

## P04

### **Extra-intracranial bypass surgery – successful prevention of the recurrence by optimized hemodynamics – A Case study**

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**Background:** Extra-intracranial bypass surgery as a therapeutic option for ischemic strokes was a frequently applied intervention in the 1980s and 1990s. However the surgery was often performed without sufficient preselection of suitable patients, thus many of them might not have fulfilled the criteria to be chosen for this procedure like impaired hemodynamics or recurrent strokes and either did not benefit from the procedure or suffered complications.

Recently there is increasing evidence that patients with hemodynamically relevant stenoses or vessel occlusions can benefit from a superficial temporal artery to middle cerebral artery bypass (STA-MCA bypass) if the indication is restricted.

**Aim:** Proof of the benefits of an MCA-STA bypass for patients with recurrent ischemic strokes despite anti-platelet aggregation and either stenosis or occlusion of the internal carotid artery or middle cerebral artery.

**Hypothesis:** After surgery there are fewer or no recurrent strokes. An improvement of hemodynamics can be seen postoperatively. The bypass continues to be perfused and contributes to a major part of cerebral hemodynamics which can be seen in duplex-sonography.

**Methods:** We did a retrospective case analysis of 9 patients having received an STA-MCA-Bypass between 2014 and 2016. Preoperative diagnostics included a Head MRI, an extra- and transcranial color coded duplex sonography and a conventional 4-vessel cerebral angiography. Follow-up included anamnesis, examination of the patient and transcranial color coded duplex sonography performed two times within a year (mostly 6 and 12 months after the intervention)

**Results:** To date there are no recurrent stroke symptoms reported. All bypasses are perfused sufficiently. No relevant complications could be found.

**Conclusion:** The MCA-STA Bypass surgery is a promising therapeutic option for patients with hemodynamically relevant stenosis or occlusion of the main arteries of the head and neck.