Extracranial-Intracranial Bypass Surgery for Symptomatic Medically Optimized Carotid Occlusion

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Introduction

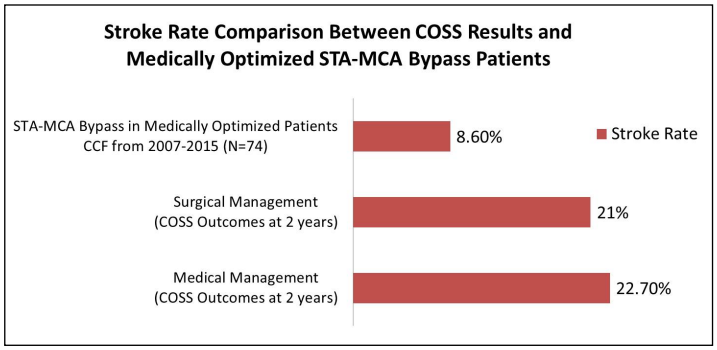
The Carotid Occlusion Surgery Study showed that extracranial-intracranial (EC-IC) bypass has similar subsequent stroke rates compared to medical management for patients with carotid occlusion and cerebral ischemia. However, even with optimal medical management, the 2-year risk of stroke is 22.7%. Our study aims to determine whether EC-IC bypass surgery is an appropriate treatment for carotid occlusion patients who are optimally medically managed but continue to have recurrent strokes or transient ischemic attacks (TIA).

Learning Objectives

To evaluate whether STA-MCA bypass should be used in patients that are having persistent strokes despite being medically optimized for carotid occlusion.

Methods

Patients with carotid occlusion that underwent EC-IC bypass surgery between 2007-2015 were analyzed retrospectively. Inclusion criteria include recurrent strokes/TIAs while on optimal medical management. NIH Stroke Scale/Score (NIHSS) and continue stroke events were used to assess post-surgical outcomes.



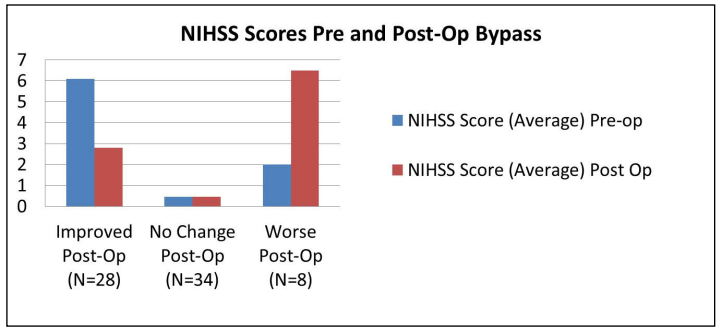
Results

74 patients who underwent EC-IC bypass surgery at the Cleveland Clinic were analyzed retrospectively.

28 patients had NIHSS score improvement after surgery (average score of 6.1 pre-surgery vs 2.8 post-surgery), 34 patients had no change in their NIHSS score, and 8 patients had worse NIHSS score (2 pre-surgery vs 6.5 post-surgery).

Of the 8 patients that worsened, 1 patient was medically non-compliant, 1 patient had symptom inducing migraine headaches, 1 patient had a graft thrombus, 1 had an intraoperative stroke and 1 had an additional revascularization procedure that caused stroke. 4 patients were lost to follow up.

64 patients had no new stroke events post op resulting in an 8.6% stroke rate.



Conclusions

This study used NIHSS scores to compare outcomes which is a more sensitive tool than modified Rankin Score to evaluate patient's neurologic outcomes. Our initial results suggest that EC-IC surgery may benefit carotid occlusion patients with recurrent strokes/TIAs despite being on optimal medical management. This study will analyze risk of future stroke and clinical outcomes at later post-surgical time points.

References

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