

Abstract

Advantages of endovascular treatment - a new intervention for intracranial aneurysms is controversial. Some studies reported excellent clinical outcomes in the long run, while others reported salient surgical complications (e.g. inadvertent coil embolization, rebleeding). Our paper is the first study to investigate the effect of endovascular embolization on various neuropsychological domains, with reference to microsurgical clipping - a relatively more conventional treatment choice). A comprehensive neuropsychological examination was administered to 19 patients with a ruptured aneurysm in the anterior communicating artery (ACoA) and 20 normal control. Ten patients had received microsurgical clipping and nine patients had undergone endovascular embolization. The neuropsychological domains being tested included general intelligence, verbal memory, visuospatial memory, executive functions, attention and concentration, motor performance, language functionings, and visual / perceptual abilities. Results suggested that patients with microsurgical clipping performed significantly worse than healthy controls in verbal memory, executive functions, auditory attention, motor abilities, and speech function; whereas the endovascular embolization group had no difference from the control group in these domains. To conclude, our study highlighted the advantages of endovascular embolization in handling ACoA aneurysms because it provided less severe neuropsychological sequelae.