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Chiari II malformation and myelomeningocele

P Nogues*, JM Poch, E Vazquez, J Spotti and J Zamora

Address: Pediatric Neurosurgery and Pediatric Neuroradiology Departments Hospital Universitario Materno-Infantil Vall d' Hebron. Barcelona. Spain

Email: P Nogues* - pnogues@terra.es

* Corresponding author

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Background

Chiari II malformation has been reported in 60–95 % of patients with myelomeningocele. Many theories have been proposed to explain the origin of Chiari II malformation, the best of them is the lack of expression of surface molecules on neurons in the developing neural tube, with failure of posterior neuropore closure. Multiple anomalies involving the hindbrain, spinal cord and supratentorial compartment can be seen in this complex malformation, developing hydrocephalus, syringohydromyelia, and other anomalies that have influence in therapy and prognosis.

Materials and methods

Patients with myelomeningocele are operated on shortly after birth, but they usually need surgical therapy again afterwards, consisting of posterior fossa decompression, once they are evaluated following a clinical and imaging protocol. A retrospective review of all patients with myelomeningocele and Chiari II, diagnosed in our pediatric hospital since 1991 until now, is presented.

Results

Our series include 81 patients with Chiari II malformation, mostly associated with previous myelomeningocele.

Conclusion

Authors emphasize the clinical, imaging, and other procedures required to diagnose and evaluate these patients, in order to safely indicate surgical decompression. An explanation about the different surgical methods used in our department is given, with correlation with overall reported results.