

Extensive Involvement of Multiple Cranial and Spinal Nerves in Lymphomatous Meningitis

Christian Cordano*, Bardia Nourbakhsh*, Ethan Brown, Christine Glastonbury†

Keywords: Lymphomatous meningitis, ophthalmoparesis, B-cell lymphoma

doi:10.1017/cjn.2017.50

Can J Neurol Sci. 2017; 44: 599-600

A 64-year-old woman presented with subacute progressive ophthalmoparesis and pressure-like headache, mainly in the occipital region, 6 months after being diagnosed with systemic large B-cell lymphoma and 4 weeks after finishing six cycles of cytotoxic chemotherapy and rituximab. Over the next 2 months, she developed numbness of her face and upper and lower extremities (in a dermatomal distribution). In the next several weeks, first her left arm, then her right arm and both legs became weak and she started using a wheelchair.

On neurological examination, she had a near-complete bilateral ophthalmoplegia (with relative sparing of abduction) and unreactive pupils, sensory impairment in the left V2 and V3 distribution and lower motor neuron pattern quadriparesis, with both proximal and distal involvement. Review of the brain and spinal cord magnetic resonance imaging, although reported as normal by an outside radiologist, revealed enhancement and thickening of multiple cranial nerves, bilateral cervical, and lumbar nerve roots and brachial plexi (Fig. 1). Differential diagnosis included chronic infectious versus lymphomatous meningitis.^{1,2} Nerve root thickening on the magnetic resonance imaging, however, favored a

malignant process. Examination of the cerebrospinal fluid revealed a lymphocytic pleocytosis and the presence of malignant B lymphocytes. Visualizing cranial and spinal nerve roots on the clinical magnetic resonance imaging scans are possible, and close inspection of these anatomical structures on neuroimaging can aid in narrowing down the differential diagnosis.

DISCLOSURES

The authors do not have anything to disclose.

STATEMENT OF AUTHORSHIP

CC, BN, and CG undertook study concept and design and drafting/revising the manuscript. EB revised the manuscript.

REFERENCES

1. Little JR, Dale AJ, Okazaki H. Meningeal carcinomatosis. Clinical manifestations. *Arch Neurol.* 1974;30:138-43.
2. Clarke JL. Leptomeningeal metastasis from systemic cancer". *Continuum (Minneapolis, Minn).* 2012;18:328-42.

From the Department of Neurology (CC, BN, EB), University of California San Francisco, San Francisco, California; Department of Radiology (CG), University of California San Francisco, San Francisco, California.

*CC and BN contributed equally to the manuscript.

†Asterisks have been added to authors' names and the statement of equal contribution has been revised. An erratum notice detailing this change was also published (DOI: 10.1017/cjn.2017.249).

RECEIVED JANUARY 23, 2017. DATE OF ACCEPTANCE FEBRUARY 17, 2017

Correspondence to: Christian Cordano, Department of Neurology, University of California San Francisco, 675 Nelson Rising Lane, Room 221F, San Francisco, CA 94158. Email: cordanochristian@gmail.com.

