

Postoperative Endophthalmitis by *Flavimonas oryzihabitans*

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A 55-year-old man suffered from blurred vision of the left eye (visual acuity was counting fingers / 5-10 cm) 8 days after undergoing cataract surgery. After thorough ophthalmologic examinations with gram-negative bacillus justified on smear of vitreous specimen, postoperative endophthalmitis (os) was impressed. Intravitreal injection of 1.0 mg of vancomycin, 0.4 mg of amikacin, and 0.4 mg of dexamethasone was given twice and vitreous fluid culture was also performed. However, the inflammatory condition was not well controlled. Because the results of vitreous fluid culture revealed *Flavimonas oryzihabitans* infection which is sensitive to piperacillin, we performed the 3rd intravitreal injection of 1.0 mg of piperacillin and 0.4 mg of dexamethasone. The inflammatory condition was under control and the visual acuity of left eye improved. For patients with ocular diseases, postoperative endophthalmitis by *Flavimonas oryzihabitans* is a rare condition. According to the results of this case, intravitreal injection of piperacillin was effective against the pathogen. (*Chang Gung Med J* 2004;27:830-3)

Key words: postoperative endophthalmitis, *Flavimonas oryzihabitans*, antibiotic susceptibility test.

Flavimonas oryzihabitans, previously known as *Pseudomonas oryzihabitans*, Centers for Disease Control and Prevention (CDC) group Ve-2, *Chromobacterium typhiflavum*, is a nonfermenting, oxidase-negative, catalase-positive, gram-negative bacillus⁽¹⁾ that has rarely been encountered as a human ocular pathogen. *Flavimonas oryzihabitans* appears to be a soil and saprophytic organism that survives in moist environments and is indigenous to rice paddies.⁽¹⁾ In this report, we describe one patient who suffered from postoperative endophthalmitis by *Flavimonas oryzihabitans*.

CASE REPORT

A healthy 55-year-old man underwent cataract surgery (os) in June 2002. He began to work as a lorry-driver carrying soil 3 days after the operation and blurred vision (os) soon occurred. He visited our

hospital without any treatment by other doctors 5 days after the onset of the blurred vision (Fig. 1). At 8 days after undergoing cataract surgery, his visual acuity was counting fingers / 5-10 cm. After thorough ophthalmologic examinations, with gram-negative bacillus justified on smear of vitreous specimen, postoperative endophthalmitis (os) was impressed.

Intravitreal injection of 1.0 mg of vancomycin, 0.4 mg of amikacin, and 0.4 mg of dexamethasone was given twice and vitreous fluid culture was also performed.

During the following 10 days, the inflammatory condition was somewhat controlled, but the visual acuity of the left eye (counting fingers / 30-35 cm) was not well improved. The vitreous culture revealed *Flavimonas oryzihabitans* infection (Fig. 2) which is sensitive to piperacillin, imipenem, and sulfamethoxazole-trimethoprim, but resistant to amikacin, gentamicin, and first- to third- generation

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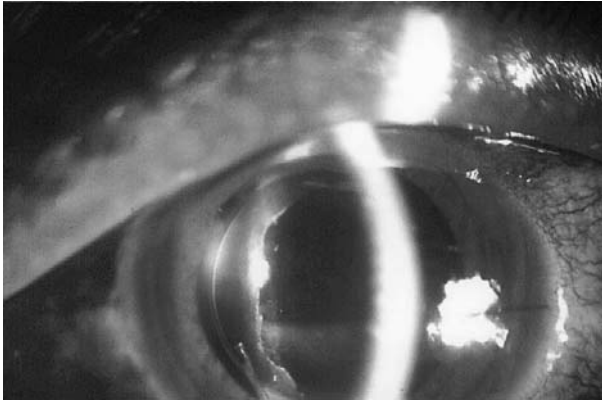


Fig. 1 The external photography (OS) revealed injected conjunctiva, edematous cornea, and a turbid posterior capsule.

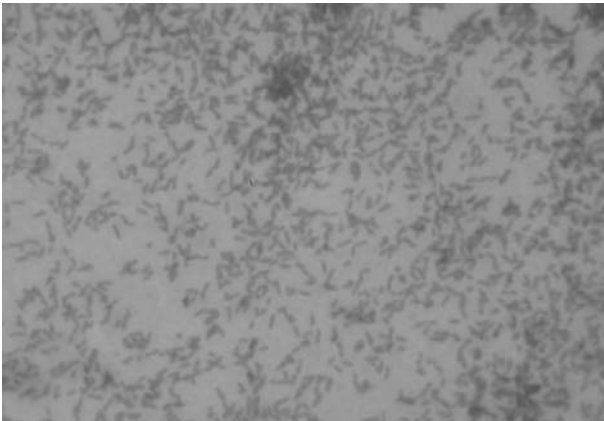


Fig. 2 The culture of vitreous fluid (OS) revealed gram-negative bacillus.

cephalosporins. Because the intraocular inflammation persisted, we performed the 3rd intravitreal injection of 1.0 mg of piperacillin and 0.4 mg of dexamethasone.

