

## Endogenous *Aeromonas caviae* Endophthalmitis: A Case Report

Dear Editor,

The Gram-negative *Aeromonas* exhibit a “straight-rod” appearance and are a facultative anaerobic and oxidase-positive bacteria, especially in aquatic environments [1]. Ophthalmic diseases associated with *Aeromonas* have been rarely reported, including this first case of endogenous endophthalmitis caused by the *Aeromonas caviae*.

The 81-year-old male patient was admitted to an emergency room due to ocular pain and decreased vision in the left eye which he reported as having sudden onset and experienced for 1 day. The patient had no history of trauma or any ophthalmic disease. Cataract surgery was performed in the left eye about 10 years ago. The patient was under medication for diabetes, chronic heart failure, angina pectoris, atrial fibrillation, and chronic cholecystitis with gallbladder stones with these histories having been investigated by Internal Medicine Practitioners. He is taking diabetes and heart medications. Systemic antibiotics were not included.

At initial examination, best-corrected visual acuity was 20 / 20 in the right eye and hand movement in the left eye. The intraocular pressure measured by Goldman applanation tonometer was more than 60 mmHg in the left eye and 11 mmHg in the right eye. Slit-lamp examination revealed conjunctival injection, subconjunctival hemorrhage, severe corneal edema and severe anterior chamber cells. Due to the inflammation and bleeding in the anterior chamber, the intraocular lens and fundus were not seen. The B-scan ultrasonogram showed vitreous opacities. There was no significant findings in the other eye.

The patient was alert and vital signs were within the normal ranges. White blood cells were increased to 11,310/mm<sup>3</sup>

and C-reactive protein was increased to 13.5 mg/dL. The suspicion of endophthalmitis led to the systemic evaluation of the patient, including chest and abdominal computed tomography with blood cultures done to identify the cause of the infection. An emergency pars plana vitrectomy with the 25-gauge trocars was undertaken by a retina specialist. The artificial intraocular lens that had dropped into the vitreous was removed. Extensive retinal and choroidal necrosis was observed during the surgery (Fig. 1). Intravitreal antibiotic injections (Vancomycin 1 mg/0.1 mL, ceftazidime 2.25 mg/0.1 mL, and dexamethasone 0.4 mg/0.1 mL) were performed. The patient’s intraocular pressure was normal by the end of the surgery. The preoperative abdominal computed tomography showed an immature hepatic abscess of about 4 cm in the liver. The empirical systemic antibiotics of piperacillin/tazobactam and ciprofloxacin were administered intravenously. Intraocular Gram staining revealed moderate gram-negative rods with many *A. caviae* being detected at the intraocular culture. No bacteria were identified in blood culture.

In the day following the surgery, the patient complained of severe pain, decreased visual acuity and a B-scan ultrasonogram revealed that the vitreous opacity had worsened. The patient complained of severe pain due to uncontrolled intraocular pressure and, as there was no possibility of vision recovery, the evisceration was performed. One week after the surgery, the wound was clear and pain was controlled. At 1 month after the surgery, there was no recurrence of infection at the wound site.

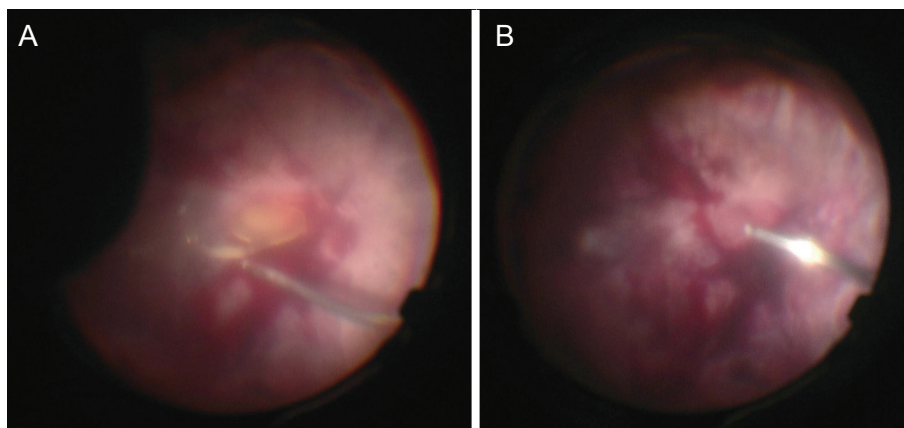
Although endophthalmitis was rarely reported, it remains a disease responsible for severe visual impairment. Its origin is usually an infectious agent. A patient’s prior surgery is the most common cause of infectious endophthalmitis, in addition to trauma and infection [2]. Endogenous bacterial endophthalmitis is much less frequent. From the 30 species of *Aeromonas*, *Aeromonas hydrophilia*, *A. caviae*, and *Aeromonas veronii* have been reported as the most commonly identified human pathogens. In rarely reported cases of ophthalmic disease, most were caused by *A. hydrophilia* [1,3,4]. Khan et al. [5] reported bilateral endogenous endophthalmitis, presumed to be *A. hydrophilia* infections and thought to have originated in central venous lines. However, to the best of our knowledge, this is the

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**Fig. 1.** Intraoperative findings. (A) Dropped intraocular lens and (B) necrosis of retina and choroid. The patient provided written informed consent for the publication of the research details and clinical images.

first case of endogenous endophthalmitis caused by *A. caviae*.

The authors assert that the origin of *A. caviae* in this patient was likely to have arisen from an infection in the hepatobiliary system. A very large amount of *A. caviae* detected in the intraocular culture indicated that his endophthalmitis had progressed rapidly before the liver abscess had matured. Although this disease progressed similarly to endophthalmitis caused by other *Aeromonas* species, it exhibited a much faster clinical course and a poorer prognosis despite rapid diagnosis and management. These significant factors demonstrate the need for rapid ophthalmic examination and empirical antibiotic treatment when ocular symptoms are present in patients with hepatobiliary disease.

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