OPEN SURGERY FOR CCSVI REDUCES THE BRAIN VENTRICLES VOLUME

VENTRICLES VOLUME IN NEURODEGENERATION

- It is considered an indirect index of brain atrophy
- It is a powerful predictor of motor and cognitive disorders
- It is correlated with scores of disability and of neuro-psychological impairment

Arch Neurol 2000; BMJ 2013

CSF ABSORPTION INTO THE SINUSAL VEINS DEPENDENT FROM GRADIENT OF PRESSURE

- CSF absorption is driven by pressure difference between SAS and SSS at a rate of approximately 0.1031 mL/min/mmHg.
- Minimum of 5 mmHg CSF pressure required to permit CSF absorption through the arachnoid villi into the superior sagittal sinus.

CSF FLOW DYNAMICS IS IMPAIRED IN CCSVI CONDITION

- Case control study, 6 months F-Up, CSF flow rate assessed by 3T MRL
- Significant CSF flow improvement in the treated group


STUDY HYPOTHESIS

- Ventricles enlargement: A feature common to several neurodegenerative disorders
- MAY extracranial venous flow restoration decreases cerebral ventricles volume in CCSVI cases?
PATIENTS POPULATION

- 56 patients with CCSVI associated with neurological disease. 15 patients excluded (inclusion/exclusion criteria)
- Case control study, 27 patients-14 controls not suitable to PTA for external compression coupled with valvular malformation.

SUROGICAL PROCEDURE

- Endophlebectomy
- Muscle section when appropriate
- Autologous vein patch angioplasty

RESULTS

- Ventricles volume is a prognostic biomarker, linked with brain atrophy in course of several neurodegenerative diseases
- To fix the jugular flow, in CCSVI cases, permits to significantly reduce the cerebral ventricles volume
- When CCSVI is associated to neurological disorders there is an underestimated mechanistic component of cerebral ventricles volume