University of Hong Kong, Hong Kong Eye Hospital,
147K Argyle Street, Kowloon, Hong Kong
Tel: +852 2762 3000;
Fax: +852 2715 3922.
E-mail: tyylai@netvigator.com

Eye (2006) **20,** 258–260. doi:10.1038/sj.eye.6701836;
published online 11 March 2005

Sir,

ROP was always there

I enjoyed reading the recent article by Cuthbertson *et al* (*Eye* 2004; **18**: 314–315) about a female born in the UK 1939 with what was considered retinal dragging due to cicatricial ROP. This timing meant 3 years prior to Terry's original observation of what soon after acquired the label of retrolental fibroplasia, and from 1984 ROP.

I cannot beat their record, but *my* first similar Danish case immediately popped into my mind. Male born 1945, 'abortive RLF' or 'regressed, but cicatricial ROP', 4 years prior to *our* first blind baby. Mainly, Europe was late in the ROP field, because the War postponed certain therapies, among them the luxury of oxygen to small prematures.

Perspective

We always had survival of small prematures. Likewise, the two cases suggest that we probably also had ROP 'always' although the disease morphology was not at all recognized in the pre-Terry era (from 1942).

HC Fledelius

Eye Department E 2061,
Rigshospitalet,
University of Copenhagen,
Biegdamsvej 9,
DK. 2100 Copenhagen,
Denmark

Correspondence: HC Fledelius,
Tel: +45 3545 2500;
Fax: +45 3545 2298.
E-mail: rh03217@rh.dk

Eye (2006) **20,** 260. doi:10.1038/sj.eye.6701837;
published online 1 April 2005

Sir,

Famotidine-induced retinopathy

Famotidine is a competitive inhibitor of histamine H_2-receptors. The primary clinically important pharmacological activity of famotidine is inhibition of gastric secretion. It is widely used due to its relatively limited side effect profile compared to other H_2-antagonists. While transient and mild blurred vision has been reported, particularly with cimetidine,[1] severe and permanent visual loss induced by H_2-antagonists has not been reported. We describe the first case report of severe retinopathy as an adverse effect of famotidine.

Case report

A 57-year-old man was referred to our clinic with the complaint of sudden visual loss in both eyes after taking two doses of famotidine (20 mg/tab bid). He had no relevant underlying diseases, or family history of hereditary ocular diseases. He was not taking any other medications, and had no history of smoking. Regular health examination performed 1 month ago showed visual acuity of 20/15 in both eyes. He had suffered from a gastric ulcer for more than 1 year and had taken lansoprazole for about 6 months. No ocular side effect was noted using lansoprazole. Five days prior to visiting our clinic, his internist changed the prescription from lansoprazole to famotidine (20 mg/tab bid). After taking two doses of famotidine, he noticed sudden onset of blurred vision and darkening in both eyes. No photopsias was noted. He stopped taking famotidine, but no recovery in his vision occurred.

On visiting our clinic, best-corrected visual acuity was 20/200 in the right eye and 20/40 in the left eye. Automatic static perimetry showed severe generalized depression in both eyes (Figure 1). Slit-lamp examination was normal in both eyes. Indirect ophthalmoscopy and fluorescein angiography revealed no abnormalities (Figure 2). Electroretinogram demonstrated severely depressed response in both eyes (Figure 3a). Electrooculogram showed decreased Arden ratio (Figure 3b), and visual-evoked potential testing revealed poor waveform (Figure 3c). Severe retinopathy due to famotidine was impressed. Although cancer-associated retinopathy was not likely, computerized tomography of the chest was arranged and revealed negative findings. Visual function had not improved 6 months after the cessation of famotidine.

