

Table. Spontaneous Improvement of Visual Acuity in Worse-Seeing Eyes of Patients With Bilateral Geographic Atrophy

Improvement	Patients, No. (%)	
	1-y Follow-up Data ^a (n = 50)	2-y Follow-up Data (n = 60)
Letters, No.		
≥5	8 (16)	13 (22)
≥10	3 (6)	5 (8)
≥15	2 (4)	3 (5)
Patients with ≥10-letter improvement by baseline VA		
≥20/50	0/5	0/7
20/51-20/100	0/3	0/5
20/101-20/200	1/22 (5)	2/25 (8)
<20/200	2/20 (10)	3/23 (13)

Abbreviation: VA, visual acuity.

^a The 1-year data include all patients in the 2-year cohort who had a 1-year follow-up visit.

Results | The Table presents the number of patients who had improved VA at the follow-up visit, the amount of this improvement, and the distribution of improvement as a function of baseline VA. The median baseline VA (approximate Snellen equivalent) was 20/44 for the better-seeing eyes and 20/136 for the worse-seeing eyes. At 2 years, no better-seeing eye improved by 10 or more letters, while 5 of the worse-seeing eyes improved by 10 or more letters—3 by 10 to 15 letters and 2 by 20 to 25 letters. All 5 eyes that improved had baseline VA worse than 20/100. At 1-year follow-up from baseline, 3 of these 5 eyes already had improved by 10 or more letters, and no other eyes improved to this extent at 1 year. Despite the improvement in VA, all eyes had further enlargement of GA during follow-up.

Discussion | Five (10%) of the 48 worse-seeing eyes with baseline VA worse than 20/100 improved by 10 or more letters at 2 years. No better-seeing eye improved by 10 or more letters, although only 10 better-seeing eyes had baseline VA worse than 20/100, so the significance of an eye being the better-seeing vs worse-seeing eye is uncertain. One can anticipate that a small proportion of patients with GA in a clinical trial will have spontaneous improvement in VA. Previous work has suggested that the improvement occurs in eyes without an eccentric preferred retinal locus for fixation at baseline and is associated with better use of the seeing eccentric retina by the time of follow-up.¹ These findings suggest that efforts should be made prior to starting a trial to document by microperimetry whether there is an eccentric preferred retinal locus for fixation. If the patient cannot put the object of interest (fixation cross) on the seeing retina, one could consider vision rehabilitation to optimize use of the eccentric retina prior to enrollment in a trial.⁶

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OBSERVATION

Chronic Eyelid Dermatitis Secondary to Cocamidopropyl Betaine Allergy in a Patient Using Baby Shampoo Eyelid Scrubs

The allergenic role of cocamidopropyl betaine (CAPB) in contact dermatitis, including eyelid dermatitis, is well documented in the dermatology literature. Despite widespread use of this surfactant in many cosmetic and self-care products, including some commonly prescribed by ophthalmologists for eyelid hygiene, we found no mention of this allergen in the ophthalmic literature.

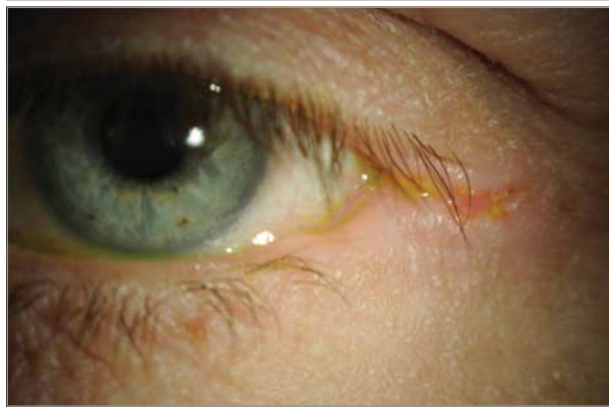
Report of a Case | A 52-year-old woman was referred to our department with a 10-year history of recalcitrant blepharitis, conjunctivitis, and periorbital dermatitis. Her medical history included asthma, seasonal allergies, and atopic dermatitis. Her ocular history was significant for multiple topical and oral therapeutic regimens for her chief complaint with periods of only modest temporary relief.

On presentation, her corrected visual acuity was 20/30 OD and 20/20 OS. External examination findings were significant

for bilateral periorbital dermatitis. Slitlamp examination revealed bilateral eyelid thickening, keratinization, madarosis, and fissuring of the lateral canthi (**Figure 1**). At this time, the patient was using cyclosporine, ketotifen fumarate, and fluorometholone drops as well as oral fexofenadine hydrochloride and diphenhydramine. She was also using Johnson & Johnson's No More Tears baby shampoo (Johnson & Johnson Consumer Companies Inc) to perform daily eyelid scrubs, as she had for a number of years. All drops were stopped, and the patient began using preservative-free artificial tears. Conjunctival cultures were unremarkable.

