TREATMENT OF CHIARI MALFORMATION TYPE I THROUGH ENDOSCOPIC THIRD VENTRICULOSTOMY: CLINICAL RESULTS AND PATHOGENETICAL IMPLICATIONS

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Hydrocephalus can be associated to Chiari malformation Type I in 7-10% of the patients from literature data. Though limited series are actually present in the literature, most authors consider ETV among surgical options in these cases.

Between January 2006 and March 2009 ten patients affected by Chiari malformation Type I associated with ventricular dilation were admitted at the Pediatric Neurosurgery Unit, Catholic University, Rome. All patients underwent endoscopic third ventriculostomy as treatment of their condition (Storz-Decq , rigid endoscope, 30 degrees).

There were 3 males and 7 females, with a mean age of 10.5 years (range 2 - 40 years). The mean duration of follow-up was 20.5 months. All patients had ventricular dilation at diagnosis, 3 cases showed the presence of a syrinx. In only 2 patients, elevated intracranial pressure was responsible of the presenting symptoms; in the other cases (8/10), Chiari malformation-related symptoms were associated to an asymptomatic ventriculomegaly and syringomielia.

All patients remained shunt-free at follow-up and no patient required foramen magnum decompression; ETV closure occurred in only one child after two years and was successfully managed with a repeated third ventriculostomy. Presenting symptoms resolved in all cases; moreover, we assisted to the syrinx resolution in one of three cases and to the ascent of the cerebellar tonsils in two cases.

Although based on a limited series, these results suggest that endoscopic third ventriculostomy should be considered an efficient treatment of Chiari malformation Type I associated to ventriculomegaly independently from the presenting symptoms.