



Outcomes of Surgical Revascularization in Patients with Occlusive Cerebrovascular Disease: A Case

Series

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Introduction

Surgical revascularization is indicated in patients with occlusive cerebrovascular disease refractory to medical management. Both direct and indirect bypass procedures are used in the treatment of adult atherosclerosis (AS) and Moyamoya (MM).

Learning Objectives

By the end of this session, participants should be able to:

- 1) Understand the value of surgical intervention in occlusive cerebrovascular disease
- 2) Consider bypass procedures as possible intervention in certain subsets of patients.

Methods

In this retrospective chart review, we identified adults who had occlusive cerebrovascular disease as a result of AS or MM and underwent a revascularization procedure between December 2009 and June 2014. Chi-square test was performed for 30-day post-procedure complication rates between subjects with AS and MM. Outcome events were TIA and any stroke (ischemic or hemorrhagic).

Results

Twenty adult patients (15 AS and 5 MM) were identified for analysis (mean age 52 yrs, range 28-73, women 70%, Hispanic 70%, white 25%, black 5%). Subject characteristics were hypertension 90%, hyperlipidemia 70%, diabetes 65%, and history of smoking 45%. Presenting symptoms were ischemic stroke 75% and TIA 25%. The final analysis included 21 procedures performed on 21 hemispheres. 30-day complication rates for AS and MM subjects were both 33.3%. One complication in the AS cohort was related to post-procedure hypotension, and one complication in the MM cohort was related to contralateral ischemic stroke. After removing these non-surgical events, 30-day complication rates were 26.7% for AS and 16.7% for MM. No significant differences in outcomes were determined between the cohorts peri-operatively ($p > 0.05$)

Conclusions

There was no significant difference in 30-day complication rates for bypass surgery in adults with either MM or AS. Compared to those with AS, adult MM patients may be better surgical candidates as they are often younger and have fewer comorbidities. Although limited by number of subjects, our study demonstrates that bypass in adult MM subjects carries significant risks that may be equivalent to those with AS.