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Anatomical variants of the circle of willis: A computed tomography angiography based study

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Knowledge of the presence of normal variants of Circle of Willis (COW) plays a crucial role in the diagnosis and management of cerebro vascular disorders¹. Based on radiological and anatomical studies, no more than 50% of the general population have a complete Circle of Willis (COW) ². It is proven that Lack of knowledge of the anatomical variants of COW is the cause of approximately 10% of medical errors³. Sensitivity (81%–90%) and specificity (93%) of multi-detector CT angiography (CTA) are reported to be high in identifying the anatomical variants in Circle of Willis (COW)⁴. Aim of this study is to identify the frequency of anatomical variants in Circle of Willis by using Computed Tomography Angiography (CTA) and to determine the gender association of COW anatomical variants. In this retrospective study COW CTA images of 400

patients are reading by a radiologist to identify the variants by using Multi Planar Reconstruction (MPR) mages, Maximum Intensity projection (MIP) images and Volume Rendering (VR) images.. Variants present in anterior circulation (A1 segment, Anterior Communicating artery (AComA) and A2 segment), posterior circulation (P1 segment, Posterior Communicating artery (PComA) and P2 segment), Middle cerebral artery (MCA), Basilar and vertebral artery, internal carotid artery (ICA), and others will be studied. Data will be analyzed by using SPSS and frequency of variants will be identified. Chi-Square test will be used to find out the association of variants among gender.

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