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Shunt Placement in Treatment of Hydrocephalus in Patients with Myelomeningocele

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Abstract : Hydrocephalus frequently occurs with spina bifida, and up to 80% of such patients need to be shunted. Objective: It's sought to improve the results of the surgical treatment of hydrocephalus in children with spina bifida. Methods: We have analyzed the results of the surgical treatment of 80 patients aged between 1 month and 1,5-year-old with hydrocephalus and myelomeningocele. All patients underwent surgery in the period of 2013-2018. Results: In all patients, spina bifida was associated with hydrocephalus with a predominant extension of the posterior horns of the lateral ventricles in the form of colpocephaly, Chiari malformation type 2. Based on the method "Choose right shunt" the determination of the point of critical deformation of the ventricular system was established, 47 (58.8%) patients for the 1st stage underwent ventriculoperitoneal (VP) shunt surgery with a low-pressure valve, 28 (35.0%) patients with medium pressure and 5 (6.2%) with high-pressure valve. Under or over drainage complications were not observed in the postoperative period. The 2nd stage of surgery for myelomeningocele repair was planned in 1-2 months with the follow-up head ultrasonography and electromyography study. Conclusion: The implantable shunt systems parameters chosen before surgery in the surgical management of hydrocephalus in children with myelomeningocele are important in the causes of under or over drainage states, cerebrospinal fluid leakage from the myelomeningocele sac. Management of hydrocephalus should be performed by considering myelomeningocele affecting craniospinal compliance.

Keywords : hydrocephalus, spina bifida, myelomeningocele, ventriculoperitoneal (VP) shunt
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