Figure 1 Orbital cellulitis: CT scan demonstrating OD (a) proptosis, (b) soft tissue inflammation, (c) choroidal detachment, (d) retrobulbar inflammation, and (e) optic nerve sheath enhancement. Figure has been digitally changed to incorporate arrows.

Figure 2 Choroidal detachment: CT scan demonstrating OD choroidal detachment and periorbital inflammation.

head appeared normal and the retina and choroid were grossly attached.

The differential diagnoses included orbital cellulites leading to orbital apex syndrome, idiopathic orbital inflammation, uveal effusion syndrome, lymphoproliferative disease, and cavernous sinus thrombosis or fistula.² Although the source of this infection remains unclear, it was our impression that the clinical course and CT scan findings were most consistent with orbital cellulitis with orbital apex involvement causing inflammatory vortex venous drainage impedance. This diagnosis was further supported by

resolution of retrobulbar inflammation within the first 4 days of antibiotic use with only q.i.d. topical steroids. To our knowledge, there is only one report of retinal/choroidal detachment associated with orbital cellulites.³ Orbital cellulitis may have to be considered in relevant situations, after choroidal detachment. Treatment of the underlying infection may result in resolution of the detachments.

References

- 1 Ferguson MP, McNab AA. Current treatment and outcome in orbital cellulitis. *Aust NZ J Ophthalmol* 1999; 27(6): 375–379.
- 2 Brubaker RF, Pederson JE. Ciliochoroidal detachment. *Surv Ophthalmol* 1983; 27(5): 281–289.
- 3 Malhotra M. Orbital cellulitis with exudative retinal detachment. *Br J ophthalmol* 1957; 41(5): 317–319.

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Sir, Severe radiation retinopathy and optic neuropathy after brachytherapy for choroidal melanoma, treated by hyperbaric oxygen

A 63-year-old woman was diagnosed with choroidal melanoma under the macula of the left eye. The visual acuity in the affected eye at the time of diagnosis was 6/15. Although the tumour was only 2.3 mm in maximal thickness, there was obvious evidence of growth, and she was treated by ruthenium-106 brachytherapy, receiving 10 000 cGy to the tumour apex and 22 200 cGy to the tumour base. The melanoma responded well to the treatment, but because of the tumour location, the visual acuity deteriorated to finger counting at 10–40 cm.

Four years after the brachytherapy the patient complained of visual deterioration and visual flashes. Fundus examination revealed marked retinal exudation with infiltrates, in areas confluent, around the optic nerve with some blurring of the optic nerve head borders (Figure 1a). Fluorescein angiography showed total blurring of the optic nerve head margin and peripapillary hyperfluorescence (Figure 1b). Visual field examination (24–2) showed 'viable' areas only in the upper and lower margins (Figure 1c). There was no change in the remnants of the melanoma. Diagnosis of irradiation optic neuropathy and retinopathy was made.

Since the patient previously exhibited significant side effects to steroid administration, she was referred for hyperbaric oxygen treatment (HBOT), receiving a course of 20 sessions, 2 h each, of 100% O₂ at 2 atmospheres absolute (ATA). Two months after the treatment, the patient felt marked visual improvement, although the

visual acuity did not change significantly. Fundus examination showed total resolution of the retinal exudates (Figure 2a). Visual field examination (30–2) showed marked improvement in its lower half (Figure 2b).

Figure 2 (a) Wide-angle fundus picture of the left eye after HBOT shows complete disappearance of the retinal exudates. (b) Central 30–2 threshold test visual field performed after the HBOT shows marked recovery of the lower half of the visual field.

Figure 1 (a) Wide-angle fundus picture of the left eye before HBOT shows the remnant of choroidal melanoma in the macular area and severe retinal exudation around the optic nerve head. (b) Fluorescein angiography shows hyperfluorescence and blurring of the borders of the optic nerve head in the left eye. Retinal hemorrhages are seen inferior to it. (c) Central 24–2 threshold test visual field performed before the HBOT shows severe damage with 'viable' areas in the upper and lower periphery.

