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Worsening Floaters in a 68-Year-Old White Woman

Bradley S. Gundlach, MS; Marcel M. Maya, MD; Irena Tsui, MD

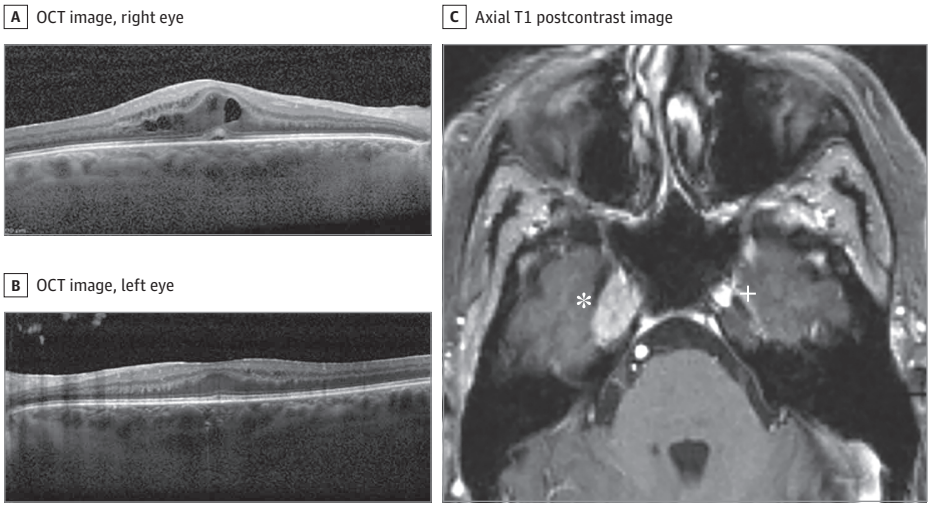

Figure. A, Optical coherence tomography (OCT) image showing the right eye had cystoid spaces in the inner nuclear, outer plexiform, and outer nuclear layers. B, OCT image showing that the left eye had trace cystoid spaces in the inner nuclear layer. C, Axial T1 postcontrast magnetic resonance image showing an enhancing mass filling and expanding the Meckel cave (asterisk). The other, normal, fluid-filled Meckel cave is noted for comparison (plus sign).

A 68-year-old white woman was referred for worsening floaters in both eyes starting 2 years before presentation. Her medical history included hypertension and right-sided trigeminal neuralgia. On examination, her visual acuity with habitual correction had decreased to 20/60 OD and 20/40 OS from 20/30 OU 2 years prior. A slitlamp examination revealed normal conjunctivae, nuclear sclerosis cataracts in both eyes, and deep and quiet anterior chambers. On a dilated fundus examination, there was 2+ vitreous cell and floaters in both eyes and a blonde fundus in both eyes. Optical coherence tomography imaging confirmed cystoid macular edema (CME) in both eyes; the right eye had cystoid spaces in the inner nuclear, outer plexiform, and outer nuclear layers, and the left eye had small cystoid spaces in the inner nuclear layer (**Figure**, A and B). Fluorescein angiography showed leakage of the optic nerve in the right eye, with petaloid leakage in the macular right eye worse than in the left eye. A uveitis workup had unremarkable or negative results for a basic metabolic panel, a complete blood cell count with a differential, Quantiferon gold test, Lyme antibody tests, an angiotensin-converting enzyme level, a serum erythrocyte sedimentation rate, and chest radiography. Additionally, 4 months prior, the patient developed trigeminal neuralgia, with a magnetic resonance image with contrast of the brain revealing an enhancing mass in the right middle cranial fossa, extending into the Meckel cave and abutting the right trigeminal nerve (Figure, C).

WHAT WOULD YOU DO NEXT?

A. Reassure her and do nothing

B. Give an intravitreal anti-VEGF injection

C. Perform a vitrectomy with cytology and immunohistochemistry

D. Recommend a temporal craniotomy with a brain biopsy

Quiz at jamacmelookup.com

Diagnosis

Sarcoid uveitis with neurosarcoidosis

What to Do Next

C. Perform a vitrectomy with cytology and immunohistochemistry

Discussion

The differential diagnosis in this older woman with intermediate uveitis and negative bloodwork results includes intraocular lymphoma, sarcoid uveitis, and pars planitis. The patient's age is inconsistent with pars planitis, which is a diagnosis of exclusion. Because