Given the recalcitrance of her symptoms, the patient was referred to dermatology for patch testing, which revealed allergic response to amidoamine and 3-(dimethylamino) propylamine (DMAPA), 2 impurities related to CAPB, a common surfactant used in many cosmetic and personal care products. A conjunctival biopsy showed marked acute and chronic inflammation with scattered eosinophils consistent with contact dermatitis (**Figure 2**). The patient was found to be using 2 products containing CAPB: her hair shampoo and the baby shampoo that she was using for eyelid hygiene. Use of all products containing CAPB was stopped and the patient experienced rapid, significant improvement. At 4 months, the patient's symptoms were much improved and she returned to the care of her primary ophthalmologist.

Figure 1. Slitlamp Photograph



Slitlamp photograph of the left eye shows eyelid thickening, madarosis, and fissuring of the lateral canthi.

Discussion | Cocamidopropyl betaine is a coconut oil-derived surfactant and lathering agent used in many personal hygiene and cosmetic products. It was first developed in the 1970s as part of Johnson & Johnson's No More Tears baby shampoo formula. However, as early as the 1980s, reports of CAPB-related contact dermatitis began to surface, including many cases of eyelid dermatitis.¹⁻³ During the ensuing decades, the allergenicity of this agent became so widely recognized that the American Dermatologic Society named CAPB the Allergen of the Year in 2004. Despite its allergenic potential, CAPB is still widely used—a recent review of shampoo ingredients at Walgreen's pharmacy found that 53% contain CAPB.⁴

At least 2 products frequently prescribed by ophthalmologists for eyelid hygiene contain CAPB. The most notable of these is Johnson & Johnson's baby shampoo, a product routinely prescribed as an eyelid scrub for patients with blepharitis and meibomian gland dysfunction. Significantly, CAPB is the second leading ingredient in this product.⁵ SteriLid eyelid cleanser (Advanced Vision Research, Inc), another popular eyelid scrub, also contains CAPB.⁶

To our knowledge, this is the first reported case of CAPB-related eyelid dermatitis in a patient using Johnson & Johnson's baby shampoo eyelid scrubs and the first case of CAPB-related eyelid dermatitis in the ophthalmic literature. Clinicians should be aware of the allergenic potential of CAPB-containing products. When contact allergy-related eyelid dermatitis is suspected, patch testing should be considered. Direct testing for DMAPA should be specifically requested. Positive patch tests should be followed by discontinuance of all offending agents. Substitution with DMAPA-free products can be considered. Comanagement with dermatology may be helpful.

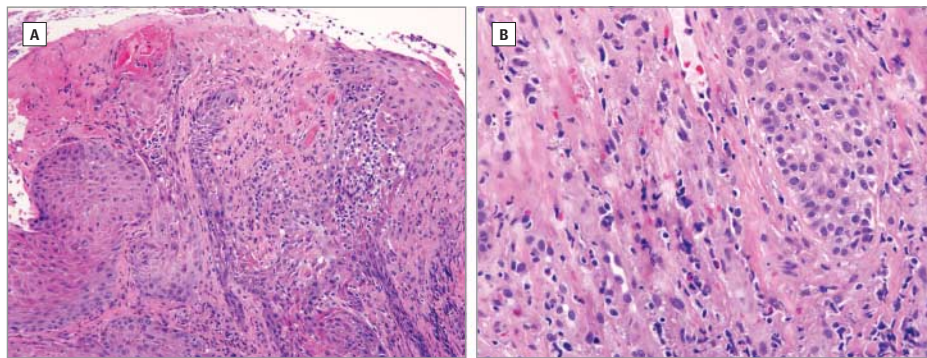
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Figure 2. Conjunctival Biopsy Findings



A, Histopathology shows marked acute and chronic inflammation. Spongiosis and focal ulceration of squamous epithelium are seen (hematoxylin-eosin, original magnification $\times 20$). B, High-power magnification shows a few eosinophils (below center) (hematoxylin-eosin, original magnification $\times 40$).

Author Contributions: Dr Welling had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Welling, Mauger, Hendershot.

Acquisition of data: Welling, Mauger, Hendershot.

Analysis and interpretation of data: Welling, Mauger, Schoenfield.

Drafting of the manuscript: Welling, Mauger, Schoenfield.

Critical revision of the manuscript for important intellectual content: Welling, Mauger, Hendershot.

Administrative, technical, or material support: All authors.

Study supervision: Mauger, Hendershot.

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Systemic Inflammatory Pseudotumor and Myasthenia Gravis

We describe a patient with aggressive systemic inflammatory pseudotumor manifesting as isolated ocular myasthenia gravis. In this case, the routine chest imaging performed following the diagnosis of myasthenia gravis identified occult mediastinal lymphoid disease years prior to development of diffuse systemic symptoms.

