

Introduction

Intracranial aneurysms most commonly arise from anterior communicating artery, posterior communicating artery, and the middle cerebral artery. (1) These locations are unique, each supplying a different region of the brain and existing within proximity to a unique set vital neurologic structures. We aim to compare the outcomes between these locations to see if any pose a different level of risk.

Methods

Solitary aneurysms microsurgically clipped by the senior author (M.T.L.) were included from a database of patients treated between January 2010 to April 2013 at a tertiary academic medical center. Patient age, sex, aneurysmal rupture at presentation, tobacco use, hypertension, aneurysms size, and pre-and post-operative neurologic status were collected. Neurologic status was assessed using the modified Rankin Scale (mRS). Neurologic Outcomes were dichotomized, with mRS scores 0-2 as ‘good’ and 3-6 as ‘poor’ and aneurysm sizes as small (<10 mm) or large (=10 mm).

Results

A total 196 patients were treated; 69 were located at the middle cerebral artery (MCA), 76 anterior communicating artery (ACom), and 51 posterior communicating artery (PCom) aneurysms. 47.8% (97/196) percent of patients presented with a ruptured aneurysm and 13.9% (25/180) of the total aneurysms were considered large. No difference between gender (p-value=.83), age (p-value=.41), size (p-value=.81), tobacco use (p-value=.09), hypertension (p-value=.85), or neurologic status prior to treatment (p-value=.31) was found between locations. However, significantly fewer patients with MCA aneurysms (27.5%, 19/69) presented with ruptured aneurysms versus the ACom (56.6%, 43/76) and PCom (64.7%, 33/51) (p-value=<0.001).

No difference in the rate of good outcomes was present between the MCA (81.2%, 56/69), ACom (77.6%, 59/76), and PCom (86.3%, 44/51) (p-value=.48). Similarly, no difference existed for death between these groups: MCA (97.1%, 67/69), ACom (97.4%, 74/76), and PCom (100%, 51/51) (p-value=.49).

Learning Objectives

By the conclusion of this session, participants should be 1) familiar with the risk associated of treating the most common locations of intracranial aneurysms with microsurgical clipping and the similarity of outcomes between them.

References

1.Keedy A. An overview of intracranial aneurysms. McGill journal of medicine : MJM : an international forum for the advancement of medical sciences by students. 2006;9(2):141-6.