

As has been reported in other cases of BDUMP,^{1,5} our patient had circulating antiretinal autoantibodies. The significance of our patient's 33- and 34-kDa retinal proteins to which these autoantibodies react is not known. Much is still to be learned in the field of antiretinal autoantibodies, but this raises the possibilities that patients with BDUMP can have such antibodies and that these antibodies may be at least partially responsible for the loss of photoreceptors.⁴

In our patient, we believe that a circulating growth factor or antibody may have been responsible for stimulation of the pathologic changes noted in BDUMP. This notion is supported by the return of good visual acuity, resolution of subretinal fluid, and decreased choroidal thickening during plasmapheresis treatments and also by the recurrence of these abnormalities with cessation of plasmapheresis.

We report a new treatment modality that has the potential to improve and stabilize vision in a disease that results in bilateral vision loss preceding death in patients with systemic malignancy. Plasmapheresis should be considered in patients with BDUMP.

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Financial Disclosure: None reported.

Funding/Support: This work was supported in part by an unrestricted grant from Research to Prevent Blind-

ness and grant EY13053 from the National Institutes of Health.

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Eosinophilic Variant of Wegener Granulomatosis in the Orbit

Wegener granulomatosis (WG) is a multisystem vasculitis of unknown etiology that preferentially involves small to medium-sized vessels, with a peak incidence in the fifth decade of life.^{1,2} The typical histologic triad described in WG consists of tissue necrosis, vasculitis, and granulomatous inflammation. Although mild eosinophilia has been reported in WG, significant eosinophilia is rare. The eosinophilic variant is a clinical and histologic variant characterized by significant tissue eosinophilia that is clinically consistent with WG in the absence of asthma or atopy.³⁻⁶ We describe an eosinophilic variant of WG occurring in the orbit in association with local IgE production.

Report of a Case. An 84-year-old woman had a 2-month history of left ptosis, painless proptosis, and binocular vertical diplopia. Magnetic resonance imaging identified a 2.5 × 2.5 × 1.5-cm left inferomedial orbital mass. An incisional biopsy suggested the diagnosis of eosinophilic angiocentric fibrosis, and she was referred for further management.

Clinically, her visual acuity was 20/40 OU. Orbital examination revealed a left ptosis with 2.5 mm of relative proptosis, 15 prism diopters of left hypertropia with decreased depression, and a left lower eyelid ectropion (**Figure 1A**).

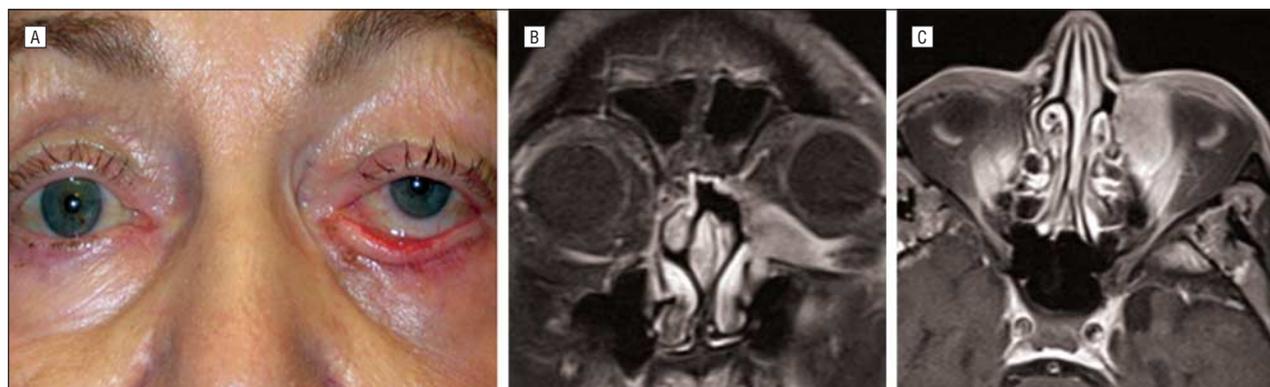


Figure 1. Clinical photograph and magnetic resonance images. A, Clinical photograph shows hypertropia and lower eyelid ectropion of the left eye. Coronal (B) and axial (C) T1-weighted magnetic resonance imaging with fat suppression demonstrates a left inferomedial orbital mass involving the orbital floor and inferior rectus, with extension into the area of the nasolacrimal fossae.