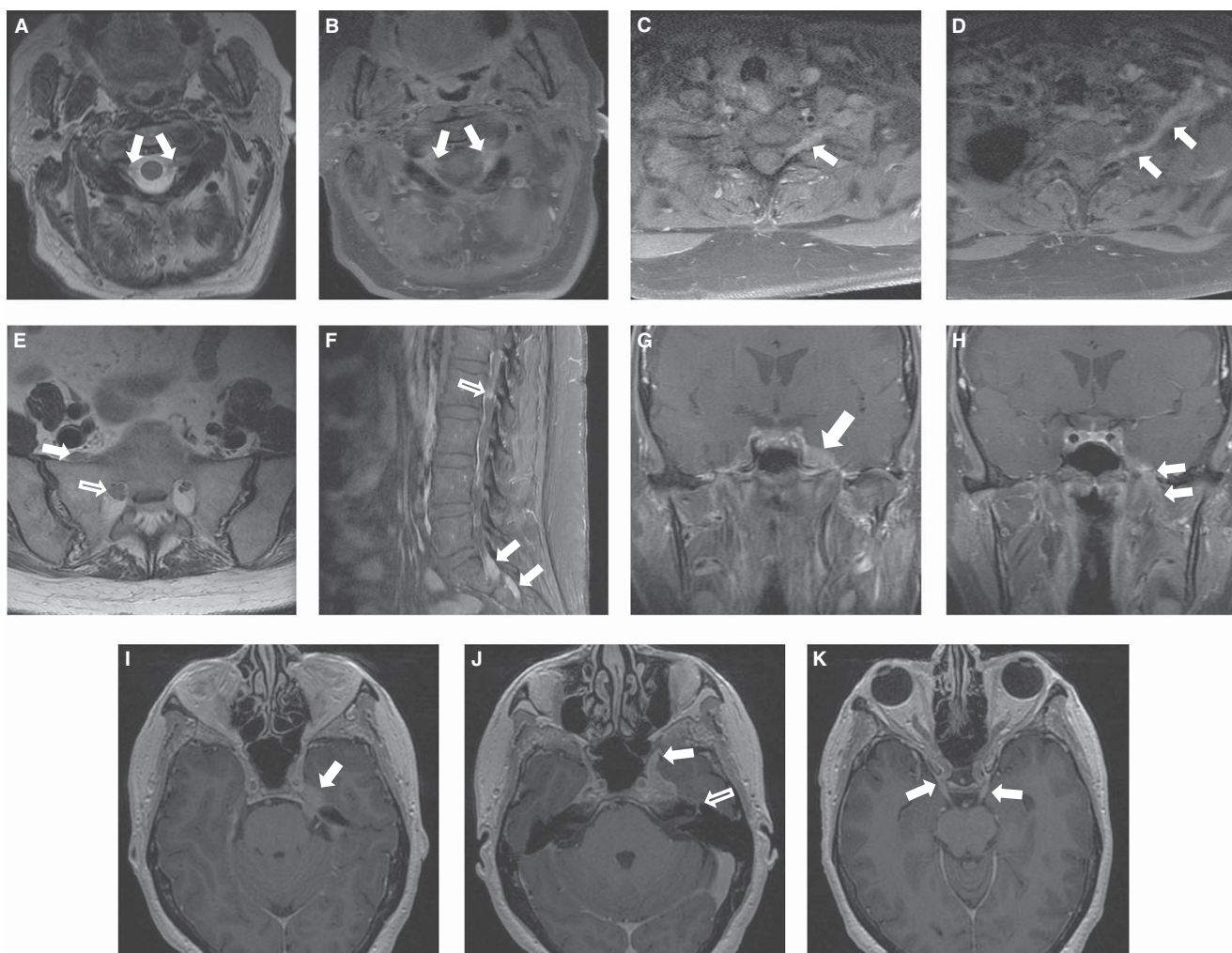


Figure 1: Axial T2-weighted magnetic resonance (MR) (A) and postgadolinium T1 fat-saturated (fatsat) images (B) show abnormal thickening and enhancement of the C2 nerve roots bilaterally (arrows). Axial postgadolinium T1 fatsat shows abnormal thickening and enhancement of the left C8 (arrow in C) and left T1 nerve root and proximal lower trunk of the brachial plexus (arrows in D). Axial T2-weighted MR image of the sacrum (E) demonstrates abnormal enlargement of the extraforaminal right L5 nerve root (arrow) and the S1 nerve root (open arrow). Sagittal T1 postgadolinium fatsat MR image (F) shows abnormal thickening and enhancement of these nerve roots (arrows). Abnormal enhancement of the right L2 nerve root is also evident (open arrow). Coronal postcontrast T1-weighted MR images demonstrate enhancing tumor distending the left Meckel cave (arrow in G), whereas there is only subtle enhancing tumor in the right side. More anteriorly, marked enhancement and thickening is noted of the left mandibular division of the trigeminal nerve as it descends through foramen ovale (arrows in H). (I) Axial postcontrast T1-weighted MR image demonstrates thick abnormal enhancement of the left cisternal segment of the trigeminal nerve extending to Meckel cave. (J) Axial postcontrast T1 more inferiorly shows tumor extending along foramen rotundum bilaterally although thicker on the left (arrow). There is also more subtle tumor spread along the greater superficial petrosal nerve to the left geniculate ganglion (open arrow). (K) Axial postcontrast T1-weighted MR image demonstrates symmetric abnormal enlargement and enhancement of the cisternal segments of the oculomotor nerves (arrows).