

Improved Outcome in Shunted iNPH with a Combination of a Codman Hakim Programmable Valve and an Aesculap-Miethke ShuntAssistant

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Key words

- idiopathic normal pressure hydrocephalus
- programmable valve
- gravitational valve
- outcome
- shunt surgery

Abstract

Introduction: Low pressure valves with ventriculoperitoneal shunts have been proven to lead to good outcomes in the treatment of idiopathic normal pressure hydrocephalus. However, overdrainage complications are often seen with low opening pressures. Efforts have been made to obtain good outcomes without overdrainage complications by decreasing the hydrostatic pressure component using special valve constructions. The aim of this study was to ascertain whether it is possible to optimise outcome with the implantation of both an adjustable valve and a gravitational unit.

Materials and Methods: Between July 2003 and July 2006, 42 patients underwent ventriculoperitoneal shunt surgery with a Codman Hakim programmable valve (Codman, Johnson

& Johnson, Raynham, USA) and a Miethke ShuntAssistant (Miethke GmbH, Potsdam, Germany). These patients were followed up for a period between 2 years (35 patients) and 4 years (18 patients) after surgery.

Results: The systematic re-programming of the valves from 100 mmH₂O to 70 mmH₂O and then to 50 mmH₂O after 3 months allowed the brain to adapt to the implanted valve without the complication of overdrainage. The responder rates were 86% after two years and 83% after four years. Overdrainage was seen in 3% of the cases, mechanical complications occurred in 6%.

Conclusion: Our results indicate that the combination of a Codman Hakim programmable valve with a Miethke ShuntAssistant could improve outcomes in shunted iNPH. This finding has yet to be proven in a larger, prospective randomized trial.

Bibliography

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