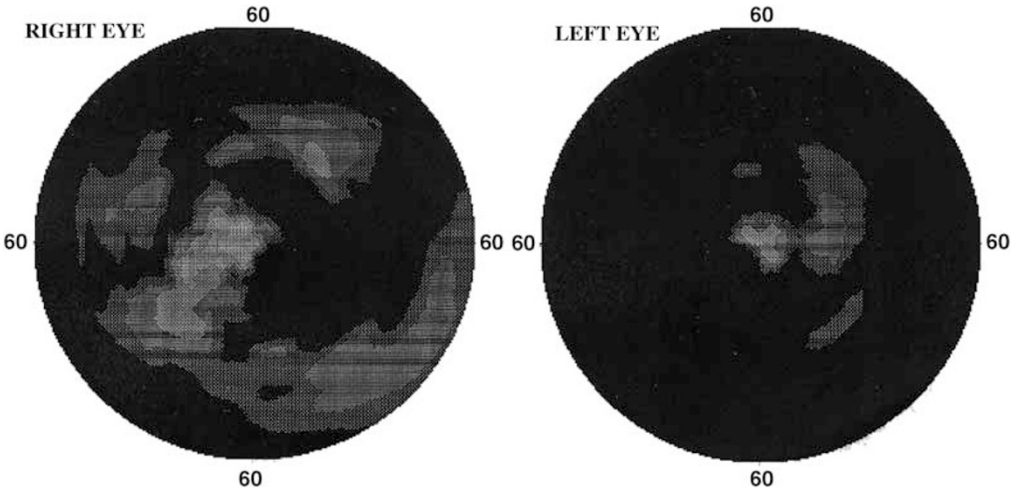

Figure 1 Automatic static perimetry showed severe generalized depression in both eyes. (60 degree Quantify Missed Points exam, DICON, Division of Vismed, Inc.)

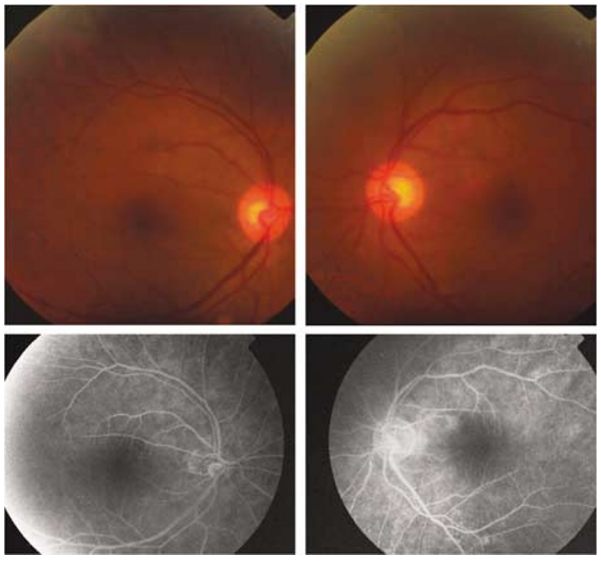

Figure 2 Indirect ophthalmoscopy and fluorescein angiography revealed no abnormalities.

Comment

H_2-receptors are widely distributed throughout mammalian tissues and organ systems. They are also present on human ocular surfaces and retinal vessels.[2,3] Abelson and Udell[2] suggested a vasodilatory effect through the H_2-receptor, which can be blocked by cimetidine. Antihistamine has been reported to reduce blood–retinal barrier permeability in diabetes.[3,4] Thus, use of an H_2-histamine antagonist might affect the blood flow of retinal vessels and perhaps result in side effects of transient headache or blurred vision.

In this case, the patient had taken lansoprazole for about 6 months without ocular side effects. The sudden loss of vision occurred after taking two doses of famotidine and he denied any recent dietary changes or special events around that time. These circumstances suggest that the retinopathy resulted from famotidine use. However, it is unlikely that the retinopathy was caused by change in vascular permeability or decrease in blood flow, because the fluorescein angiography was normal. Instead, the findings in ERG, EOG, and VEP suggest that the retinopathy derived from direct toxic effects to the photoreceptors-RPE (retinal pigment epithelium) complex. It is not clear whether this adverse effect occurred through histamine H_2 receptors or not.

The results of several cohort studies do not suggest a major increased risk for eye disorders associated with use of antiulcer drugs, including famotidine.[5–8] However, those studies might fail to demonstrate exceedingly rare complications and therefore do not guarantee ocular safety. Although the exact mechanism in this patient remains unclear, we would like to remind physicians of the potential for this rare complication of famotidine.

Acknowledgements

Financial support: None.
Proprietary interest: None.

