membrane from amniotic fluid in utero is the source of our findings.

Eyedrops containing substance P and insulinlike growth factor have been tried with some success in therapy for nonhealing neurotrophic corneal ulcers. Substance P and insulinlike growth factor are believed to act synergistically in promoting corneal epithelial proliferation.[4,5] Our positive identification of substance P in amniotic membrane may offer further insights into its mode of action in healing the ocular surface. Tseng et al[6] investigated 31 eyes of 26 patients with cytologically proven limbal deficiency who received amniotic membrane transplants, and all showed rapid epithelialization and reduced inflammation except for the 2 eyes with atopy. It has been our clinical observation that some atopic patients can experience unexplained ocular surface irritation following treatment with amniotic membrane. Substance P is known to degranulate mast cells.[1] We wonder whether substance P released by amniotic membrane could provide a partial explanation for this phenomenon in atopic individuals and could have contributed to the failure of treatment in the 2 patients of Tseng and colleagues.

We have demonstrated that substance P is present in very high concentrations in amniotic membrane. Further study to identify the hitherto unrealized substances involved in the scavenging of damaging agents by amniotic membrane may permit development of specific topical preparations to treat the ocular surface.

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Epstein-Barr Virus–Positive T-Cell Lymphoma Involving the Lacrimal Gland of an Adult

Systemic T-cell lymphomas metastatic to the orbit are much rarer than non-Hodgkin B-cell neoplasms (predominantly marginal zone and follicular).[1] We describe an adult with an Epstein-Barr virus (EBV)–positive T-cell lymphoma of the lacrimal gland associated with multiorgan disease that was not of the expected natural killer/T-cell subtype.[2] Because of the unusual clinical findings and imaging study results, the diagnosis was elusive. A lacrimal biopsy evaluated with an EBV probe established the correct diagnosis; this technique should probably be used for all unusual or atypical orbital lymphomas.

Report of a Case. A 57-year-old man developed abrupt right eye swelling and erythema with chemosis that worsened over 6 days and was nonresponsive to intravenous antibiotics (**Figure 1**A). He had had a febrile illness with fatigue for 4 years. Earlier lung, liver, and bone marrow biopsies revealed an EBV-positive T-cell lymphoma with a clonal rearrangement of the T-cell receptor gene. Visual acuity was 20/20 OU. The motility was moderately decreased and there was no proptosis. Magnetic resonance imaging showed enlargement of the lacrimal gland on the right side with a nonenhancing center (Figure 1A) and bilateral involvement of the extraocular muscles (Figure 1B). Biopsy of the periorbita (Figure 1C) and lacrimal gland (Figure 1D) showed chronic inflammation with necrosis (Figure 1C and D) and scattered larger cells with ground-glass nuclei (Figure 1C). The lymphocytes were positive for CD3 and CD5 (**Figure 2**A) and negative for CD56; there were rare CD20-positive cells. Brown-Hopps, Steiner, and Gomori methenamine silver stains disclosed no organisms. In situ hybridization with an EBV probe demonstrated marked positivity in the lymphocytes in both the periorbita and lacrimal gland (Figure 2B). The lung biopsy showed a striking perivascular lymphocytic distribution (Figure 2C) with identical immunohistochemical and EBV-positive (Figure 2D) findings. Radiotherapy delivered to both orbits caused complete resolution of the patient's symptoms, and he has recently received an allogenic bone marrow transplant.

Comment. Ascending ductular and hematogenous infections of the lacrimal gland are vanishingly rare. Our patient's orbital "cellulitis" with lacrimal gland cavitation and no response to antibiotic therapy was confusing. The biopsy revealed necrosis of the lacrimal gland (probably at the margins of a sterile abscess) and the profuse presence of CD3- and CD5-positive T lymphocytes that were CD56 negative, thereby ruling out a natural killer/T-cell lymphoma. The number of T cells was much greater than that normally expected in the gland,[3] and in situ hybridization established T-cell EBV positivity.

