

Strata®

Válvula programable de la compañía Medtronic.



Posición 0,5: 1.5

Posición 1.0: 3.5

Posición 1.5: 9.0

Posición 2.0: 14.5

Posición 2.5: 20.0

WEB

<http://www.medtronic.com/patients/hydrocephalus/device/our-shunts/strata-valves/>

Características

Permite un ajuste no invasivo para 5 diferentes perfiles de presión de flujo, que se ajusta con una herramienta magnética.

La apertura es por un mecanismo cono-bola.

Permite la evaluación de la configuración del nivel de rendimiento sin necesidad de utilizar radiografía.

Literatura

Una revisión retrospectiva de 53 niños con una edad media de 2 años, y 61 válvulas implantadas, mostró eficacia en el tratamiento de la hidrocefalia en los niños.

La tasa de supervivencia en el primer año de 67,2% es comparable a la de un ensayo multicéntrico. De los 30 ajustes terapéuticos destinados durante el período de estudio, 16 (53,3%) dió como resultado una mejoría en los signos o síntomas anormales, obviando la necesidad de cirugía adicional (Ahn y col., 2007).

Inconvenientes

El mecanismo antisifón es de membrana, por lo que es sensible a la presión externa (Czosnyka y col., 2005).

Se puede desconfigurar en Resonancia de 3 Teslas (Inoue y col., 2005).

La presión abdominal afectada la presión de apertura la válvula.

El posicionamiento del sistema antisifón por encima o por debajo de la punta del catéter ventricular dan como resultado presiones de apertura superior e inferior respectivamente.

En el nivel de ajuste más bajo, la presión de apertura es casi 0 mm/Hg y la resistencia está debajo del rango fisiológico normal (Arnell y col., 2009).

Bibliografía

Ahn, E. S., M. Bookland, et al. (2007). "The Strata programmable valve for shunt-dependent hydrocephalus: the pediatric experience at a single institution." *Childs Nerv Syst* 23(3): 297-303.

Czosnyka, Z. H., M. Czosnyka, et al. (2005). "Evaluation of three new models of hydrocephalus shunts." *Acta Neurochir Suppl* 95: 223-7.

Inoue, T., Y. Kuzu, et al. (2005). "Effect of 3-tesla magnetic resonance imaging on various pressure programmable shunt valves." *J Neurosurg* 103(2 Suppl): 163-5. Jandial, R., H. E. Aryan, et al. (2004). "Effect of vagus nerve stimulator magnet on programmable shunt settings." *Neurosurgery* 55(3): 627-9; discussion 629-30.

