Morphological parameters for Bleeding in Arteriovenous Malformations of the Brain by Multi-Detector CT Angiography

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Patients with brain arteriovenous malformation (AVM) have a certain risk to bleed, and the goal of this study is to examine the effect of radiological and clinical predictive characteristics of AVM hemorrhage using multidetector CT angiography (MDCT).

Material: this is a series of 57 patients with a mean age of 35.46 years, who were diagnosed at the Institute for Radiology and MRI, while the same were hospitalized at the Clinic of Neurosurgery, Clinical Center of Serbia in the period from January 2008 to March 2016. For all patients, the diagnosis was made using MDCT angiography. Two groups of patients were observed. The first group includes patients who were not initially presented by hemorrhage, while the second group was initially presented by hemorrhage. Both groups were treated with medical therapy, or a combination of medical therapy with embolization / surgery / radiotherapy.

Results: Deep venous drainage (p <0.05), the combined arterial supply from different basins (p <0.05) with a length> 60mm, venous dilation present in the drainage vein (p <0.01) and the angle of casting supply arteries in the nidus (p <0.01), carry a risk of repeated bleeding. In the group of patients who had initial hemorrhage a mean value of the sized corner casting was 130°, while the group that did not had initially bleeding mean value of the size of the measured angle was 103.81 with a standard deviation of 17.21 (p <0.01).

Conclusion: arterio-venous malformations with the deep venous drainage from the carotid and VB basin, the length of the feeding arteries> 60mm, angle of casting feeding arteries in the nidus ≥ 130 ° and dilatation and / or venous aneurysm drainage vessel are predictive model for clinical presenting by hemorrhage.

Key Words: AVM of the brain, bleeding, morphological parameters

Biography

Biljana Milatović has completed her postgraduate Specialist academic studies in Radiology with the paper entitled “The Comparison of Digital Subtraction Angiography and Multi slice CT Angiography in the Evaluation of Intracranial Aneurysms” and completed her PhD in neuroradiology with paper entitled as “Predictive factors for haemorrhage in arteriovenous malformations by digital subtraction angiography and MDCT angiography of the brain”. In 2006 and 2007 she worked as a general practitioner at the Institute for the Medical Protection of Mother and Child, at the Radiology department. She started working as a general practitioner at Radiology – Neurosurgery department (Interventional Neuroradiology, MSCT neuroradiology imaging and MRI imaging) in October 2007. She has worked at the Emergency and Trauma Center since September 1st, 2009 (Diagnostic emergency neuroradiology, Ultrasound diagnostics and x-ray diagnostics). Dr. Biljana Milatović is currently working at the Clinical center of Serbia as a neuroradiologist in Center for Radiology and Magnetic resonance Imaging since February 1st, 2008. She is a member of the European Association of Radiologists since 2008.

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