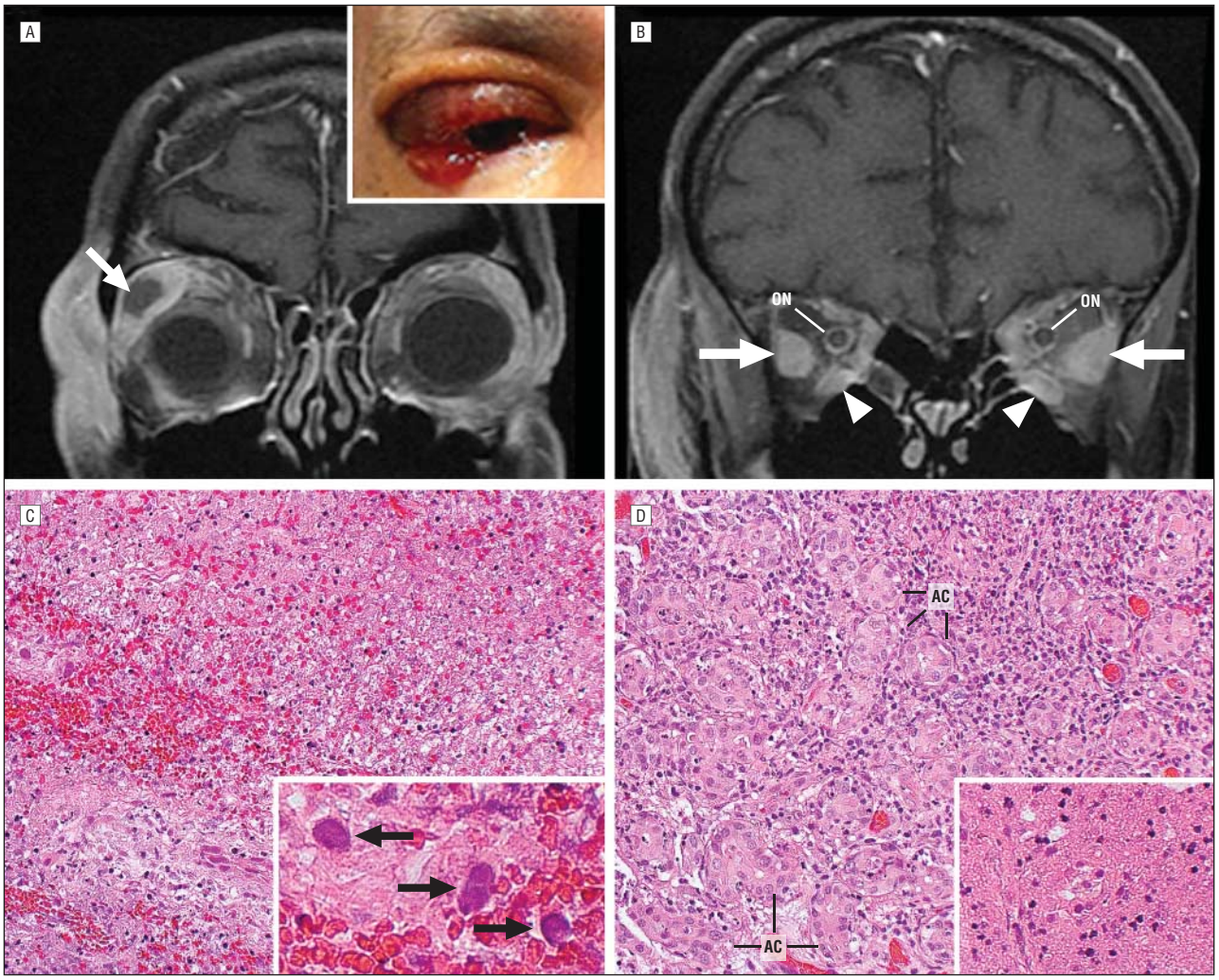

Figure 1. Magnetic resonance imaging, clinical, and biopsy findings. A, Coronal projection of a magnetic resonance imaging scan reveals a large area of central lucency (arrow) in an enlarged lacrimal gland, consistent with extensive necrosis or a sterile abscess. Inset, Swollen, erythematous right upper eyelid with prolapse of the chemotic conjunctiva. B, Swelling is present bilaterally and more posteriorly in the orbit's lateral rectus muscle (arrows) and inferior rectus muscle (arrowheads). The optic nerves (ON) are not compressed. C, Focal hemorrhagic necrosis in the periorbita (hematoxylin-eosin, original magnification ×100). Inset, Large nuclei with a ground-glass characteristic (arrows) suggestive of viral infection (hematoxylin-eosin, original magnification ×400). D, Abundant inflammatory cells are present between the acini (AC) of the lacrimal gland (hematoxylin-eosin, original magnification ×100). Inset, Focus of granular necrosis of the lacrimal parenchyma (hematoxylin-eosin, original magnification ×100).

The liver biopsy had disclosed that the lymphocytic infiltrate showed a monoclonal T-cell receptor gene rearrangement, rendering the condition a true lymphoma rather than a lymphoproliferative disorder. Angiodestruction and necrosis frequently accompany EBV-induced lymphoproliferations by means of locally released chemokines[4]; an open lung biopsy displayed a prominent tendency for vascular cuffing by EBV-positive T cells. The multisystem involvement of lung, liver, and bone marrow and the favorable response to bilateral orbital radiotherapy support the neoplastic character of the condition.

The closest analog to the current lesion is the T-cell lymphoproliferative disorder of childhood without a known clonal rearrangement.[5,6] To our knowledge, our case is the first orbital example of an EBV-positive monoclonal T-cell lymphoma not of the natural killer/T-cell subtype in an adult.[7] The EBV-positive lymphomas of the orbit have mostly, but not exclusively, been B-cell neoplasms such as Burkitt lymphoma, lymphomatoid granulomatosis, and AIDS-associated and posttransplantation lymphomas.[4,8,9] Orbital natural killer/T-cell lymphoma (CD3, CD5, and CD56 positive) with EBV infection can also cause a clinical inflammatory picture.[10]