The inflammatory condition was quickly under controlled and the visual acuity of left eye improved to 20/40.

Because the vitreous opacity still interfered with his driving occupation, a trans pars plana vitrectomy was performed in September 2002. The post-operative course was smooth and the visual acuity improved to 20/20.

DISCUSSION

The classification of postoperative endoph-

thalmitis includes the time of onset and the organisms most frequently isolated:

1. Acute-onset endophthalmitis (within 6 weeks of intraocular surgery): coagulase-negative *Staphylococcus*, *Staphylococcus aureus*, *Streptococcus* species, gram-negative organisms.

2. Chronic (delayed-onset) endophthalmitis (after 6 weeks of surgery): *Propionibacterium acnes*, coagulase-negative *Staphylococcus*, fungi.

3. Bleb-associated endophthalmitis (months or years after surgery): *Streptococcus* species, *Haemophilus* species, gram-positive organisms.⁽²⁾

In our case, the time of onset was 8 days after undergoing cataract surgery and the organism isolated was *Flavimonas oryzihabitans* (gram-negative bacillus). According to the classification above, it belongs to acute-onset endophthalmitis.

Most of the clinically significant diseases caused by *Flavimonas oryzihabitans* have been associated with intravenous indwelling catheters,⁽³⁻⁶⁾ surgical wounds,^(7,8) peritoneal dialysis catheters,^(9,10) and nosocomially acquired or community-acquired infections.⁽¹¹⁻¹²⁾ In our case, the reasonable sources of *Flavimonas oryzihabitans* infection were that he received cataract surgery with a foreign body (intraocular lens) implanted and that his career was as a lorry-driver carrying soil.

Intravitreal antibiotics are almost always recommended for the management of acute-onset endophthalmitis. In the Endophthalmitis Vitrectomy Study, intravitreal administration of 1.0 mg of vancomycin and 0.4 mg of amikacin were used. In addition, 2.25 mg of ceftazidime has been suggested as an alternative to intravitreal amikacin. Therefore twice the standard intravitreal injection of standard regimens were performed in this case. However, the medical response was unfavorable, and the culture results showed an unusual infectious species.

To our knowledge, *Flavimonas oryzihabitans* strains were considered to be sensitive to the penicillins, aminoglycosides, and some third-generation cephalosporins but resistant to first- and second-generation cephalosporins.^(13,14) As to the antibiotic susceptibility test of this case, the results revealed that the pathogen was only sensitive to piperacillin, imipenem, and sulfamethoxazole-trimethoprim, but resistant to amikacin, gentamicin, and first to third (ceftazidime especially)- generation cephalosporins. The piperacillin dose of sub-conjunctival injection

for treating bacterial keratitis was found to be 10 mg.⁽¹⁵⁾ While treating this case, we applied a 10% dose for intravitreal injection and the effects were obvious.

For patients with ocular diseases, postoperative endophthalmitis by *Flavimonas oryzihabitans* is a rare condition. According to the results of this case, intravitreal injection of piperacillin was effective against the pathogen.

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由*Flavimonas oryzihabitans*引發之術後眼內炎

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一55歲男性左眼接受白內障手術，術後8天出現視力模糊現象（約眼前5-10公分可辨手指數），經檢查及玻璃體液抹片呈現格蘭氏陰性桿菌，診斷為術後眼內炎。雖經以萬古黴素（1.0 mg），氨基配醣體抗生素（0.4 mg）及醣皮質固醇（0.4 mg）於玻璃體內注射二次仍無法完全控制病況。後因玻璃體抽出物培養出*Flavimonas oryzihabitans*且根據抗生素敏感性試驗結果，故使用盤尼西林類抗生素（1.0 mg）及醣皮質固醇（0.4 mg）進行第三次玻璃體內注射，結果病況獲得大幅控制，病人視力進步至20/40。

由*Flavimonas oryzihabitans*所引發之術後眼內炎是一罕見情形，根據這個病例的經驗，使用盤尼西林類抗生素（piperacillin）行玻璃體內注射可以有效地控制此類微生物。（長庚醫誌 2004;27:830-3）

關鍵字：術後眼內炎，*Flavimonas oryzihabitans*，抗生素敏感性試驗。