

Review of the Anatomy of the Middle Cerebral Artery and Its Anomalies

Authors : Karen Cilliers, Benedict John Page

Abstract : The middle cerebral artery (MCA) is the most complex cerebral artery although few anomalies are found compared to the other cerebral arteries. The branches of the MCA cover a large part of each hemisphere, therefore it is exposed in various operations. Although the segments of the MCA are similarly described by most authors, there is some disagreement on the branching pattern of the MCA. The aim of this study was to review the available literature on the anatomy and variations of the MCA, and to compare this to a pilot study. For the pilot study, 20 hemispheres were perfused with coloured silicone and the MCA was dissected. According to the literature, the two most common branching configurations are the bifurcating and trifurcating patterns. In the pilot study, bifurcation was observed in 19 hemispheres, and in one hemisphere there was no branching (monofurcation). No trifurcation was observed. The most commonly duplicated branch was the anterior parietal artery in 30%, and most commonly absent was the common temporal artery in 65% and the temporal polar artery in 40%. Very few studies describe the origins of the branches of the MCA, therefore a detailed description is given. Middle cerebral artery variations that are occasionally reported in the literature include fenestration, and a duplicated or accessory MCA, although no variations were observed in the pilot study. Aneurysms can frequently be observed at the branching of cerebral vessels, therefore a thorough knowledge of the vascular anatomy is vital. Furthermore, knowledge of possible variations is important since variations can have serious clinical implications.

Keywords : anatomy, anomaly, description, middle cerebral artery, origin, variation

Conference Title : ICMMA 2015 : International Conference on Microscopic and Macroscopic Anatomy

Conference Location : Barcelona, Spain

Conference Dates : August 17-18, 2015