Cerebrospinal Fluid Research

Oral presentation

Efficacy of ventricular access devices in the treatment of neonatal intraventricular haemorrhage

David Shooman*, Will Dawes, Paul Chumas, Darach Crimmins and Atul Tyagi

Address: Department of Neurosurgery, Leeds General Infirmary, Great George Street, Leeds, LS1 3EX, UK
* Corresponding author

from 52nd Annual Meeting of the Society for Research into Hydrocephalus and Spina Bifida
Providence, RI, USA. 11–14 June 2008

Published: 3 February 2009

Cerebrospinal Fluid Research 2009, **6**(Suppl 1):S10 doi:10.1186/1743-8454-6-S1-S10

This abstract is available from: http://www.cerebrospinalfluidresearch.com/content/6/S1/S10

Background

Post Haemorrhagic Hydrocephalus (PHH) secondary to Neonatal Intraventricular Haemorrhage (IVH) is the commonest cause of infantile hydrocephalus. The presence of ventricular blood, underdeveloped immune systems and thin, friable skin preclude shunting as a primary intervention. Studies show that serial lumbar punctures, medical management and ventricular taps have no discernible effect on outcome. This study attempts to more clearly elucidate the role and efficacy of ventricular access devices (VAD) in the treatment of PHH. The aims were to determine the complication rate, the use of the VAD and the number of patients with VAD who later required shunting.

Materials and methods

29 Neonates were identified from the Leeds General Infirmary (LGI) database from 1999 to 2005 who underwent VAD insertion. A retrospective review of the notes from the LGI and the referring hospitals during the period of VAD insertion was undertaken.

Results

Complication rate was 12% with two wound breakdowns and one cardiorespiratory arrest. 62% required a shunt, 71% of whom had a birth weight of less than 1 Kg and 78% were born at less than 27 weeks. The shunted patients had their VAD accessed far more frequently than the non-shunted group. There was an average of 10.4 taps per shunted patient. 24/29 utilised the VAD regularly, but there was poor documentation of opening and closing pressures, ventricular indices and head circumference both pre and post tapping. 10/29 utilised VAD but did not require shunting, it is equivocal whether maturation would have taken place regardless of the VAD. There is a direct association between frequent use of the VAD and shunting suggesting a useful treatment tool with minimal complications.

Conclusion

The low complication rate associated with VAD suggests that they should be the intervention of choice in neonates with PHH. The role of the VAD is to 'buy time' allowing the patient to mature to a sufficient size prior to shunt insertion and to distinguish the group of patients with progressive PHH from those that will not require shunt placement. It is additionally recommended that more vigilance over documentation of VAD utilisation needs to be adhered to by the neonatal team.