the differential diagnosis includes malignant and vision-threatening conditions, further workup is required, eliminating a conservative approach (choice A). Anti–vascular endothelial growth factor (VEGF) injection is also not an appropriate treatment without a VEGF-mediated process, such as diabetic retinopathy or retinal vein occlusion (choice B). Given the patient's age and concurrent intracranial lesion, primary intraocular lymphoma (PIOL) must be ruled out through a diagnostic vitrectomy with cytology and immunohistochemistry (choice C). In this patient, cytology and immunohistochemistry had negative results for intraocular lymphoma. Six months later, a temporal craniotomy with a biopsy (choice D) was performed because of worsening trigeminal neuralgia, with pathology demonstrating noncaseating granulomatous lesions consistent with neurosarcoidosis. Although the biopsy was eventually performed because of worsening trigeminal neuralgia, the procedure's inherent risks preclude it as a first-line diagnostic procedure for uveitis. Therefore, a diagnostic vitrectomy was the appropriate next step at the time of intermediate uveitis presentation.

Primary intraocular lymphoma has been characterized as a masquerade syndrome because of its challenging diagnosis. This patient's presentation was concerning for PIOL because of long-term vitreous cells in both eyes and an existing brain lesion. Primary central nervous system lymphoma presents with PIOL in up to 25% of cases, and patients diagnosed with PIOL develop central nervous system disease in up to 80% of cases.[1] The gold standard for diagnosis of PIOL is vitreous cytopathology, with 1 study[2] of 217 patients finding detection rates of 44.5% for malignant cytology and 90% for an interleukin 10:interleukin 6 ratio greater than 1.0. Additionally, optical coherence tomography may demonstrate granular subretinal lesions, while fluorescein angiography may demonstrate granular hyperfluorescence or a leopard-spot pattern of hypofluorescence.[3] The patient in our study presented with CME in both eyes; a study[4] of 17 patients found CME was associated with treated PIOL and attributable to radiation or prior intraocular surgery but found no cases of PIOL-associated CME without prior treatment or intraocular surgery. Thus, in this case, the lack of intraocular surgery and negative cytology and immunohistochemistry findings likely excludes PIOL. Of note, PIOL may respond to steroids prescribed for uveitis of other causative mechanisms; thus, this response may lead to delayed diagnosis and should not be used to rule out PIOL.[5]

In this patient with brain biopsy–confirmed neurosarcoidosis, chest radiography (60% sensitivity), the serum angiotensin-converting enzyme level (35% sensitivity), and the serum erythrocyte sedimentation rate (32% sensitivity) were all normal.[6] The patient did not have lymphopenia or endorse other commonly associated systemic symptoms, such as fatigue, weight loss, or lymphadenopathy. The patient also did not have anterior uveitis, which occurs in more than 70% of cases of ocular sarcoidosis.[7] In the US, sarcoidosis is classically associated with African American individuals, who are at roughly 3 times greater risk of developing the disease than white individuals.[8] However, worldwide, Northern European individuals, such as this patient, have the highest incidence of sarcoidosis.[9] Although clinical manifestations of neurosarcoidosis are heterogeneous and can affect cranial nerves, spinal cord, meninges, brain, and peripheral nerves, facial nerves are most commonly affected, as in this patient.[10] Initial treatment is typically oral prednisone, but cases often require escalation to second-line (methotrexate) and third-line (infliximab) treatments. Notably, facial nerve paralysis often responds to steroid monotherapy, whereas other manifestations require more aggressive treatment.[10]

Patient Outcome

During the initial vitrectomy, intravitreal triamcinolone was given, with resolution of CME at 1 month postsurgery. Surgical debulking of the lesion in the Meckel cave was performed in conjunction with temporal craniotomy, improving the symptoms of trigeminal neuralgia. On diagnosis of neurosarcoidosis, fluorodeoxyglucose positron emission tomography computed tomography was performed and did not reveal further organ involvement. Six months postvitrectomy, the patient's visual acuity had returned to her baseline of 20/30 OU, with complete resolution of CME.

ARTICLE INFORMATION

Author Affiliations: David Geffen School of Medicine, University of California, Los Angeles, Los Angeles (Gundlach); Department of Imaging, Cedars-Sinai Medical Center, Los Angeles, California, Los Angeles (Maya); Retina Division, Stein Eye Institute, University of California, Los Angeles, Los Angeles (Tsui); Doheny Eye Institute, University of California, Los Angeles, Los Angeles (Tsui).

Corresponding Author: Irena Tsui, MD, Retina Division, Stein Eye Institute, University of California, Los Angeles, 200 Stein Plaza, Los Angeles, CA 90095 (itsui@jsei.ucla.edu).

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