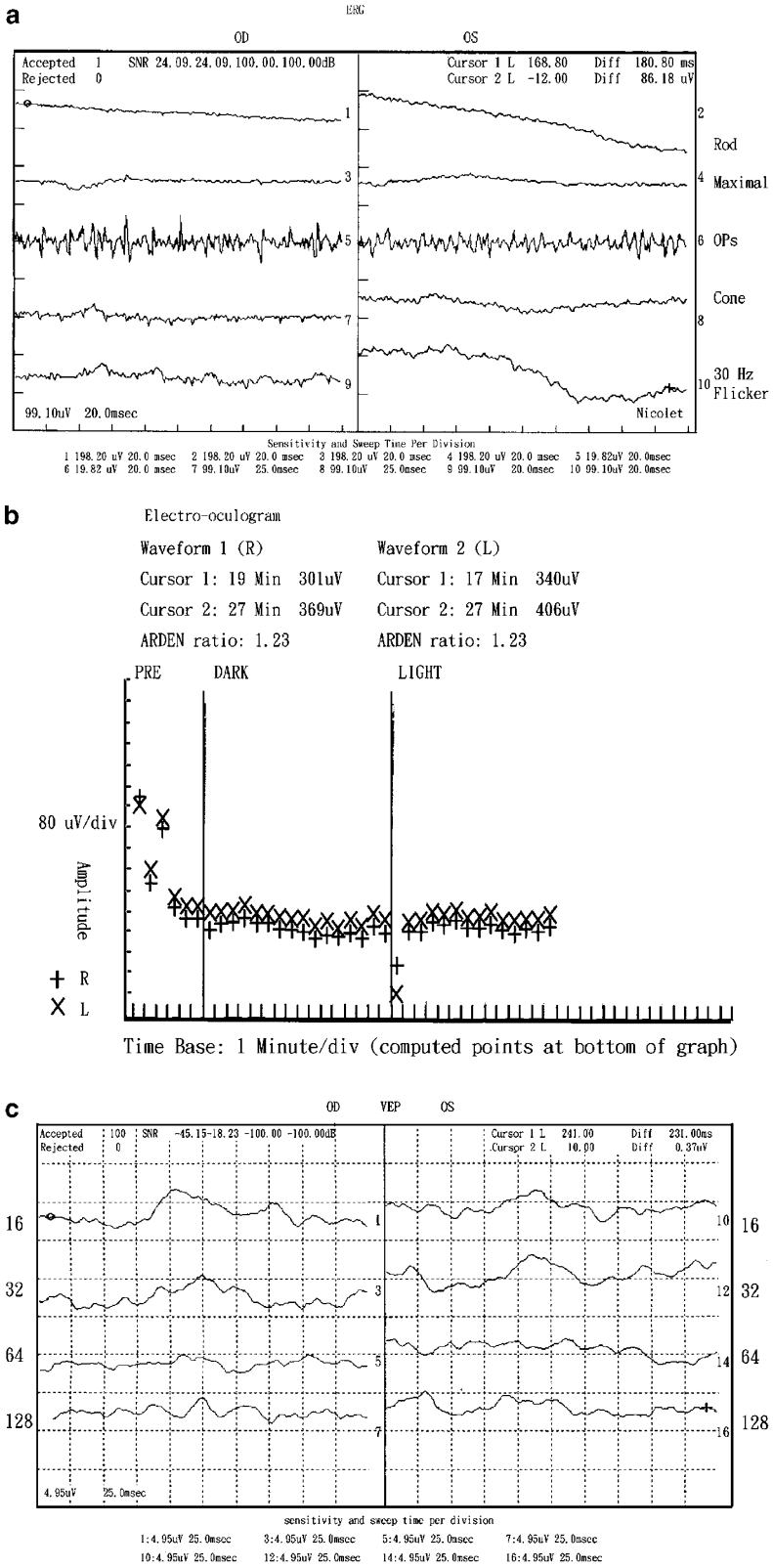

Figure 3 (a) Electroretinogram demonstrated severely depressed response in both eyes. (b) Electrooculogram showed decreased Arden ratio. (c) Visual-evoked potential testing revealed poor waveform.

