Anterior Ophthalmomyiasis Interna: An Ophthalmic Emergency

Ophthalmomyiasis is the infestation of the eye by the larval form (maggots) of flies of the order Diptera. Involvement may include eyelids and conjunctiva (ophthalmomyiasis externa), or the larva may invade inside the eye (ophthalmomyiasis interna). Ophthalmomyiasis interna may be further subdivided into anterior and posterior based on the larva being in the anterior or posterior segment of the eye, respectively. However, posterior migration of an anterior larva has been previously reported and also occurred in our patient. Unpredictable behavior of the larva inside the eye results in difficulty in making treatment decisions.

Report of a Case. A 12-year-old boy had redness and mild pain in his left eye for the past 8 days. At initial examination, visual acuity was 20/20 OD and 20/25 OS. Examination results of the right eye were unremarkable, whereas the left eye showed mild ciliary injection, deep anterior chamber with 2+ cells, and a white 6-mm larva attached to the iris at the 11-o’clock position. No entry site was found. Direct ophthalmoscopy through the undilated pupil showed a normal retina. Three hours later while the patient was being prepared for surgery, the larva left the anterior chamber. Careful examination showed a full-thickness hole (iridotomy) in the peripheral iris produced by the larva, through which it had migrated posteriorly between the iris and zonulae. The patient was closely followed up for emergency removal of the larva in case of remigration of the larva into the anterior chamber. Two days later, the larva moved into the vitreous cavity and floated freely (Figure 2). After 3 days, it was very close to the retina and produced retinal hemorrhages. Pars plana deep vitrectomy was performed and the larva was removed completely and sent in normal saline for parasitologic studies. Three days later, the patient developed retinal detachment and underwent another surgery to reattach the retina. Parasitologic studies showed a stage 1 larva belonging to blowflies (Diptera: Calliphoridae). After 6 months, the retina was attached and best-corrected visual acuity was 20/200 due to posterior subcapsular cataract.

Comment. Ophthalmomyiasis interna is a rare disease caused by larvae of Diptera flies. These larvae penetrate the sclera and migrate into the eye. However, the entry site is usually not apparent. In most cases the larvae are found in the posterior segment appearing as posterior uveitis, retinal detachment, and subretinal migratory tracks. Anterior ophthalmomyiasis interna is less common and appears clinically as anterior uveitis. Usually there is only 1 larva inside the eye; however, 2 larvae in the same eye and bilateral involvement have also been reported.

Prognosis of vision in these patients varies greatly. The causes of decreased vision in patients with ophthalmomyiasis interna include uveitis, subretinal migratory track crossing the macula, retinal detachment, retinal and vitreous hemorrhage, invasion to the optic nerve, and re-
sulting optic atrophy.\(^1,2\) Early removal of larvae decreases the potential of vision loss.\(^1\) However, the decision to remove the larva must be made on an individual basis. For a mobile subretinal larva, argon laser photoacoagulation has been recommended, obviating the need for deep vitrectomy.\(^1\) For an immobile subretinal larva with scar tissue, no treatment is needed.\(^3\) In the case of retinal damage, the subretinal larva is best removed by pars plana vitrectomy and retinotomy.\(^1,5\) Because of the unpredictable behavior of larva inside the eye and potential complications of vitreoretinal surgery, we recommend dealing with the anterior chamber larva emergently and removing it through a limbal incision as soon as possible to prevent posterior migration. Additionally, it is recommended not to use pilocarpine to constrict the pupil as it may cause moving and posterior migration of the larva.\(^3\)

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COMMENTS AND OPINIONS

Magnetic Resonance Imaging Changes Associated With Transient Homonymous Hemianopia in Patients With Nonketotic Hyperglycemia

The article by Taban et al\(^1\) is both important and interesting; it is important because the condition is not as rare as the authors lead us to believe,\(^2,5\) and interesting because their patient’s magnetic resonance image (MRI) was reported as normal, which has not been our experience.\(^2\)

We would be most interested in seeing the images, which were not published. In our experience most patients with nonketotic hyperglycemic hemianopia have abnormal MRI findings,\(^2\) though they are sometimes quite subtle and often missed. One of us (P.L.) reported 4 patients with reversible homonymous hemianopias and reversible MRI abnormalities attributed to nonketotic hyperglycemia (NKH).\(^2\) In 3 patients the findings were subtle and overlooked initially by radiologists. The most obvious findings\(^2\) were decreased T2 signal of the white matter, subtle gyral swelling, enhancement of the overlying meninges, and restricted diffusion, predominantly in the posterior hemisphere opposite the hemianopia.

Even if the patient described by Taban and colleagues had a normal MRI, it is important to be aware of the potential, now well-described, changes\(^2,4\); they may be a safety net when the disorder is not diagnosed initially. Nonketotic hyperglycemia is a treatable condition, but with significant morbidity and mortality. In an emergency department NKH may be diagnosed fortuitously by routine blood tests. However, in an outpatient setting where such tests are not routine, NKH should be considered in the differential diagnosis of an unexplained recent hemianopia or other unusual visual symptoms. Such patients may arrive with an MRI in hand; 2 of the 4 patients in Lavin’s article came to our outpatient clinic.

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We would like to thank Lavin and Donahue for their interest in our article.\(^1\) They suggest that we performed an incomplete literature review by citing 4 references.\(^2,5\) Unbeknownst to Lavin and Donahue, our manuscript was submitted to the journal in May 2005 and accepted for publication Sept 7, 2005. We were unaware of 2 of their references because they had not been published at the time of our submission.\(^2,3\) Neither the article nor the journal, Neuroophthalmology, appears in either PubMed or Ovid searches for 1 reference.\(^4\)

Our patient experienced isolated homonymous hemianopia and hallucinations.\(^1\) We reviewed the films carefully along with the neuroradiologist and the T1 postcontrast, diffusion weighted, and T2-weighted images were all normal. Freedman and Polepalle\(^6\) reported a patient with isolated visual symptoms who also had a completely normal MRI. Lavin and Donahue refer to patients who did not have isolated visual symptoms. These patients had accompanying

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