

Teaching NeuroImages: Optic and third cranial nerves infiltration as initial relapse of acute lymphoblastic leukemia

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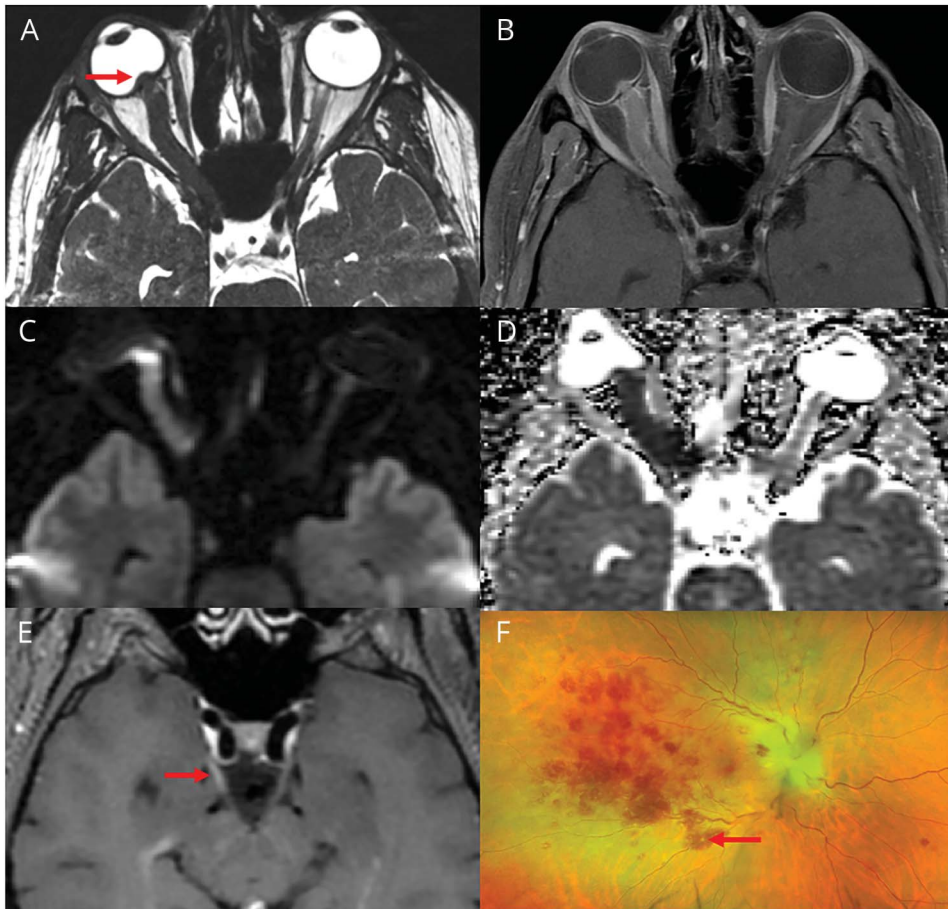
A 34-year-old man with a history of acute lymphoblastic leukemia (ALL) under consolidation treatment presented right-side blurred vision and headache associated with complete third right cranial nerve palsy. Brain MRI (figure, A–E) revealed thickening of the right optic and third nerves. Fundus examination (figure, F) found Roth spots, which are

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Figure Brain MRI and right eye fundus examination



T2 sequence (A) reveals enlargement and papillary edema (A, arrow) of the right optic nerve. Gadolinium-enhanced fat-saturated T1-weighted imaging (B and E) shows thickening and abnormal enhancement of right optic and third cranial nerves (E, arrow). The optic nerve displays diffusion hyperintensity (C) and a very low signal on apparent diffusion coefficient map (D). Roth spots are seen on fundus examination (F, arrow).

From the Service de Neuroradiologie Diagnostique et Fonctionnelle (N.S.) and Service d'Ophtalmologie (C.F., S.B.), Hôpital de la Pitié-Salpêtrière, Paris, France. Go to Neurology.org/N for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

highly suggestive of retinal leukemic infiltration.¹ Lumbar puncture revealed blast cells. Other possible differentials were excluded. The right-side headache was probably due to ischemic changes of the nerves secondary to the leukemic infiltration.

Awareness of cranial nerves involvement in ALL is important as it may be a sign of leukemia recurrence.²

Disclosure

The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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Appendix Authors

Name	Location	Role	Contribution
Natalia Shor, MD	Hôpital de la Pitié-Salpêtrière, Paris, France	Author	Acquisition and interpretation of data, drafted the manuscript for intellectual content
Christine Fardeau, MD	Hôpital de la Pitié-Salpêtrière, Paris, France	Author	Revised the manuscript for intellectual content
Sophie Bonnin, MD	Hôpital de la Pitié-Salpêtrière, Paris, France	Author	Acquisition and interpretation of data, revised the manuscript for intellectual content

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