

Microsurgical Endoscopic-Assisted Treatment of a Large Pediatric Posterior Cranial Fossa Arachnoid Cyst

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CASE PRESENTATION

The 1-year old boy presented with muscular hypotension, psychomotor retardation and strabismus (esotropia). The head circumference percentile jumped from 50 % at 6 months postnatal to 97 % at 12 month. While lying on his back the child was not able to turn on his belly. Sitting was not possible.

Preoperative magnetic resonance imaging (MRI) of the head displayed a large arachnoid cyst of the posterior cranial fossa. The cyst obviously compressed the right cerebellar hemisphere and the brainstem with shift of the midline structures (brainstem) to the left. Due to obstruction of cerebrospinal fluid (CSF) pathways at the level of the fourth ventricle hydrocephalus was demonstrated on the images.

The video shows microsurgical, endoscopic assisted fenestration of the arachnoid cyst to the basal cisterns via a small right-sided retroauricular osteoplastic craniotomy. Fenestration of the cyst was performed towards the spinal arachnoid space through the foramen magnum, between the lower cranial nerve (CN) group (IX, X, XI) and the VIIth and VIIIth CN and between these latter nerves and the

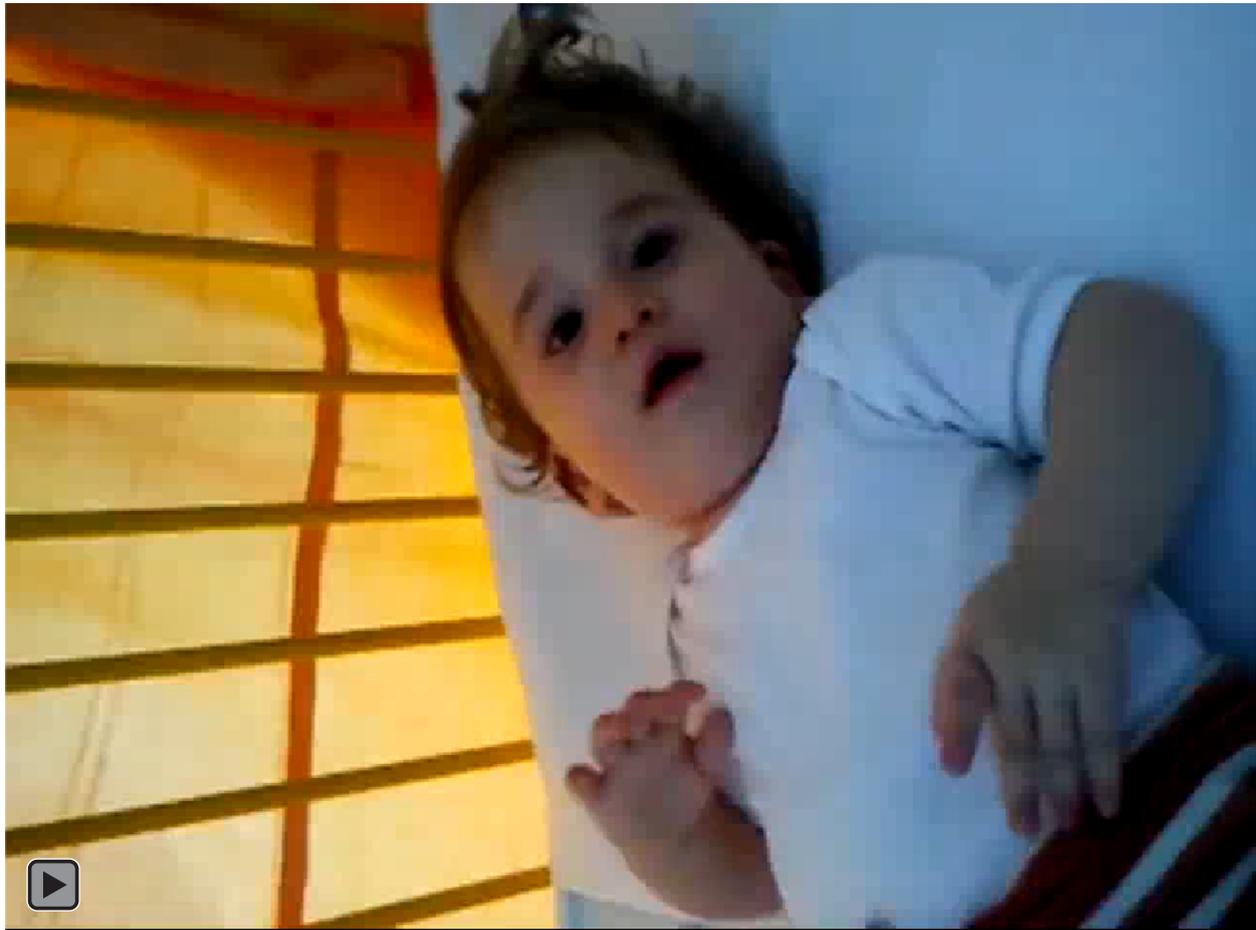
trigeminal nerve. Particular care was taken to preserve the delicate vasculature of the CNs, cerebellum, and brainstem. Neuronavigation although performed was of limited value due to gross distortion of the structures.

The postoperative course was uncomplicated. The child made a good neuropsychological progression postoperatively and was able to sit 6 weeks after surgery. He was able to walk unassisted 9 months after the intervention. Strabismus was unchanged so far. Follow-up MRI after 2.5 years demonstrated deflation of the cyst with decompression of the brainstem and regression of hydrocephalus.

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Video: Microsurgical Endoscopic-Assisted Treatment of a Large Pediatric Posterior Cranial Fossa Arachnoid Cyst