

First clinical experiences in patients with idiopathic normal-pressure hydrocephalus with the adjustable gravity valve manufactured by Aesculap (proGAV^{Aesculap}®)

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Summary

Objective. Improved clinical outcomes after implantation of a low pressure valve in patients with idiopathic normal-pressure hydrocephalus is usually achieved at the expense of a higher overdrainage rate. Can an adjustable valve with a gravitational unit provide optimal results?

Method. In a prospective clinical outcome study conducted in the Unfallkrankenhaus Berlin, 30 patients with idiopathic normal-pressure hydrocephalus were treated surgically between June 2004 and May 2005 with the valve combination described above, and re-examination 3 months or 6 months postoperatively.

Results. Clinical outcome correlates with opening pressure level of the valve. Controlled adjustment of the valve from 100 mmH₂O to 70 mmH₂O, and then to 50 mmH₂O after 3 months, permits optimum adaptation of the brain to the implanted valve without overdrainage complications.

Conclusions. Advantages of this programmable gravity valve include: 1) the absence of unintentional readjustment through external magnets, and 2) the possibility of controlling the valve setting using an accessory instrument without the need for x-ray monitoring. A significant disadvantage is adjusting the valve after implantation. From the clinical point of view, this new "proGAV^{Aesculap}" valve is a necessary development in the right direction, but at the moment it is still beset with technical problems.

Keywords: Normal-pressure hydrocephalus; idiopathic; programmable valve; gravitational valve; shunt.