Bibliografía recomendada

- 3: Bullivant KJ, Mitha AP, Hamilton MG. Management of a locked Strata valve. *J Neurosurg Pediatr.* 2009 Apr;3(4):340-3. PubMed PMID: 19338416.
- 4: Czosnyka ZH, Czosnyka M, Richards HK, Pickard JD. Evaluation of three new models of hydrocephalus shunts. *Acta Neurochir Suppl.* 2005;95:223-7. PubMed PMID: 16463854.
- 5: Demetriades AK, Bassi S. Antibiotic resistant infections with antibiotic-impregnated Bactiseal catheters for ventriculoperitoneal shunts. *Br J Neurosurg.* 2011 Dec;25(6):671-3. Epub 2011 Jun 27. PubMed PMID: 21707238.
- 6: Guilfoyle MR, Fernandes H, Price S. In vivo alteration of Strata valve setting by vagus nerve stimulator-activating magnet. *Br J Neurosurg.* 2007 Feb;21(1):41-2. PubMed PMID: 17453775.
- 7: Inoue T, Kuzu Y, Ogasawara K, Ogawa A. Effect of 3-tesla magnetic resonance imaging on various pressure programmable shunt valves. *J Neurosurg.* 2005 Aug;103(2 Suppl):163-5. PubMed PMID: 16370283.
- 8: Jandial R, Aryan HE, Hughes SA, Levy ML. Effect of vagus nerve stimulator magnet on programmable shunt settings. *Neurosurgery.* 2004 Sep;55(3):627-9; discussion 629-30. PubMed PMID: 15335429.
- 9: Kendall TW Jr, Cull DL, Carsten CG 3rd, Kalbaugh CA, Cass AL, Taylor SM. The role of the prosthetic axilloaxillary loop access as a tertiary arteriovenous access procedure. *J Vasc Surg.* 2008 Aug;48(2):389-93. Epub 2008 Jun 2. PubMed PMID: 18515038.
- 10: Kestle JR, Walker ML; Strata Investigators. A multicenter prospective cohort study of the Strata valve for the management of hydrocephalus in pediatric patients. *J Neurosurg.* 2005 Mar;102(2 Suppl):141-5. PubMed PMID: 16156221.
- 11: Kim JM, Park J, Kim JH, Han TS, Chang D, Na KJ, Choi SH, Kim G. Treatment of hydrocephalus with high-pressure valve ventriculoperitoneal shunt in a dog. *Jpn J Vet Res.* 2010 Aug;58(2):137-42. PubMed PMID: 20715423.
- 12: Kondageski C, Thompson D, Reynolds M, Hayward RD. Experience with the Strata valve in the management of shunt overdrainage. *J Neurosurg.* 2007 Feb;106(2 Suppl):95-102. PubMed PMID: 17330533.
- 13: Kulkarni AV, Drake JM, Kestle JR, Mallucci CL, Sgouros S, Constantini S; Canadian Pediatric Neurosurgery Study Group. Predicting who will benefit from endoscopic third ventriculostomy compared with shunt insertion in childhood hydrocephalus using the ETV Success Score. *J Neurosurg Pediatr.* 2010 Oct;6(4):310-5. Erratum in: *J Neurosurg Pediatr.* 2011 Feb;7(2):221. *J Neurosurg Pediatr.* 2011 Feb;7(2):221. PubMed PMID: 20887100.
- 14: Lacson E Jr, Wang W, Lazarus JM, Hakim RM. Change in vascular access and mortality in maintenance hemodialysis patients. *Am J Kidney Dis.* 2009 Nov;54(5):912-21. Epub 2009 Sep 12. PubMed PMID: 19748717.
- 15: Lavinio A, Harding S, Van Der Boogaard F, Czosnyka M, Smielewski P, Richards HK, Pickard JD, Czosnyka ZH. Magnetic field interactions in adjustable hydrocephalus shunts. *J Neurosurg Pediatr.* 2008 Sep;2(3):222-8. PubMed PMID: 18759607.

