Stroke Mimics: The Quest for Leptomeningeal Anastomoses and Isolated Diffusion-Weigthed Mr Signal

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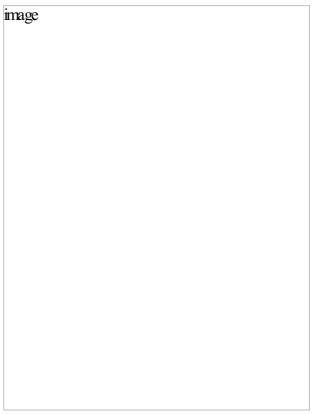

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STROKE MIMICS: THE QUEST FOR LEPTOMENINGEAL ANASTOMOSES AND ISOLATED DIFFUSION-WEIGTHED MR SIGNAL

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ABSTRACT

Stroke is caused by occlusion of a medium or large sized vessel in the brain. The treatment with either IV or IA thrombolysis is based on an accurate and time-sensitive diagnosis. On clinical and imaging grounds a number of entities – seizures, toxic-metabolic, infectious or demyelinating diseases - can mimic stroke. Identifying them is paramount as the treatment differs significantly. Prior imaging reviews have focused on the non-territorial distribution of these mimics. However, some important questions arise here. Are the vascular territories and their boundaries invariable in the human brain? Where should we draw the lines separating arterial territories? van der Zwan and colleagues addressed these questions decades ago. For him and others, the leptomeningeal anastomoses – a contentious concept for some but increasingly linked to collateral flow in stroke - is an important anatomic structure with significant variations in their distribution and pathophysiology. Variations in blood supply appear larger that traditionally taught. We revisit this concept and entertained their implications in cases of stroke mimics. For instance, the distribution of abnormalities in some toxic-metabolic processes appear to correlate with areas where rich leptomeningeal anastomoses are expected. We will also explore the concept of hyper intense signal on diffusion weighted-imaging (DWI) with no correlated changes on apparent diffusion coefficient (ADC) maps. We