



Introduction

Patients with Chiari type 1 malformation (CM1) may present primarily with visual symptoms.

The presence of papilledema without hydrocephalus, with associated visual troubles, indicating raised intracranial pressure (ICP), has been rarely reported in the literature.

The purpose of this study was to follow the clinical evolution after decompressive surgery and to examine the relationship between CM1 and papilledema.

Methods

Series of 5 children, aged 5 to 14 years.
Visuals symptoms: headache, diminished visual acuity, diplopia or retro-orbital pain.

Magnetic resonance imaging (MRI): CM1, 7 to 12 mm of tonsillar herniation, dilatation of the optic nerve sheaths and flattening of the posterior aspect of the globes,
Ophtalmological evaluation: bilateral papilledema,
Intraorbital Doppler sonography: reversed flow in the superior ophthalmic vein in two children.

Surgery consisted in posterior fossa decompression with C1 laminectomy and duraplasty.

Results

Following surgery (follow-up: 1 year to 5 years), *all children improved clinically.*
Papilledema completely resolve in only one case and improved in another. In the remaining three, papilledema was unchanged and intraorbital Doppler sonography demonstrated a persisting reversed flow of the superior ophthalmic vein, despite normalized intracranial pressure during postoperative monitoring with Codman® monitor in two children.

Conclusions

Patients with CM1 and papilledema from increased ICP may benefit from suboccipital decompression.

Following surgery, the significance of a persisting papilledema despite clinical and radiological improvement, as we encountered in three of our patients, remains enigmatic.

Learning Objectives

By the conclusion of the session, participants should be able to appreciate in children with CM1 the existence of
1) predominantly visual symptoms,
2) the spectrum of ophtalmological diagnostic tools in this context,
3) the presence of papilledema without hydrocephalus,
and they should discuss persisting papilledema without raised ICP in the postoperative course.

References

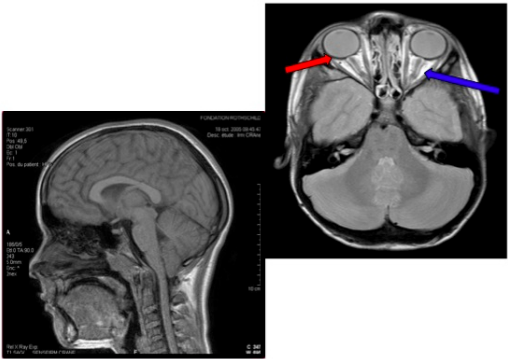
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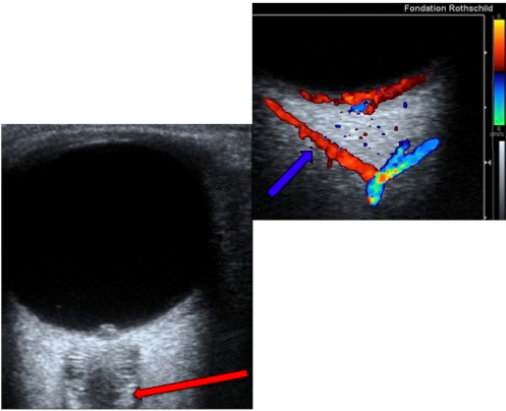
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Vaphiades MS, Eggenberger ER, Miller NR, Frohman L, Krisht A. Am J Ophthalmol. 2002 May;133(5):673-8.

Encephalic MRI: CM1 and ICP



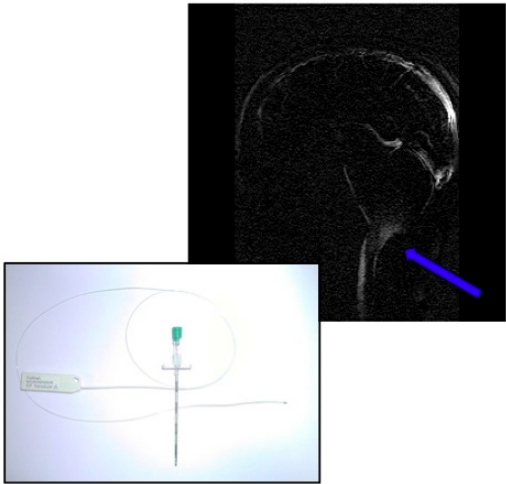
- Red arrow: flattening of the posterior aspect of the globes
- Blue arrow: dilatation of the optic nerve sheaths

Intraorbital Doppler sonography



- Red arrow: dilatation of the optic nerve sheaths
- Blue arrow: reverse flow in the superior ophtalmic vein

Postoperative encephalic flow MRI and Codman® monitor



Blue arrow: flow in the cisterna