paediGAV

Smallest gravitational valve for the treatment of pediatric hydrocephalus.

paediGAV®

The paediGAV valve is the world's first and only gravitational valve specifically developed for the treatment of hydrocephalus in children.

The paediGAV valve combines the advantages of the tried and tested ball in cone valve with the advantages of a gravitational unit in one very slim, streamlined design.

With paediGAV, even the tiniest patients can receive the benefits of a gravitational valve.

paediGAV Features and Benefits:

Unique gravitational technology provides increased resistance as patient moves upright, greatly reducing or eliminating overdrainage.

Enables the surgeon to use different opening pressures for the supine and standing positions, managing overdrainage complications and patient discomfort.

Titanium housing allows the paediGAV valve to be made extremely small, but still have large flow paths to help reduce the risk of obstruction.

Ultra-low profile and streamlined shape for fast and easy implantation and improved aesthetics.

Available in different pressure combinations to help manage the complex needs of different patients.

- See more at:
https://www.aesculapusa.com/products/neurosurgery/hydrocephalus-shunts/paedigav#sthash.wVN2KM7A.dpuf

Case series

2014

A study compare the fixed-pressure paediGAV and the programmable Codman Hakim valves in the clinical setting.

Beez et al. conducted a retrospective review of patients younger than 16 years who underwent primary implantation of a ventriculoperitoneal shunt with either valve type between January 2005 and

December 2010. Shunt survival analyses were performed to identify variables associated with risk of shunt failure.

Of the 44 patients in the paediGAV cohort, 50% reached the endpoint of shunt failure with a mean time to shunt failure of 7 months. The Codman Hakim cohort comprised 29 patients, of which 55% experienced shunt failure with a mean time to shunt failure of 8 months. Stratified analyses identified young age at implantation and posthemorrhagic hydrocephalus as risk factors for shunt failure. Shunt survival analysis revealed no significant difference with regard to valve type.

This study confirmed important risk factors for shunt failure in children. Despite certain limitations and biases, similar findings for both valves examined in the clinical setting were obtained. Thus, valve type does not seem to influence risk of shunt failure. Prospective, randomized, and controlled trials are required to validate these results [1].

2005

A single-center, prospective, nonrandomized pilot study was performed to assess the Paedi-Gav gravity-assisted valve for the treatment of pediatric patients with hydrocephalus.

Participants were pediatric patients (age <16 years) who were candidates for a hydrocephalus shunt system that required a valve insertion at the time of enrollment. The primary outcome event was shunt malfunction; subclassified into shunt obstruction, shunt overdrainage, loculated ventricles, or infection. The shunt obstructions were further subclassified according to site. A total of 32 patients were enrolled onto the study, with 2 undergoing first shunt insertion after failed ventriculostomy and 30 undergoing shunt revisions. On average, the patients had had 3.3 shunt procedures prior to insertion of a Paedi-Gav valve.

During a follow-up interval of minimum 52 weeks and a median of 24 months after the first implantation on-study, shunt revisions were required in 17 (53.1%) of the 32 patients. The 12-month shunt-survival rate without revision of any component was 53%, with a median shunt-survival time of 388 days. The most common reasons for shunt revision were shunt obstructions (12/17) and overdrainage (3/17). Shunt obstructions were caused by valve-related failures (9/12) and distal obstructions (3/12).

Although the small number of patients enrolled in this study warrants cautious conclusions, the overall results are comparable to those reported for primary shunt insertions with conventional valves in pediatric patients with hydrocephalus. Although this study provides a rationale for examining the Paedi-Gav gravity-assisted shunt valve in a larger prospective randomized controlled trial, the shunt failure pattern, with a rather high frequency of valve-related failures, may indicate potential for further improvements in the valve design and/or manufacturing [2].

1)
Beez T, Sarikaya-Seiwert S, Bellstädt L, Mühmer M, Steiger HJ. Role of ventriculoperitoneal shunt valve design in the treatment of pediatric hydrocephalus–a single center study of valve performance in the clinical setting. Childs Nerv Syst. 2014 Feb;30(2):293-7. doi: 10.1007/s00381-013-2244-z. Epub 2013 Jul 31. PubMed PMID: 23900632.
2)
Meling TR, Egge A, Due-Tønnessen B. The gravity-assisted Paedi-Gav valve in the treatment of pediatric hydrocephalus. Pediatr Neurosurg. 2005 Jan-Feb;41(1):8-14. PubMed PMID: 15886507.