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Variations of the anterior cerebral artery and its cortical branches

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Very few studies report a detailed description on the origin, absence, duplication and triplication of the anterior cerebral artery (ACA) cortical branches. These aspects have also not been studied in a Western Cape population. Limited information is available on differences between the right and left side, sex, different age groups and different population groups. Therefore, the aim of this study is to report a detailed description on the anatomy of the ACA in a Western Cape population. A colored silicone was injected into the ACA of 121 hemispheres, consisting of 83 males and 38 females, between the ages of 22 and 75. Specimens were distributed over three population groups, namely, colored (n=72), black (n=37), white (n=10) and unknown (n=2). The origin, absence, duplication and triplication of the cortical branches were noted. The diameters were measured using a digital micrometre and the lengths were measured using string and a ruler. The diameter and lengths indicated statistically significant differences between the right and left side, sex, different age groups and different population groups. Most commonly absent was the callosomarginal artery and most commonly duplicated was the paracentral lobule artery. The origins were similar to the literature; however, unusual origins were also noted. Changes in diameter can indicate early signs of certain pathological conditions and a shorter trunk can play a role in aneurysm formation. Since these variations can have clinical implications, future research should focus on these aspects and give detailed descriptions of the ACA anatomy.

Biography

Karen Cilliers obtained her MSc in Human Anatomy (Cum Laude) from Stellenbosch University in March 2016. Since January 2013 until December 2015, she has been working part time as a demonstrator and tutor for anatomy and has given several Anatomy and Histology related lectures. She has an extensive knowledge on the human brain as well as previous experience working with histological procedures. She has presented at national and international conferences and has attended numerous workshops. She has a publication in an upcoming issue of an accredited peer reviewed journal as well as two abstract publications.

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