

## Introduction

Surgical revascularization remains the most durable treatment for moyamoya. We review a 10-year institutional experience of direct or indirect revascularization for this disease.

## Methods

A database of all patients with angiographically-confirmed moyamoya at VUMC from 2005 to 2014 (ICD-9 code: 437.5) was screened for patients undergoing superficial temporal artery-middle cerebral artery (STA-MCA) anastomosis, encephaloduroarteriosynangiosis (EDAS), or encephaloduroarteriomyosynangiosis (EDAMS) as the primary treatment. Demographic and clinical variables were collected from the medical records, and reported descriptively. Angiographic and clinical outcomes were compared for direct vs. indirect procedures with Chi-square or Fisher's exact test as appropriate.

## Results

There were 74 patients (mean age=33.2±17.1 years, 23M/51F) undergoing 107 operations. 51 (69%) patients had bilateral disease. Common presentations included ischemic stroke (58, 78%), hemorrhage (12, 16%), and transient ischemic attack (TIA, 52, 70%). Sixty-one (82%) were modified Rankin scale (mRS) 0-2 at presentation. Operations included direct STA-MCA bypass (43, 40%), EDAS (57, 53%), and EDAMS (7, 7%). Post-operative complications included seizure (4, 4%), stroke (2, 2%), TIA (3, 3%), bleeding (2, 2%), and infection (3, 3%). At 1-year angiographic follow-up (mean=15±10 months), 35/60 (58%) had fair-to-good revascularization. Sixty-eight (88%) were mRS 0-2 at last follow-up (mean=2.5±2.1 years). Three (4%) patients died and three (4%) had a new stroke. There were no significant differences in clinical or angiographic outcomes between direct and indirect procedures.

## Conclusions

Clinical outcomes after revascularization (regardless of modality) for moyamoya are favorable (88% with functional independence), despite only 58% of bypasses achieving fair-to-good angiographic revascularization. Operative intervention in the setting of moyamoya disease