Comment

Brachytherapy is the most common method for treating uveal melanoma. However, complications that include inter alia, radiation retinopathy and radiation optic neuropathy have been described.^{1,2} Such complications have been treated by various methods, including laser photocoagulation, systemic corticosteroids and recently, intravitreal injections of triamcinolone acetonide.³

HBOT has been suggested in the treatment of various retinal pathological conditions,⁴ and optic neuropathies, including radiation-induced optic neuropathy.⁵ In our present case, we report the response of irradiation retinopathy and optic neuropathy to HBOT with marked improvement in the clinical appearance of the fundus and the visual field.

References

- 1 Gunduz K, Shields CL, Shields JA, Cater J, Freire JE, Brady LW. Radiation complications and tumor control after plaque radiotherapy of choroidal melanoma with macular involvement. *Am J Ophthalmol* 1999; **127**: 579–589.
- 2 Summanen P, Immonen I, Kivela T, Tommila P, Heikkonen J, Tarkkanen A. Radiation related complications after ruthenium plaque radiotherapy of uveal melanoma. *Br J Ophthalmol* 1996; **80**: 732–739.
- 3 Shields CL, Demirci H, Dai V, Marr BP, Masahyekhi A, Materin MA *et al* Intravitreal triamcinolone acetonide for radiation maculopathy after plaque radiotherapy for choroidal melanoma. *Retina* 2005; **25**: 868–874.
- 4 Beiran I, Goldenberg I, Adir Y, Tamir A, Shupak A, Miller B. Early hyperbaric oxygen therapy for retinal artery occlusion. *Eur J Ophthalmol* 2001; **11**: 345–350.
- 5 Borruat FX, Schatz NJ, Glaser JS, Feun LG, Matos L. Visual recovery from radiation-induced optic neuropathy. The role of hyperbaric oxygen therapy. *J Clin Neuroophthalmol* 1993; **13**: 98–101.

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Sir,
Microbial contamination of ophthalmic operating microscopes

Endophthalmitis is an uncommon but devastating complication of any intraocular procedure. It has been

shown that microbial contamination of the operative eye increases the risk of endophthalmitis.¹ Several studies have isolated bacteria inside the operating room on everything from the ventilation systems to surgical drapes, most commonly isolating coagulase-negative *Staphylococcus*.^{2–5}

Case report

In order to investigate the potential of ophthalmic operating microscopes to contaminate the surgical field, we cultured four ophthalmic operating microscopes, two at a university hospital and two at a Veteran's Administration hospital. All four operating rooms were frequently used by multiple resident and faculty physicians for ophthalmic surgery. Microscope ages ranged from 5 to 22 years.

On each microscope, the objective lens cover and the vertical and horizontal moving plates were cultured with a sterile cotton applicator moistened with thioglycolate broth and applied over a blood, chocolate, and Sabouraud culture plate (Figure 1). Cultures were taken at 0600 h and repeated at 1700 h. No growth was detected in any culture after 6 weeks of incubation.

Both OR staffs reported occasional light dusting of the microscope on an as-needed basis without any recent dusting before the cultures. During surgeries, sterile knob covers were routinely placed on all microscope knobs at both facilities. None of the microscopes had ever been cleaned by any aseptic means. The baseline swabs in our cultures revealed various amounts of grime, confirming the OR staff's reports.

Comment

We were surprised to learn that no bacteria or fungi could be isolated from frequently used, teaching hospital microscopes that had never been cleaned with any antiseptic chemical. Although more elaborate methods of culturing could have been considered, most contaminants with a significant chance of seeding the operative field should have been isolated with standard swabbing techniques.

Figure 1 The culture sites. Site one was the objective lens cover. Site two was the vertical adjustment plate. Site three was the horizontal adjustment plate.