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Exertional Headache and Transient Global Amnesia: Toward a Common Venous Pathophysiology?

M. Zedde, G. Malferrari, G. Ferrarini, M. Norina

Neurology Department, Arcispedale Santa Maria Nuova, Reggio Emilia, Italy

Objectives: There have been several studies associating TGA with a venous haemodynamics disturbance, mainly because of an increased presence of IJVV incontinence. Other neurological conditions are advocated as venous disorders, e.g. exertional headache, also triggered by the Valsalva maneuver. We studied extra- and intracranial venous haemodynamics in two subgroups of consecutive out patients: A: exertional headache patients B: TGA patients (Valsalva triggered or not) Frequency of venous haemodynamics modifications in both jugular and vertebral circulation were compared. **Methods:** All patients (A: 6 pts; B: 20 pts) underwent clinical examination and careful history for diagnosis purposes and then a complete neurosonological examination was performed, evaluating the following parameters in both lying and sitting position: 1-IJVV and vertebral vein valve competence, 2-IJV asymmetry, 3-Distal IJV incontinence, 4-Activation of external or anterior jugular veins, 5-Unusual IJV activation pattern in sitting position **Results:** All group A patients shown almost 2 positive parameters. In group B patients, Valsalva triggered subgroup (10pts) had almost 1 positive parameter, while not Valsalva triggered subgroup (10pts) shown any venous haemodynamics changes in 6/10. There are several complex combinations of positive parameters, by association of jugular and vertebral vein abnormal pattern. **Conclusions:** Our preliminary data could support the initial hypothesis of venous pathophysiology of both exertional headache and TGA. The complete evaluation of several components of the extracranial venous system increases the positive association between venous haemodynamics and these conditions, by adding positional tests and vertebral vein systematic study.

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Incompetence of Internal Jugular Valve in Patients with Primary Headaches

C. Tejero, C. Perez, C. Corbalan, M. Montori, S. Santos, J.A. Mauri

Hospital Clínico Universitario Dr Lozano Blesa, Zaragoza, Spain

Objectives: The pathophysiology of primary headache (PH) is not totally known. Many patients refers pain associated with Valsalva-like manoeuvres (VM). VM leads to increased intrathoracic pressure and reduces cerebral venous drainage. Internal jugular vein valve incompetence (IJVVI) leads to retrograde venous flow during VM with transient increase of intracranial pressure. We analysed the prevalence of IJVVI in different kinds of PH

patients (migraine with and without aura and tensional headache) using duplex ultrasound. **Methods:** Bilateral measurements were performed at rest and during VM in 60 patients (20 per group). Were included in the study to 20 patients by group (60 in total) selected in the General Neurology and the Unity of Headache of our Hospital that fulfilled the criteria of the International Headache Society (IHS) for diagnosis of migraine with aura, migraine without aura and tensional headache. **Results:** Incompetence was concluded if retrograde venous flow could be seen in the jugular Doppler spectrum during repeated VM. No differences were found when different groups were compared. **Conclusions:** Our study suggests that intracranial venous congestion caused by retrograde jugular venous flow no play a role in the pathophysiology of PH with IJVVI as a risk factor.

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Vasomotor Reactivity of the Middle Meningeal Artery of Migraineurs Compared to Healthy Subjects

A. Alijagic-Schulze, F. Doepp, J.P. Dreier, S.J. Schreiber, J.M. Valdeuza

Neurological Center, Segeberger Kliniken, Bad Segeberg, Germany, Dept. of Neurology, University Hospital Charité, Berlin, Germany

Objective: Assuming that blood vessels of the dura mater play an important role in the pathogenesis of migraine, we presented first ultrasonic reference data of the middle meningeal artery (MMA) and maxillary artery (MA) on the 2009 ESNCH meeting. Now we examined the vasomotor reactivity (VMR) of the MMA, MA, middle cerebral artery (MCA), and superficial temporal artery (STA) comparing migraineurs and healthy subjects. **Methods:** Eleven subjects, 4 migraineurs and 7 non-migraineurs, were examined using transcranial (MMA, MCA) and extracranial color-coded sonography (MA, STA). Flow parameters (PI, systolic, diastolic and mean velocity) were recorded at rest, following hyperventilation and after 30 seconds of breath-holding directly thereafter. A t-test for paired samples was used for statistical analysis. **Results:** Six MMAs of migraineurs and 11 of healthy subjects were examined. Mean MCA flow velocity equally increased following breath-holding in both groups (37.3%±15.2 vs. 37.9%±16.5, respectively). Mean MMA flow velocity increase differed between both groups, however, the difference did not yet reach statistical significance (18.8%±48.9 vs. 5.92%±51.3, p=0.743). No VMR effect and no difference between both groups were seen in the MA and STA. **Conclusion:** Our results suggest, that the MMAs of migraineurs show VMR patterns similar to cerebral and not to extracranial blood vessels. This finding needs yet to be confirmed by larger samples.