- 16: Lefranc M, Ko JY, Peltier J, Fichten A, Desenclos C, Macron JM, Toussaint P, Le Gars D, Petitjean M. Effect of transcranial magnetic stimulation on four types of pressure-programmable valves. *Acta Neurochir (Wien)*. 2010 Apr;152(4):689-97. Epub 2009 Dec 2. PubMed PMID: 19957091.
- 17: Lundkvist B, Koskinen LO, Birgander R, Eklund A, Malm J. Cerebrospinal fluid dynamics and long-term survival of the Strata valve in idiopathic normal pressure hydrocephalus. *Acta Neurol Scand*. 2011 Aug;124(2):115-21. doi: 10.1111/j.1600-0404.2010.01432.x. Epub 2010 Oct 8. PubMed PMID: 21039363.
- 18: Lundkvist B, Eklund A, Koskinen LO, Malm J. An adjustable CSF shunt: advices for clinical use. *Acta Neurol Scand*. 2003 Jul;108(1):38-42. PubMed PMID: 12807391.
- 19: Merli M, Salerno F, Riggio O, de Franchis R, Fiaccadori F, Meddi P, Primignani M, Pedretti G, Maggi A, Capocaccia L, Lovaria A, Ugolotti U, Salvatori F, Bezzi M, Rossi P. Transjugular intrahepatic portosystemic shunt versus endoscopic sclerotherapy for the prevention of variceal bleeding in cirrhosis: a randomized multicenter trial. Gruppo Italiano Studio TIPS (G.I.S.T.). *Hepatology*. 1998 Jan;27(1):48-53. PubMed PMID: 9425916.
- 20: Molina ME, Lema A, Palacios MG, Somoza I, Tellado M, Pita S, Nieto B, Vela D. [25 years experience in cerebrospinal shunt. Are new systems better?]. *Cir Pediatr*. 2008 Oct;21(4):223-7. Spanish. PubMed PMID: 18998373.
- 21: Nakashima K, Nakajo T, Kawamo M, Kato A, Ishigaki S, Murakami H, Imaizumi Y, Izumiyama H. Programmable shunt valves: in vitro assessment of safety of the magnetic field generated by a portable game machine. *Neurol Med Chir (Tokyo)*. 2011;51(9):635-8. PubMed PMID: 21946726.
- 22: Nakashima K, Oishi A, Itokawa H, Fujimoto M. [Effect of magnetic fields from home-use magnetic induction therapy apparatuses on adjustable cerebrospinal fluid shunt valves]. *No Shinkei Geka*. 2010 Aug;38(8):725-9. Japanese. PubMed PMID: 20697146.
- 23: Nomura S, Fujisawa H, Suzuki M. Effect of cell phone magnetic fields on adjustable cerebrospinal fluid shunt valves. *Surg Neurol*. 2005 May;63(5):467-8. PubMed PMID: 15883076.
- 24: Rajan DK, Haskal ZJ, Clark TW. Serum bilirubin and early mortality after transjugular intrahepatic portosystemic shunts: results of a multivariate analysis. *J Vasc Interv Radiol*. 2002 Feb;13(2 Pt 1):155-61. PubMed PMID: 11830621.
- 25: Toma AK, Tarnaris A, Grieve JP, Watkins LD, Kitchen ND. Adjustable shunt valve-induced magnetic resonance imaging artifact: a comparative study. *J Neurosurg*. 2010 Jul;113(1):74-8. PubMed PMID: 19817540.
- 26: Toma AK, Dherijha M, Kitchen ND, Watkins LD. Use of lumboperitoneal shunts with the Strata NSC valve: a single-center experience. *J Neurosurg*. 2010 Dec;113(6):1304-8. Epub 2010 Jul 30. PubMed PMID: 20672901.
- 27: Yamashiro S, Yoshida AO, Tajiri S, Anal S, Ito K, Kuratsu J. [A case of lumboperitoneal shunt as an effective palliative tool in a patient with leptomeningeal metastasis]. *No Shinkei Geka*. 2009 Oct;37(10):1007-11. Review. Japanese. PubMed PMID: 19882962.
- 28: Young WL, Prohovnik I, Ornstein E, Ostapovich N, Sisti MB, Solomon RA, Stein BM. The effect of arteriovenous malformation resection on cerebrovascular reactivity to carbon dioxide. *Neurosurgery*. 1990 Aug;27(2):257-66; discussion 266-7. PubMed PMID: 2117261.

29: Zhuang YJ, Singh TM, Zarins CK, Masuda H. Sequential increases and decreases in blood flow stimulates progressive intimal thickening. Eur J Vasc Endovasc Surg. 1998 Oct;16(4):301-10. PubMed PMID: 9818007.

30: Zuzak TJ, Balmer B, Schmidig D, Boltshauser E, Grotzer MA. Magnetic toys: forbidden for pediatric patients with certain programmable shunt valves? Childs Nerv Syst. 2009 Feb;25(2):161-4. Epub 2008 Dec 5. PubMed PMID: 19057906.

Casos clínicos

2348/Q a presión de 1,5 sin incidencias.

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