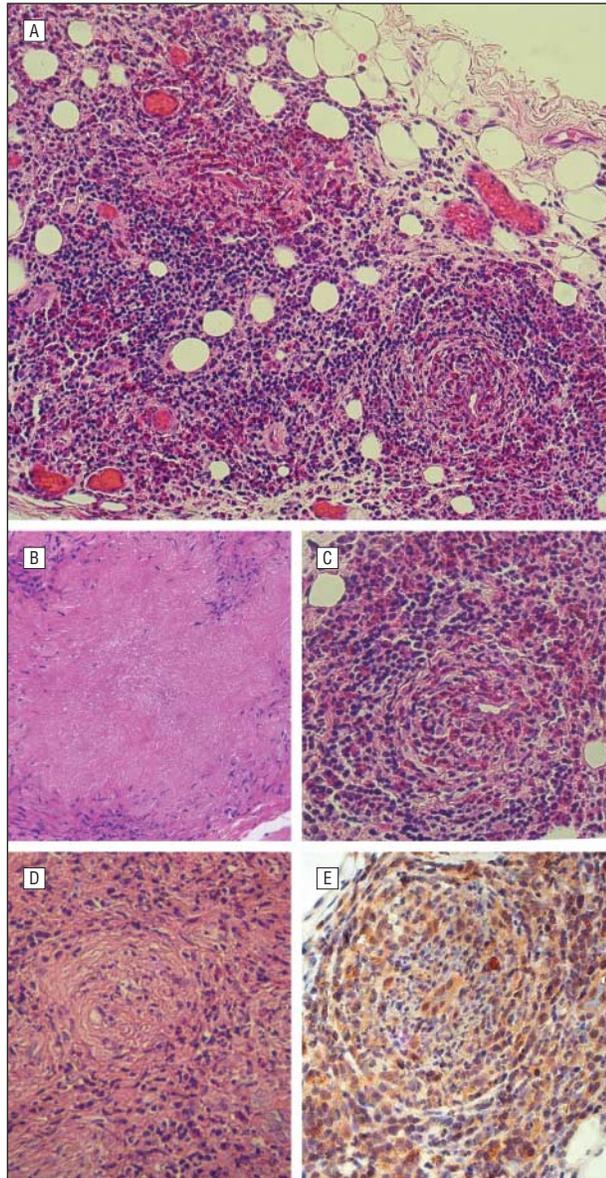


Figure 2. Histologic analysis shows granulomatous inflammation (hematoxylin-eosin, original magnification $\times 20$) (A), necrosis (hematoxylin-eosin, original magnification $\times 40$) (B), and vasculitis (hematoxylin-eosin, original magnification $\times 40$) (C and D), which are consistent with Wegener granulomatosis, with striking tissue eosinophilia (A and C). E, Immunohistochemistry demonstrates strongly positive IgE plasma cells (original magnification $\times 40$).

She had no history of atopy or asthma, sinonasal disease, respiratory disease, or renal disease. Antineutrophil cytoplasmic antigen antibodies were negative.

Follow-up magnetic resonance imaging demonstrated interval recurrence (Figure 1B and C), and another incisional biopsy was performed. Histologic analysis revealed granulomatous inflammation (Figure 2A), with areas of vasculitis and a prominent perivascular hyalinization (Figure 2D). Significant eosinophilia was also seen (Figure 2A and C). Serial sections revealed a focal area of necrosis (Figure 2B). Acid-fast bacteria and Gomori methenamine silver stains were negative. Immunohistochemistry revealed a striking IgE staining of the plasma cells (Figure 2E). The diagnosis of an eosino-

philic variant of WG was made based on clinical history and histologic findings.

Comment. Eosinophilic WG is characterized by systemic WG with lung and renal disease and histologic findings consistent with WG but with additional peripheral and/or tissue eosinophilia in the absence of asthma or atopy.³⁻⁶ This variant is rare, and no ophthalmic involvement has been reported to our knowledge. However, other causes of eosinophilia must be excluded before this diagnosis is made.³⁻⁶ Wegener granulomatosis and Churg-Strauss syndrome are closely related antineutrophil cytoplasmic antigen–positive vasculitides.³⁻⁶ Churg-Strauss syndrome is typically associated with tissue eosinophilia and vasculitis but is differentiated from eosinophilic WG by the clinical history of atopy or asthma. Asthma and atopy are rare in WG, occurring no more frequently than in the general population.⁶ Eosinophilic angiocentric fibrosis is a rare inflammatory disease involving the sinonasal tract with tissue eosinophilia and distinctive perivascular fibrosis. It is differentiated from eosinophilic WG by the absence of necrosis. Fungal and parasitic infections can be excluded by histopathologic analysis and tissue cultures.⁶ Management of eosinophilic WG does not differ from that of systemic or limited WG, although the prognosis is variable.³⁻⁵

Our case revealed the typical features seen in WG: focal necrosis, granulomatous inflammation, and vasculitis. In addition, marked infiltration of eosinophils was seen. Limited ophthalmic WG occurs in 50% of patients and may represent the first sign of systemic WG in 16% of cases.^{1,2} Ophthalmic manifestations include conjunctivitis, uveitis, and orbital inflammation.¹ Results of serological testing for antineutrophil cytoplasmic antigen are positive in 96% of patients with systemic WG; however, in limited WG, this decreases to 32% to 67%.^{1,2} Hence, a negative result for antineutrophil cytoplasmic antigen does not exclude the diagnosis.^{1,2}

Elevated local IgE is unusual in WG.^{3,4} The role of eosinophilia and IgE in WG is unknown, and both are traditionally associated with atopy. However, in the absence of atopy, this striking presence of local IgE production and eosinophilia may represent a local hypersensitivity reaction toward an unrecognized extrinsic allergen as the underlying pathogenesis of this disease.

