Unilateral abducens nerve palsy in a child with rapidly increasing head circumference

Figure Comparison of constructive interference in steady state and conventional T2 MRI of the ventral brainstem

Two consecutive constructive interference in steady state (CISS) images (A, B) clearly show cranial nerve (CN) VI bilaterally (black arrows) and the course of the right anterior inferior cerebellar artery (AICA) (white arrows), while the relationship between the R AICA and R CN VI is not visualized by conventional T2-weighted imaging (C).

A 12-month-old healthy, normally developing boy presented with rapidly increasing head circumference over 2 months and 1 week of strabismus. Head circumference was 50 cm (>99th percentile; mother = 59.5 cm; father = 56.5 cm). Examination showed limited abduction OD, overshoot of adduction OD, and no papilledema. MRI (figure) showed the right anterior inferior cerebellar artery traversing the root entry zone of the right abducens nerve, a cause of unilateral cranial nerve VI palsy recognized in adults¹ but not in children.² Neuroimaging was otherwise normal. The patient was diagnosed with benign familial macrocephaly and discharged with ophthalmology follow-up for conservative management.

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Study funding: No targeted funding reported.

Disclosure: The authors report no disclosures relevant to the manuscript.

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Neurology 2015;84;1719

DOI 10.1212/WNL.0000000000001503

This information is current as of April 20, 2015

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