References

1 Fraunfelder FT, Meyer SM. *Drug-induced Ocular Side Effects and Drug Interactions*, 3rd ed. Lea & Febiger: Philadelphia, 1989.
2 Abelson MB, Udell IJ. H2-Receptors in the human ocular surface. *Arch Ophthalmol* 1981; **99**: 302–304.
3 Gardner TW, Eller AW, Friberg TR, D'Antonio JA, Hollis TM. Antihistamines reduce blood–retinal barrier permeability in type I (insulin-dependent) diabetic patients with nonproliferative retinopathy. *A pilot study. Retina* 1995; **15**: 134–140.
4 Enea NA, Hollis TM, Kern JA, Gardner TW. Histamine H_1 receptors mediate increased blood–retinal barrier permeability in experimental diabetes. *Arch Ophthalmol* 1989; **107**: 270–274.
5 Garcia Rodriguez LA, Mannino S, Wallander MA. Ocular safety of antiulcer drugs. *Lancet* 1995; **345**: 1059–1060.
6 Garcia Rodriguez LA, Mannino S, Wallander MA, Lindblom B. A cohort study of the ocular safety of anti-ulcer drugs. *Br J Clin Pharmacol* 1996; **42**: 213–216.
7 Mannino S, Troncon MG, Wallander MA, Cattaruzzi C, Romano F, Agostinis L *et al.* Ocular disorders in users of H2 antagonists and of omeprazole. *Pharmacoepidemiol Drug Saf* 1998; **7**: 233–241.
8 Lindquist M, Pettersson M, Edwards IR, Sanderson J, Taylor N, Fletcher P *et al.* DR Signals Analysis Project Team. Omeprazole and visual disorders: seeing alternatives. *Pharmacoepidemiol Drug Saf* 1996; **5**: 27–32.

Y-C Lee[1,2,3] and C-C Wang[1]

[1]Department of Ophthalmology, Buddhist Tzu-Chi General Hospital, Hualien, Taiwan

[2]The Department of Medicine, Tzu Chi University, Hualien, Taiwan

[3]Graduate Institute of Medical Sciences, Tzu Chi University, Hualien, Taiwan

Correspondence: Y-C Lee,
Department of Ophthalmology,
Buddhist Tzu-Chi General Hospital,
707, Section 3, Chung Yang Road, Hualien 970, Taiwan
Tel: +886 3 8561825 ext 3253;
Fax: +886 3 8578179.
E-mail: derrick@url.com.tw

Eye (2006) **20,** 260–263. doi:10.1038/sj.eye.6701839; published online 11 March 2005

Sir,

A fungal ball in the irrigating solution during phacoemulsification

The irrigating solutions used for intraocular surgeries such as phacoemulsification are prepared with aseptic manufacturing technique. We report a unique case in which a mass of green fungus was found in an Alcon 500 ml balanced salt solution (BSS) bottle during phacoemulsification. The discovery of a visible organic material in the bottle during phacoemulsification is a rare occurrence and to our knowledge, has not been documented in the literature.

Case report

A 74-year-old lady underwent a routine phacoemulsification with intraocular lens implant. During aspiration of the soft lens matter, a theatre staff noticed a green fur-like material floating in the irrigation bottle. Approximately 150 ml of the 500 ml of BSS had been used. The bottle, irrigating tubes, and hand-piece were replaced. The eye was thoroughly irrigated with a fresh bottle of BSS before the operation was completed. At the end of the procedure, subconjunctival Cefuroxime 62.5 mg injection was given. The foreign body and the bottle of BSS was sent to the microbiology laboratory for investigation (Figures 1 and 2).

Microbiological analysis revealed the material to be a 1.5 cm diameter tangle of fungal element. The fungus was grown and sent to the Mycology Reference Laboratory in Bristol for further identification. No bacteria were isolated after 48 h, and all the culture plates were overgrown by this fungus. Further report identified this species of fungus as *Alternaria alternata*. Incidentally, the base of the bottle was noticed to have a hairline crack measuring about 6.5 cm in circumference from which there was no apparent leakage of fluid. The supplier was notified and all the bottles of BSS from the same batch were recalled. None of the previous patients who were operated using the same batch of BSS reported any adverse events.

On the first day after the operation, the eye was comfortable. There was slight corneal oedema and +2 cells in the anterior chamber. The vitreous was quiet. The patient was treated prophylactically with guttate Econazole hourly for 2 days and Maxitrol qds. On day-3 postop, +1 cells were seen in the anterior chamber and the vitreous remained unremarkable. The visual acuity was 6/36 in that eye. Our patient had moderate age-related macular degeneration, and the preoperative visual acuity was hand movement. The following day, the frequency of treatment was reduced to four times