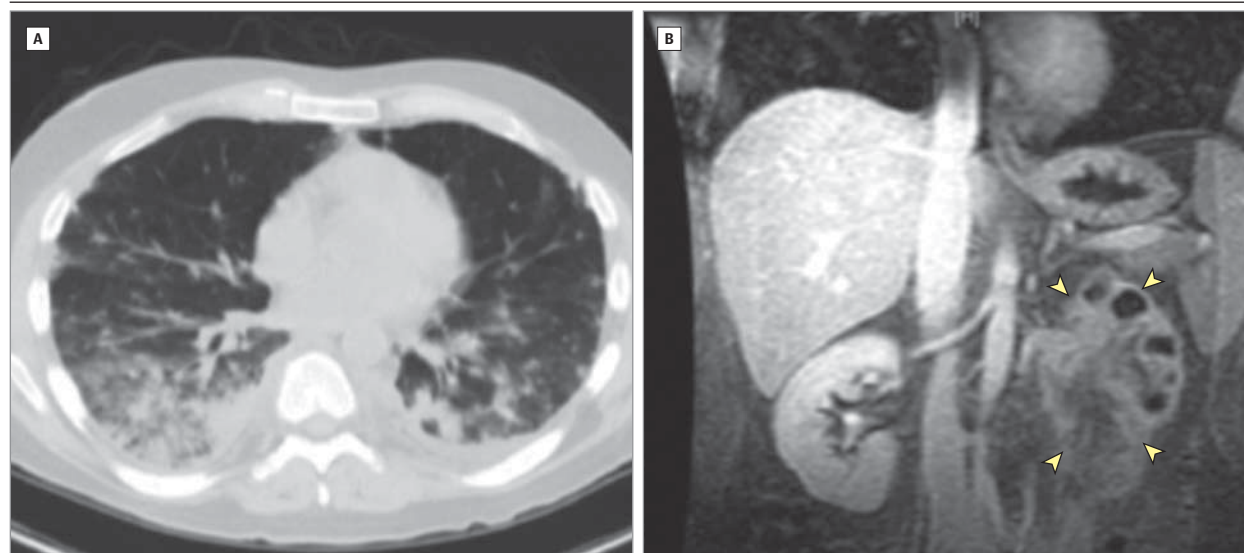
Report of a Case | A 55-year-old man had intermittent left upper eyelid drooping and blurring of vision, worse later in the day, for 6 weeks. He had no significant medical history, no smok-

ing history, and no systemic symptoms. The examination findings were notable for left upper eyelid ptosis with associated fatigability and Cogan twitch; the findings were otherwise normal. Acetylcholine receptor (AChR)-blocking antibody positivity (6.6 $\mu\text{m/L}$) and abnormal single-fiber electromyography confirmed the diagnosis of myasthenia gravis. Computed tomographic imaging of the chest revealed numerous lung nodules and mediastinal adenopathy, suggesting metastatic disease (Figure 1A).

Abdominal imaging demonstrated a large mass within the left kidney presumed to be primary renal cell carcinoma (Figure 1B). A radical nephrectomy was performed. The renal mass was composed of an atypical lymphoplasmacytic infiltrate (Figure 2A) with only scattered IgG4-positive cells on a fibrotic background (Figure 2B). There was no evidence of amyloid deposition, lymphoma, or other malignant neoplasm within the renal mass or within an excised lung mass (Figure 2C). The patient was not initially treated with immunosuppression given the lack of systemic symptoms or progression of the lung nodules on serial computed tomographic imaging. His ocular myasthenia was initially controlled for 2 years with pyridostigmine bromide alone.

Subsequently, bilateral orbital inflammation, left lacrimal enlargement, diffuse subcutaneous masses, lung nodule growth, and hemolytic anemia all evolved despite initiation of treatment with prednisone, plus trials of mycophenolate mofetil, cyclosporine, lenalidomide, and thalidomide. The AChR antibody titer peaked at 11.9 $\mu\text{m/L}$. Additional biopsies of paraspinal adenopathy and subcutaneous scalp nodules again showed inflammatory changes without malignant neoplasm. All signs and symptoms resolved on starting rituximab infusions every 3 months while continuing moderate doses of corticosteroids. The antibody titer also decreased on this regimen (range, 1.2-1.7 $\mu\text{m/L}$). Presumed autoimmune glomerulo-

Figure 1. Lung and Kidney Lesions Concerning for Metastatic Renal Cell Carcinoma



A, Axial chest computed tomography incidentally showed dense right lower lobe consolidation and multiple patchy confluent nodules present in both lower lobes. B, Coronal abdominal magnetic resonance imaging demonstrates a

6 × 8 × 10-cm left kidney mass (arrowheads) surrounding much of the collecting system and proximal ureter and extending into the perarenal space.