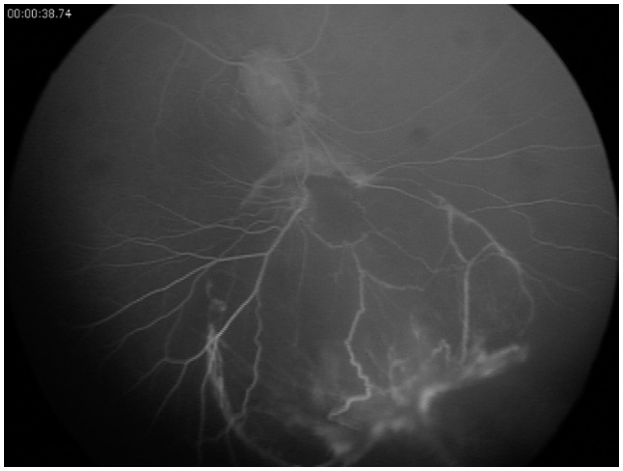

Fig. 4—Fluorescein angiogram of the right eye demonstrating the termination of retinal circulation.

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Acute anterior uveitis following zoledronic acid infusion for osteoporosis

Zoledronic acid (Aclasta, Novartis Pharmaceuticals, Canada) is a bisphosphonate used in the treatment of osteoporosis, Paget's disease of the bone, and hypercalcemia associated with malignancy. It is administered as a single yearly infusion when used in patients with osteoporosis who do not tolerate oral bisphosphonates. Several reports of ocular inflammation in the immediate postinjection period have appeared in the literature. Here, we report a case of acute anterior uveitis.

A 58-year-old female of Jamaican descent received her first 5 mg infusion of zoledronic acid for osteoporosis. Her medications included calcium and vitamin D supplements, rosuvastatin for dyslipidemia, and esomeprazole for gastroesophageal reflux disease. Ten hours after the infusion, she began experiencing multiple symptoms including a generalized feeling of weakness and fatigue, generalized aches and pain, and nausea with vomiting. At this time, both eyes were irritated, red, and sensitive to light with more pronounced symptoms in the left eye. The day after the onset of these symptoms, she developed a rash involving all limbs and her trunk. She was initially assessed 4 days after the infusion. Her visual acuity was 6/6 in each eye and the intraocular pressure 10 mm Hg bilaterally. Slit-lamp examination revealed 1+ cells and 1+ flare in the anterior chamber of the left eye. There were no detectable cells or flare in the right eye. There were no signs of external inflammation or involvement of the posterior segment. Her C-reactive protein level (CRP) was elevated at 30 mg/L. Erythrocyte sedimentation rate was 39 mm/hr. Complete blood count, angiotensin-converting enzyme level, and chest radiograph were normal. She had a purified protein derivative test 2 years prior that was negative. HLA-B27 allele testing was negative and serology for *Treponema pallidum* was nonreactive. She was started on topical prednisolone acetate 1%, dexamethasone ointment, and Homatropine 2%. All signs of anterior uveitis resolved within 4 weeks of treatment. The CRP level normalized to 1.8 mg/L.

Bisphosphonates have been associated with anterior uveitis, particularly intravenous pamidronate that satisfies all of Naranjo's seven criteria for causality.[1,2] Zoledronic acid is a newer agent in this class and like other bisphosphonates often causes a systemic acute-phase reaction after intravenous administration. Reid et al.[3] recently characterized the acute-phase reaction using data from over 7700 women enrolled in a multicenter trial. They showed that 42% of women experienced an acute-phase reaction, usually within 1 day, but only 0.6% experienced eye pain or inflammation. When farnesyl pyrophosphate synthase is blocked by bisphosphonates, intermediates accumulate in monocytes and result in the activation of adjacent T cells with release of interferon-γ and tumor necrosis factor.[4] This is the proposed cause of the acute-phase reaction and may be responsible for ocular inflammation as well.

Orbital inflammatory disease, scleritis, and retinal pigment epitheliitis are other rare reported ocular adverse events associated with zoledronic acid.[5,6] Although uncommon, ophthalmologists should be aware of these adverse reactions given the widespread use of bisphosphonates. Patients with a history of ocular inflammatory disease should also be informed of the potential risk.

