EDITORIAL CIENTÍFICA

Chronic cerebrospinal venous insufficiency: State of the art and research challenges

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The idea that multiple sclerosis (MS) – a chronic neurological disease characterised by multifocal areas of inflammation, demyelination and neurodegeneration within the central nervous system – might be caused by stenoses in the veins draining the brain and spinal cord (the so-called chronic cerebrospinal venous insufficiency - CCSVI) is currently hotly debated by the scientific community. Proponents of venous paradigm claim for primary role of these blockages in initiating pathologic immune reactions. Some researchers support this revolutionary idea, while others vigorously challenge. Yet, the venous hypothesis is not necessarily contrary to its currently ruling autoimmune paradigm. The autoimmune and venous models may actually represent two sides of the same coin, with MS being a disease triggered and exacerbated by both immune and vascular mechanisms.

At the moment, research on venous abnormalities related to MS is in its infancy. Still, three questions regarding venous insufficiency in the cerebral territory should primarily be answered: I. Does CCSVI actually exist?. II. If it does, is it exclusively associated with MS?. III. If associated, does such a connection have an impact on neurological pathology?.

The main problem related to the concept of CCSVI is the definition of this clinical entity. According to Zamboni, it is the syndrome comprising stenoses in the jugular and azygous veins, characterised by collateral venous outflows and reduced cerebral blood flow. It should be emphasized that CCSVI should not be regarded as a newly discovered component of MS, but rather as an independent pathology, even if it could primarily be found in association with this disease. Moreover, the signs of impaired cerebral venous outflow can also be demonstrated in healthy controls, as well as in the patients with other neurological diseases. An unequivocal causative relationship between CCSVI and MS has not yet been proven. Irrespective of these controversies, since CCSVI comprises the blood outflow from a vital organ, for many doctors it seems reasonable to unblock such an obstruction. Others, however, argue that such interventions should be accepted as a valid treatment option for MS only on condition that: I. An impact of venous insufficiency on MS was demonstrated; II. Procedures to alleviate these vascular pathologies were proven technically feasible and safe; III. The treatments were proven to result in clinical benefit. Still, even if only a subgroup of MS patients actually benefited from vascular treatments, such procedures could potentially be a breakthrough in the MS management.

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