Aphonic palilalia after transient mutism following cerebellar medulloblastoma resection in a child

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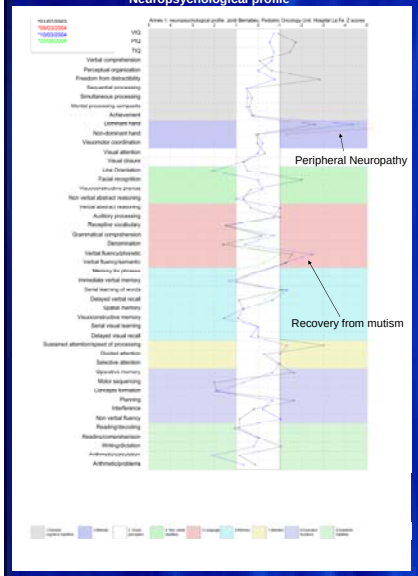
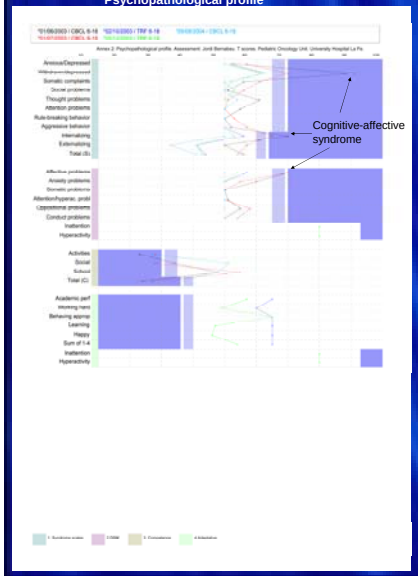
Objective: Transient mutism is a well documented phenomenon following medulloblastoma resection in children. Recovery often presents language disorders such as dysarthria, but secondary palilalia has not yet been reported.

Neuropsychological profile

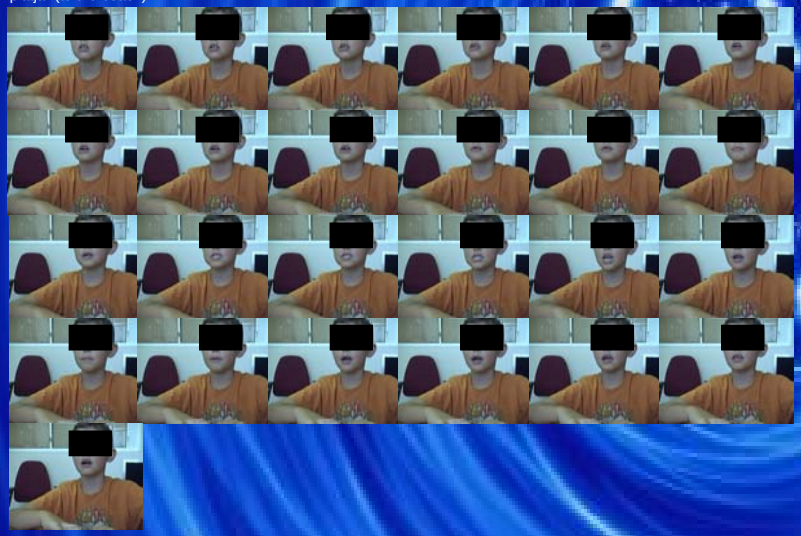


Psychopathological profile



Participants and Methods: Here we describe a case of palilalia in a 7 year-old boy who was admitted to a local hospital with a clinical history of intermittent hiccups (6 week duration) and 1- week frontal migraine and projective vomits. A cranial TC demonstrated an infratentorial tumor (vermian, 5 x 5 x 4.5 cm). Therefore, the patient was referred to our Pediatric Oncology Unit. Seven days later the child underwent radical resection.
The pathological study showed medulloblastoma. Craniospinal MRI and CSR were negative. Six weeks after surgery treatment was started according to SIOP PNET-IV, consisting of craniospinal RT (35Gy) and boost (up to 55Gy) for six weeks; simultaneously vincristin (6 doses) and maintenance therapy with Packer regimen (6-8 cycles of vincristin, BCNU and cysplatin)
Neuropsychological and neurological assessments were performed. CT, PET and MR imaging were done.

Sequence of lip and tongue movements were recorded while this child said three words in the Catalan language "a la platja" (to the beach)



Sequence of lip and tongue movements recorded while the child repeated immediately, but without sound, the same three words

Figure 1. Sagittal T2-weighted image shows an homogeneous mass arising from the inferior medullary velum and growing upward into the fourth ventricle.

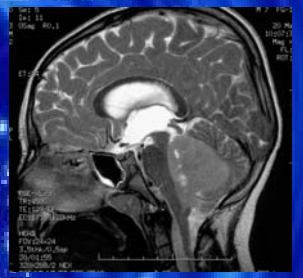


Figure 2. Axial T2-weighted image shows an homogeneous tumor mass growing in the fourth ventricle.

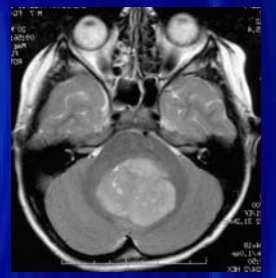


Figure 3. Axial T2-weighted image showing postoperative changes in the cerebellum and fourth ventricle. No residual tumor was evident in the study.

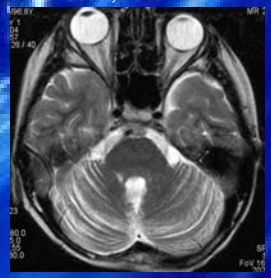
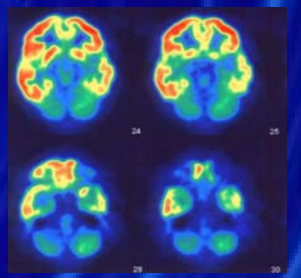


Figure 4. PET scans show decreased blood flow in the cerebellum and the temporo-occipital regions.



Results: He became mute from 5 hours to 13 days after recovering from surgery. Following the mutism episode he presented temporary dysprosody, and diminished verbal fluency which continues to date. Furthermore, we observed the well known Mutism and Subsequent Dysarthria (MSD) as well as Cognitive-Affective Cerebellar Syndrome. He was apathetic, indifferent and unable or unwilling to begin verbal and non-verbal interactions for up to two months following surgery.
Six months after diagnosis, aphonic palilalia appeared (he repeats the last spoken words with tongue and lip movements, but without sound)
PET imaging revealed bilateral temporo-occipital, cerebellar and left temporal hypometabolism. Recent standard MRI shows no pathological signs.

Conclusions: This case presents a previously non-described palilalia following medulloblastoma resection in a child. Palilalia has been reported in certain pathologies, such as Tourette and Alzheimer's disease, associated with damage to the cortico-subcortical and corticocerebellar circuitry. Although the neural mechanisms underlying aphonic palilalia remain uncertain, this case suggests a corticocerebellar implication affecting posterior cortical areas in the appearance of this rare symptom.