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Bloody tears from lacrimal sac rhinosporidiosis

Lacrimal sac rhinosporidiosis is an uncommon infection and to our knowledge has not been reported in Canada. *Rhinosporidium seeberi* is a fungus-like parasite with an evolutionary origin near the animal-fungal divergence that causes chronic infection of the mucous membranes of the upper respiratory tract.[1] It is endemic in India and Southeast Asia, but rarely a cause of disease outside of this region.[2]

A healthy 35-year-old female presented with acute onset unilateral bloody tears. There was no history of trauma, recent travel, or other constitutional symptoms. She resided in Bangladesh before immigration to Canada 14 years earlier. Examination revealed copious bloody, mucopurulent discharge from the left upper and lower puncta, with spurting during manual lacrimal sac compression. There was tenderness in the medial canthal region and mild swelling, but no erythema or warmth. Ocular, orbital, and nasal speculum examinations were otherwise normal. The patient began a course of oral cephalexin and the bloody tears resolved at 1 week, but the discomfort persisted. The improvement could have been related to clearance of bacterial superinfection. The lacrimal system was patent to irrigation. A computed tomography scan (Fig. 1) showed a left lacrimal sac mass, without bone destruction. The mass showed central gadolinium enhancement with magnetic resonance imaging, with loculated fluid peripheral to the mass, and dilatation of the upper part of the left nasolacrimal duct. An open excisional biopsy was performed. Frozen sections showed fungal elements and no evidence of neoplasm; therefore a left external dacryocystorhinostomy was performed. Permanent sections revealed features pathognomonic for *R. seeberi* infection (Fig. 2). Innumerable cystic structures, many filled with amorphous material surrounded by a thick, sometimes birefringent, capsule were seen. Occasional cysts contained spores, with the majority of cysts either impinging on the overlying mucosa or present in the immediate submucosa. The postoperative course was unremarkable. Infectious disease consultation deemed systemic dapsone treatment unnecessary. The patient has been followed for more than 5 years without recurrence.

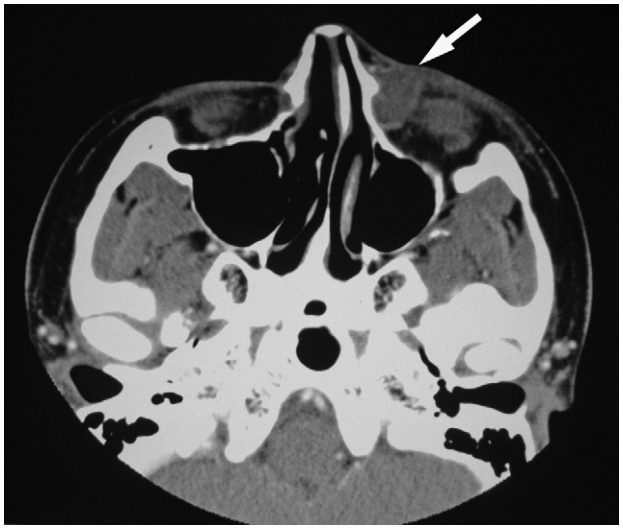

Fig. 1—Axial computed tomographic scan with contrast showing a heterogeneous mass in the area of the left lacrimal sac, with enhancement of the rim and no bone invasion.

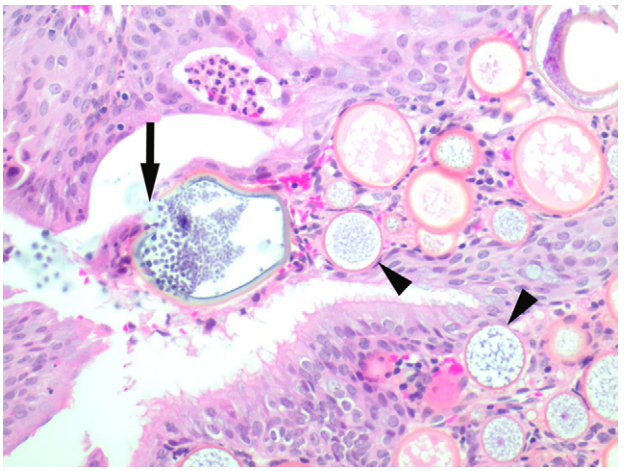

Fig. 2—Multiple thick-walled trophocytes (arrowheads) and a ruptured sporangium releasing its numerous endospores at the mucosal surface (arrow) confirming the diagnosis of *Rhinosporidium seeberi* (hematoxylin phloxine saffron, original magnification ×150).

Ocular rhinosporidiosis accounts for 15% of *R. seeberi* infections, with conjunctival involvement in the majority of cases.[2] Lacrimal sac involvement is rare.[3] Although