

Neuroborreliosis with enhancement of the third, fifth, sixth, and twelfth cranial nerves

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A 7-year-old girl presented with a one-week history of diplopia. On examination, left abducens nerve palsy was found. There was no clinical evidence of meningitis or of involvement of cranial nerves other than the abducens nerve. C-reactive protein and white blood cell count were normal. Magnetic resonance imaging (MRI) showed enhancement of 3rd, 5th, 6th, and 12th cranial nerves (Fig. 1); there were no focal brain lesions. Lumbar puncture showed monocytic pleocytosis and increased protein. CSF-Polymerase chain reaction

was positive for *Borrelia burgdorferi* and negative for herpes simplex, varicella zoster, enterovirus and Epstein-Barr virus. Clinical improvement occurred after two weeks of intravenous treatment with Ceftriaxone 2 g per day.

To our knowledge, there is no previous report on involvement of 6th and 12th cranial nerves in neuroborreliosis. Neuroborreliosis usually involves 3rd, 5th and 7th cranial nerves (Hildenbrand *et al.*, 2009); erythema migrans is present in 89 % of children (Sood *et al.*, 2006). Our take home message is the following: as neuroborreliosis is a potentially treatable condition, this diagnosis should be considered whenever MRI shows multiple cranial nerve involvement, despite the absence of clinical or laboratory evidence of active infection and despite involvement of some of the unusually involved cranial nerves.

REFERENCES

- Hildenbrand P, Craven DE, Jones R, Nemeskal P. Lyme neuroborreliosis: manifestations of a rapidly emerging zoonosis. *AJNR Am J Neuroradiol.* 2009; 30:1079-87.
- Sood SK. What we have learned about Lyme borreliosis from studies in children. *Wien Klin Wochenschr.* 2006;118:638-42.

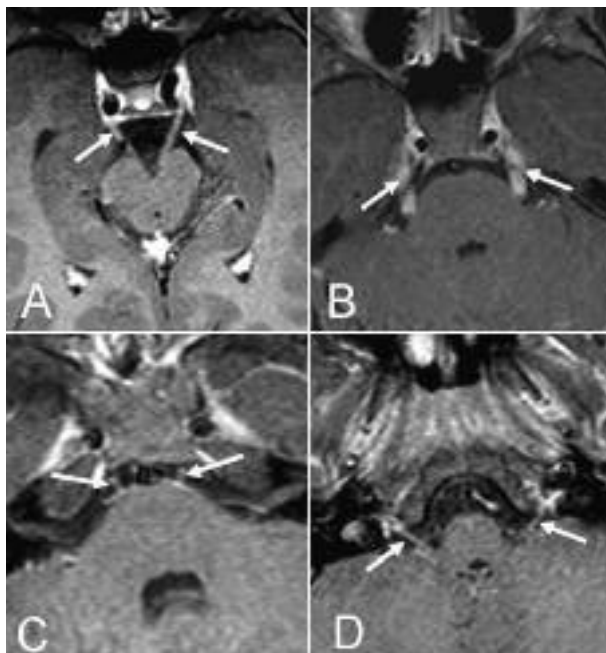


Fig. 1 (A-D). — : T1-weighted MRI showing strongly enhancing 3rd (arrows A), 5th (arrows B), 6th (arrows C), and 12th (arrows D) cranial nerves.

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