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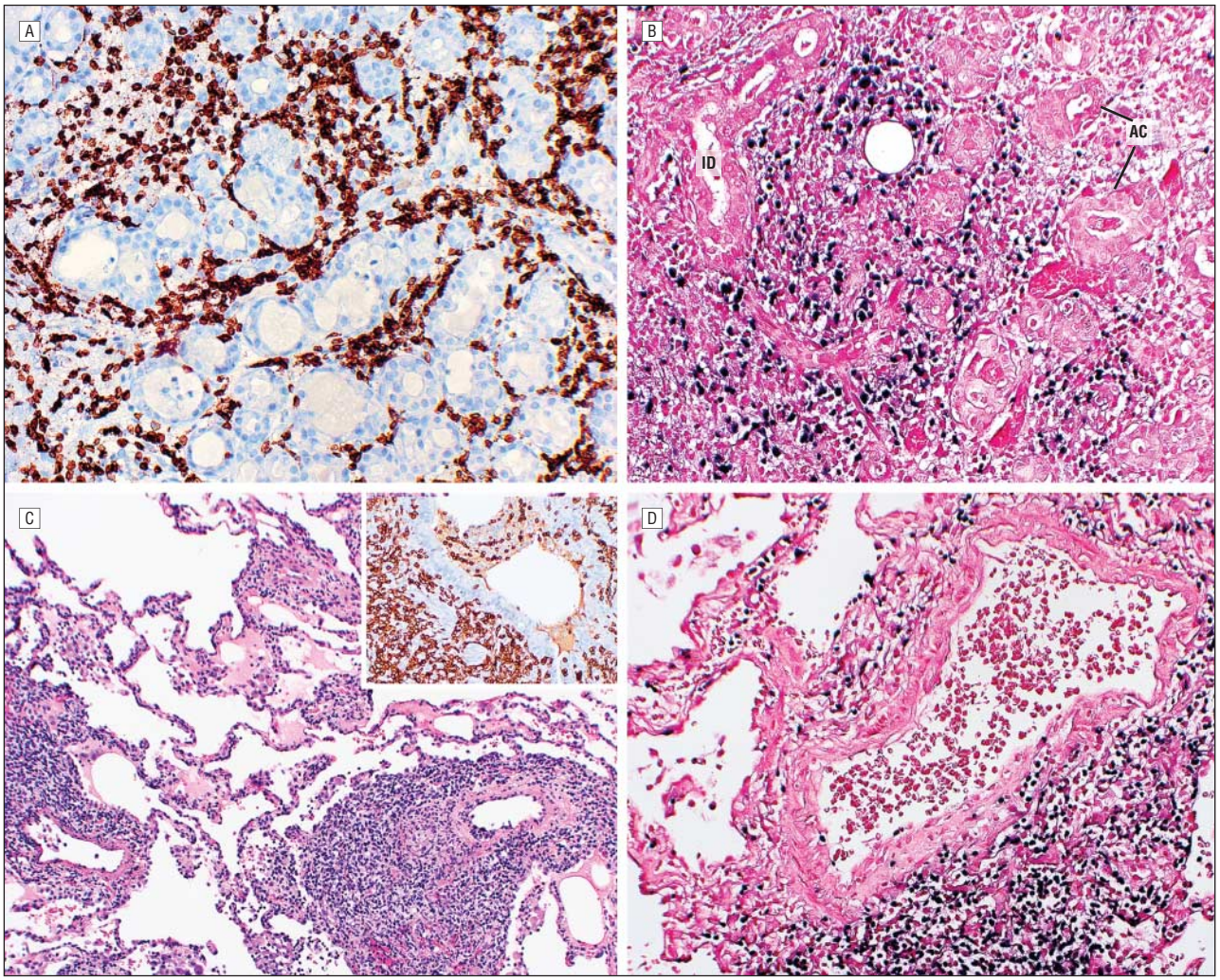

Figure 2. Histopathologic findings. A, In the lacrimal gland, the CD3-positive T-lymphocytic population is intense (immunoperoxidase reaction, toluidine blue with diaminobenzidine chromogen, original magnification ×200). B, Plentiful Epstein-Barr virus–positive T lymphocytes are located between the acini (AC) of the lacrimal gland parenchyma (in situ hybridization with Epstein-Barr virus probe, original magnification ×100). ID indicates intralobular duct. C, The lung biopsy manifests a lymphocytic infiltrate with striking perivascular cuffing toward the bottom right (hematoxylin-eosin, original magnification ×25). Inset, The cells are shown to be CD3-positive T lymphocytes (immunoperoxidase reaction, toluidine blue with diaminobenzidine chromogen, original magnification ×100). D, Epstein-Barr virus–positive lymphocytes are responsible for the perivascular lung infiltrate (in situ hybridization with Epstein-Barr virus probe, original magnification ×100).

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Treatment of Congenital Cytomegalovirus Retinitis With Intravitreous Ganciclovir

Cytomegalovirus (CMV) is the most common infectious congenital syndrome worldwide, occurring in 0.2% to 2.4% of all live births.[1] While most newborns with congenital CMV are asymptomatic, long-term complications can include deafness, mental retardation, and vision loss.[2] Active congenital ocular disease is rare, and systemic treatment is controversial. Herein, we describe a newborn with active CMV retinitis and optic neuritis for whom systemic treatment was withheld owing to risk of toxic effects. Faced with this dilemma, we