Codman Hakim programmable valve

Codman Hakim programmable valve for pediatric hydrocephalus.

Codman Hakim valves presented a variable perturbation rate with an alteration rate of 40% by 1,5-T MRI. Capitanio et al. haven't observed malfunctioning hardware after magnetic influnce. They claim a cranial x-ray immediately after MRI because of a high risk (40%) of decalibration especially in patients with low ventricles compliance [1].

Jamming

Shunt malfunction of a Codman Hakim programmable valve due to jamming of its programmable component may necessitate shunt revision. The authors report a method for programming jammed Codman Hakim programmable valves by using a Strata II magnet and additional neodymium magnets. The programming method was derived after studying a jammed valve in the laboratory that was explanted from an 10-year-old boy with a history of fourth ventricle ependymoma. Programming the explanted valve with a Codman programmer failed, but rotating a Strata II magnet above the valve resulted in rotation of the spiral cam in the valve. It was found that the Strata II magnet could be used to program the jammed valve by rotating the magnet 90° or multiples of 90° above the valve. The strength of the magnetic field of the Strata II magnet was able to be increased by putting neodymium magnets on it. The programming method was then successfully used in a patient with a jammed Codman Hakim programmable valve. After successful programming using this method, clinical and radiological follow-up of the patient was advised [2].

see Lumboperitoneal shunt with the Codman Hakim programmable valve

1)
Capitanio JF, Venier A, Mazzeo LA, Barzaghi LR, Acerno S, Mortini P. Prosepective Study to Evaluate Rate and Frequency of Perturbations of Implanted Programmable Hakim Codman® Valve after 1,5-Tesla MRI. World Neurosurg. 2015 Oct 5. pii: S1878-8750(15)01250-4. doi: 10.1016/j.wneu.2015.09.082. [Epub ahead of print] PubMed PMID: 26455768.

2)
Wong ST, Wen E, Fong D. Programming jammed Codman Hakim programmable valves: study of an explanted valve and successful programming in a patient. J Neurosurg Pediatr. 2013 Aug;12(2):160-5. doi: 10.3171/2013.4.PEDS12461. Epub 2013 May 24. PubMed PMID: 23705870.