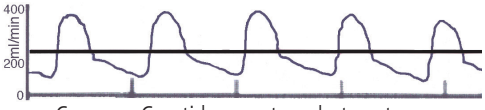
Mätzsch T, Lundell A, "Transit-Time Flowmetry as Completion Control in Carotid Surgery," Medi-Stim Clinical Cases, December 1999.

Gordon, I, Transonic Carotid Medical Note (CV-2-mn)

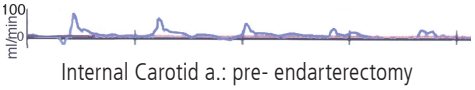




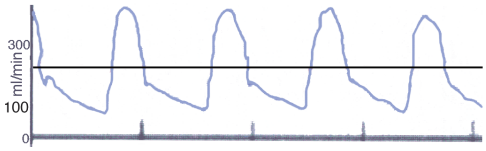
Common Carotid a.: pre- endarterectomy
Mean Flow: 196 mL/min



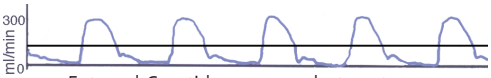
Common Carotid a.: post- endarterectomy
Mean Flow: 285 mL/min



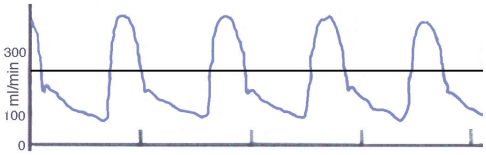
Internal Carotid a.: pre- endarterectomy
Mean Flow: 28 mL/min



Internal Carotid a.: post- endarterectomy
Mean Flow: 191 mL/min



External Carotid a.: pre- endarterectomy
Mean Flow: 125 mL/min



External Carotid a.: post- endarterectomy
Mean Flow: 191 mL/min

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