nutrition following laparotomy to relieve intestinal obstruction. Within the first post-operative week, she had abdominal wound infection, septicaemia, and right knee septic arthritis. One week after her laparotomy, she complained of pain in the right eye with blurred vision. On ocular examination, vision was no perception of light in the right eye and 6/6 in the left. The right eye was injected with a cloudy cornea (Figure 1), IOP of 35 mmHg, 2+ cells in the anterior chamber, an amaurotic pupil, absent red reflex while the left eye appeared normal. Anterior chamber and vitreous tap with intra-vitreous antibiotics (vancomycin and gentamicin) was performed and revealed brown-green-coloured vitreous aspirate. The following morning, she complained of pain and blurred vision in the left eye (Figure 2); the vision was no perception of light, and clinical findings were identical to those found in the right eye. Therapeutic/diagnostic vitrectomy was performed in an attempt to save any useful vision but was unsuccessful. Blood samples, right knee aspirate, vitreous aspirate from both eyes, and samples from the tip of CVL all grew the Gram-negative bacillus, *A. hydrophila*, sensitive to ciprofloxacin and gentamicin.

Comment

A. hydrophila is a rod-like environmental bacterium,¹ which causes systemic infections^{1,2} as well as conjunctivitis, keratitis, and endophthalmitis, especially post trauma.¹⁻⁴ It is common in Taiwan as compared to the West because of its ubiquity in the natural environment and the increasing number of susceptible hosts in Taiwan.² *A. hydrophila* infections are usually seen in specific circumstances like in immunocompromised patients, especially those with malignancy or liver disease.² *A. hydrophila* is highly pathogenic especially to the eye, triggers a robust inflammatory response² with a rapid clinical course causing extensive necrosis³ with suppurative inflammation, and has a poor visual prognosis.³

This particular patient had a pond at home, and a sample from it grew *A. hydrophila* that may have entered her blood through the CVL. Strict aseptic technique, minimum handling, and continuous monitoring of patients with CVL can reduce the risk of infection.⁵

Figure 1 Injected right eye showing purulent discharge.

Figure 2 Left eye is relatively white with a hazy view to the anterior chamber.

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Sir, Effect of ocular massage on intraocular pressure and corneal biomechanics

Ocular massage is believed to be a simple procedure to reduce intraocular pressure (IOP). Ocular response analyser (ORA) is a non-contact tonometer that measures corneal hysteresis (CH) and corneal resistance factor (CRF).¹ The ORA provides a corneal-compensated IOP (IOPcc), which is less affected by central corneal thickness (CCT).² How much IOP can be reduced from ocular massage and how ocular massage affects corneal biomechanics?

Figure 1 The eye massager being worn with tilting of the lower part slightly upward for a more direct vibrating force through the upper eyelid.

Fifty-three young healthy adults (20–31 years) were recruited. This study was approved by the Ethics Committee of the institute. One eye was randomly selected and four measurements in accordance with the instruction manual were first taken using the ORA. Subjects were at rest for 10 min and another four measurements were taken again. Each subject then wore an eye massager (iCare 2000, OSIM International Ltd, Singapore) to receive ocular massage for 5 min. The vibration mode was set to the maximum level. Subjects were instructed to tilt the lower part of the eye massager slightly upwards to provide more direct pressure through the upper eyelid (Figure 1). Four final measurements were taken after the ocular massage. Table 1 lists the IOPcc, CH, and CRF results from the three sessions. Repeated measure analysis of variance, with *post hoc* test, demonstrated significantly lower IOPcc and higher CH after ocular massage. The CRF was significantly lower after ocular massage. The difference between the first and second sessions was not significant, indicating good repeatability. The change in IOPcc was independent of the initial IOPcc (correlation coefficient $r = 0.06$, $P = 0.68$), CH ($r = 0.06$, $P = 0.67$), and CRF ($r = 0.09$, $P = 0.54$). Figure 2 shows the distribution of the IOPcc change.

Forty subjects (76%) demonstrated IOP drop > 1 mmHg (mean $\pm$ SD = 3.73 ± 1.53 mmHg; maximum reduction: 7 mmHg). Clinically, digital ocular compression through the eyelids for several minutes may be enough to reduce the IOP. The central corneal thickness was not measured here, but using IOPcc could reduce the influence of CCT.² We confirmed that ocular

Table 1 Mean $\pm$ SD of ORA measurements from the three sessions.

	1st session	2nd session	3rd session
IOPcc	14.94 ± 2.20	15.32 ± 2.30	$12.56 \pm 3.08^*$
CRF	11.04 ± 1.58	10.96 ± 1.60	$10.72 \pm 1.65^*$
CH	11.21 ± 1.40	11.03 ± 1.31	$11.63 \pm 1.46^*$

CH, corneal hysteresis; CRF, corneal resistance factor; IOPcc, corneal-compensated intraocular pressure; ORA, ocular response analyzer; SD, standard deviation.

*significantly different results compared with the other two sessions. All parameters are in mmHg.

Figure 2 Distribution of change in IOPcc from ocular massage. Positive value indicates IOP increase after ocular massage.

massage is effective in reducing IOP. Its influence on corneal biomechanics is relatively small. We do not know if subjects with high IOP will have a similar IOP change. Nevertheless, IOP reduction is independent of the initial IOP. The duration of IOP reduction requires further analysis.

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