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Financial Disclosure: None reported.

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COMMENTS AND OPINIONS

Occlusion vs Acupuncture for Treating Amblyopia

In a recent article, Zhao and colleagues¹ undertook a study in which they compared standard occlusion therapy for 2 hours per day to acupuncture for older children with amblyopia. As the Program Director of the Ohio Amblyope Registry, the first and only statewide program for children with amblyopia and their families, I found the research to be interesting, but limited.

The acupuncture therapy involved 5 sessions per week for 25 weeks in which needles were inserted at 5 locations (acupoints) including the top of the head, the left and right sides of an eye, a hand, and a lower leg for a total of 625 needle insertions. Needles were twisted after insertion and left in place for 15 minutes. Some of the needle insertions were one-half to three-fourths inches deep (LI4, BL59). Acupuncture and occlusion were assessed after 15 weeks as an outcome measure. The authors report that visual acuity in the amblyopic eye improved 1.83 lines in the occlusion group and 2.27 lines in the acupuncture group, which they stated as being equivalent.

Concerns with the study include the following:

The authors used cloth patches for occluding the dominant eye in the amblyopic children. It is well known that children will peek around cloth patches, thus reducing the effectiveness of occlusion therapy. As a consequence, the authors used an occlusion strategy that would minimize the effectiveness of occlusion therapy.

As with any test, patient motivation has a significant effect on outcome. In this case, the children in the acupuncture group were being stuck by 5 needles per day, 5 days a week, for 25 weeks (a total of 125 office visits and a total of 625 needle insertions). Children in the acupuncture group would have been motivated to do their best on the visual acuity test compared with the children who just wore a cloth patch. Thus, patient motivation for doing their best on the visual acuity test was not the same between groups, a confound of the study.

The authors used the 15-week session in a 25-week study as the end point for analysis and stated that "... we chose the 15-week point as the primary outcome because VA (visual acuity) is expected to have stabilized

in most patients at around this period." However, therapy was undertaken for 25 weeks. As a consequence, children in the acupuncture group were subjected to continued uncomfortable acupuncture treatment, a total of 250 additional needle insertions, some one-half to three-fourths inches deep, without apparent reason or benefit. It appears that the authors planned for a 25-week trial a priori, but used the 15-week session for end point analysis post hoc possibly based on data analysis and outcome. The authors provided no rationale for undertaking 10 additional weeks of treatment.

In clinical trials such as this one, control groups are important to determine whether a particular therapy really has an effect beyond the placebo effect. While the study authors compared acupuncture with part-time occlusion therapy, the study did not have a control group of children who took the repeated visual acuity tests without any therapy except optical correction. Thus, without a proper visual acuity control group, we really don't know if either therapy was better than doing nothing (except measuring visual acuity repeatedly over the course of 15 or 25 weeks).

There was also no acupoint control group. Acupuncture is based on placement of needles at specific locations on the body. Indeed, the authors have patented the acupoints used in the study for the treatment of vision disorders. Having needles placed at other points on the body that are not these specific acupoints would serve as a strong acupoint control group. This was not done in the study. Thus, it remains possible the inserting needles anywhere on the body could yield the same results. Indeed, the acupoint control group is extremely important and would address the criticism related to motivation in the study. With an acupoint control group, pain in both acupoint and sham groups would be the same, as would motivation. If motivation and learning effects were significant parts of the study, the expected outcome would be that the acupoints used and sham acupoints would result in the same outcome. The authors did not provide an adequate reason for not using a sham acupoint control group in the study.

The authors argued that visual acuity outcomes for the occlusion therapy and acupuncture therapy were equivalent. However, they also showed, statistically, that acupuncture resulted in greater improvement in visual acuity than occlusion therapy. Although the authors emphasized that the 2 treatments were equivalent, as noted in the abstract, acupuncture was superior to occlusion in terms of improvement of visual acuity in the amblyopic eye (occlusion, 1.83 lines vs acupuncture, 2.27 lines; $P=.03$) and resolution of amblyopia (occlusion, 16.7% vs acupuncture, 41.5%; $P=.01$).

The acupuncture group had 76 office visits, while the occlusion therapy group had only 4 office visits from the baseline visit to the 15-week session that was used for end point analysis; the acupuncture group visited at baseline and 5 days per week for 15 weeks; the occlusion group visited at baseline and at 5, 10, and 15 weeks. Numerous factors come into play when there is such a large difference between groups. A properly controlled study would have equated the number of office visits between groups. This is another confound of the study.