



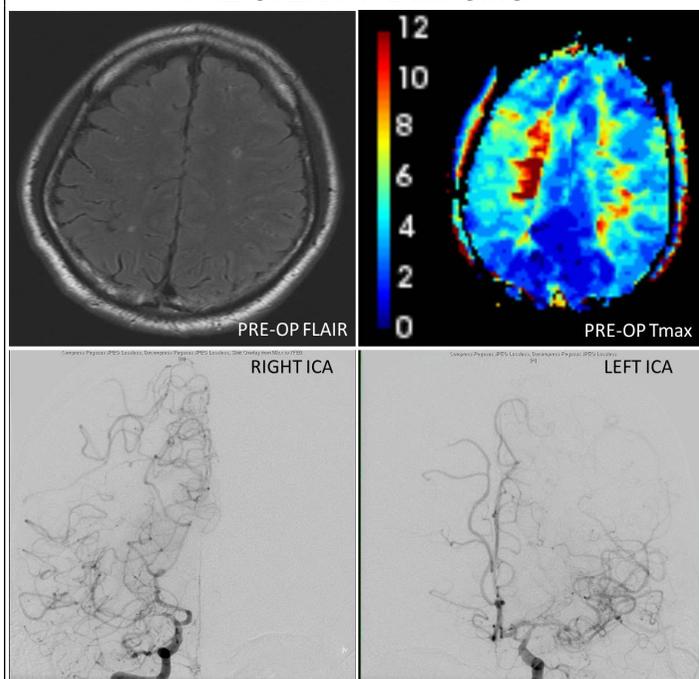
Introduction

- Direct EC-IC bypass has become the standard of care for Moyamoya disease.
- We describe a rare phenomenon of acute contralateral ICA occlusion after direct bypass in a small cohort of patients.

Methods

- The Stanford Moyamoya database which spans 25 years and includes 822 patients was queried to find cases.
- All patients had undergone a standardized procedure – direct ST-MCA bypass under mild hypothermia.
- An age and sex matched control group (who did not develop contralateral ICA occlusion) was also generated.

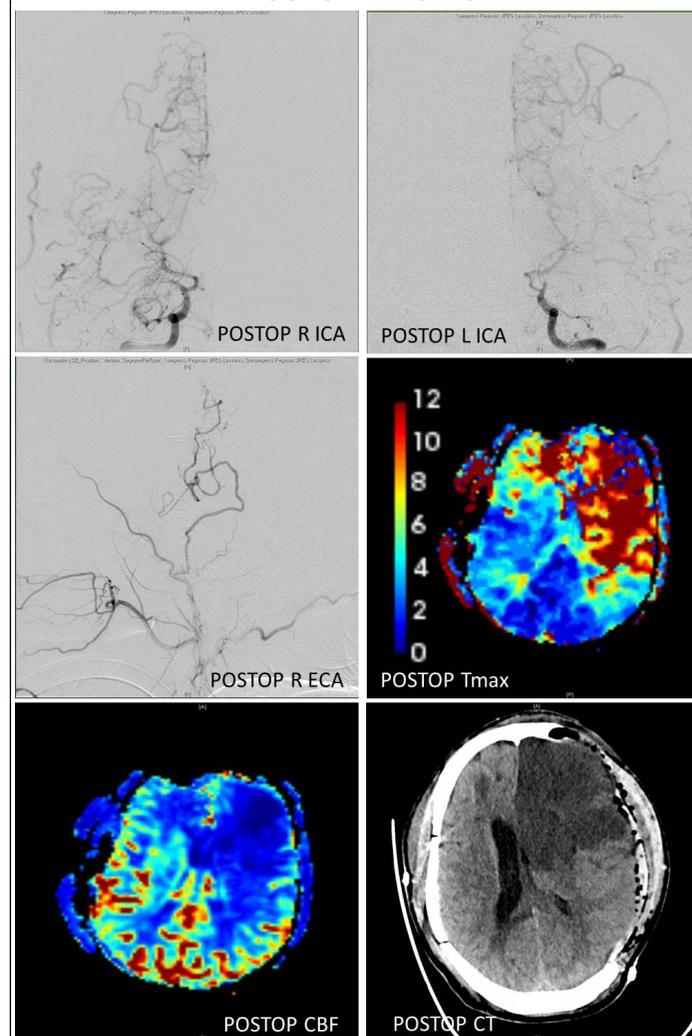
PRE-OPERATIVE IMAGING



Results

- The incidence of symptomatic contralateral ICA occlusion was 1.09% (n=9).
- This occlusion occurred within 24 hours post-surgery in all patients.

POSTOP IMAGING



The L ICA occluded leading to a L MCA infarct necessitating a decompressive hemicraniectomy. The patient ultimately made a good recovery.

Results

- The female:male ratio 8:1 in contrast with the overall cohort of patients where the female:male ratio was 2.5:1 [OR=2.836, CI 0.51-72.86].
- 8 out of 9 patients who developed this complication were non-Asian in ethnicity vis a vis 6 Asians and 3 non-Asians in the control group (OR=13.25, CI 1.3-411.7, p=0.026).
- In 7 out of 9 patients who developed ICA occlusion contralateral to the side of surgery, the contralateral ICA either had non-critical stenosis or provided good orthograde filling of the hemisphere prior to surgery.
- In the control group, only 2 patients had a normal or non-critically stenosed contralateral ICA whereas 7 had either critical stenosis or occlusion of the contralateral ICA (p=0.028).
- The Mean arterial pressure had been maintained between 70-90 during surgery [raised to 90-110 during M4 occlusion] and 90-110 for the first 24 hours after surgery.
- None of the other variables analyzed were significantly different between groups.

Conclusions

- Contralateral ICA occlusion seems to occur more frequently in women, non-Asians and in those with patent contralateral ICA vessels.
- A reduced demand on the contralateral ICA could be responsible for this occlusion.

Learning Objectives

Contralateral acute vessel occlusion is a rare phenomenon but should be watched for and managed aggressively.