

INFECTIVE ENDOCARDITIS WITH UVEITIS: A RARE CASE REPORT

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We report a case of a 51-year-old diabetic male who presented with a complaint of intermittent chills and fever that he had experienced for 10 days. No obvious respiratory tract, genitourinary tract, gastrointestinal tract, or skin lesions were observed. Blood culture data were positive for group B β -streptococcus. Transthoracic and transesophageal echocardiography revealed vegetation in the anterior leaflet of the mitral valve. The patient was diagnosed with infective endocarditis (IE) and prescribed a parenteral antibiotic. Three days after admission, the patient complained of progressively blurred vision. Slit lamp examination found fine keratic precipitates and aqueous cells in the anterior chambers in both eyes, implying that the patient had uveitis. He was then prescribed a topical steroid for 4 months, and his vision improved gradually. This case is an important reminder that uveitis, not only endophthalmitis, can occur with IE. Treatment for one condition, if misapplied, may worsen the other.

Key Words: endophthalmitis, infective endocarditis, uveitis
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Infective endocarditis (IE) is a microbial infection of the endothelial surface of the heart. In addition to the constitutional infection symptoms, which are likely mediated by cytokines, clinical manifestations of IE can be generated by immune complexes deposition or antibody-complement interaction with antigens deposited in tissue. Rheumatologic manifestations of IE, such as Osler's nodes, have been attributed to local deposition of immune complexes. Although endophthalmitis, a severe intraocular infection, is infrequently associated with IE, uveitis, another intraocular inflammation, is not. Here, we report an IE case with acute blurred vision caused by uveitis.

CASE PRESENTATION

A 51-year-old man with diabetes, which had been under medical control for more than 6 years, presented with a complaint of intermittent chills and fever for 10 days. The patient had no obvious respiratory tract, genitourinary tract, gastrointestinal tract, or skin lesions. Physical examination found a grade III/VI pansystolic murmur over the apex during auscultation. Local heat, erythematous swelling, and tenderness in the right middle proximal interphalanx joint were observed. Subungual hemorrhage in the nail bed of the right thumb appeared later. Transthoracic and transesophageal echocardiography revealed vegetation located in the anterior leaflet of the mitral valve and moderate mitral regurgitation (Figure 1). Two separate blood cultures were positive for group B β -streptococcus. Based on Duke criteria, the patient was diagnosed with IE and was treated with parenteral penicillin-G 4 MU every 4 hours for 28 days during hospitalization.

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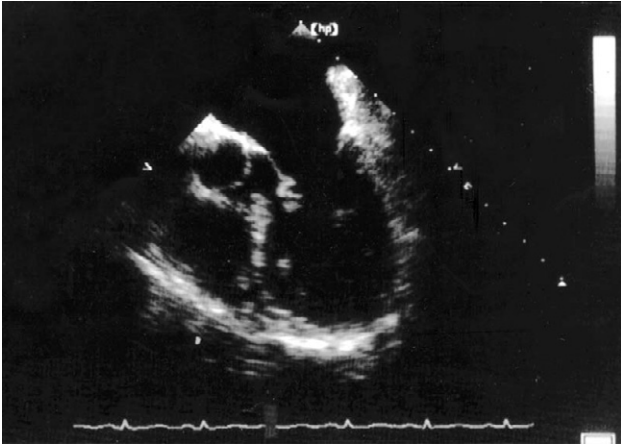


Figure 1. *Transesophageal echocardiography shows vegetation located in the anterior leaflet of the mitral valve.*

Three days after admission, the patient complained of progressively blurred vision. Slit lamp examination found fine keratic precipitates and aqueous cells in the anterior chambers in both eyes. There was mild edema at the right optic disc; hard exudates and hemorrhage were noted in the macula (Figure 2). Fluorescein angiography demonstrated fluorescence leakage in the right optic disc, and block fluorescence and fluorescence leakage on the macula (Figure 3). The patient was diagnosed with uveitis, not endophthalmitis, and prescribed a topical steroid. His vision improved gradually. Under a diagnosis of uveitis, an extensive search was made to identify evidence of rheumatologic disease. However, all tests, including HLA-B27, antinuclear antibody, rheumatoid factor, and VDRL (Venereal

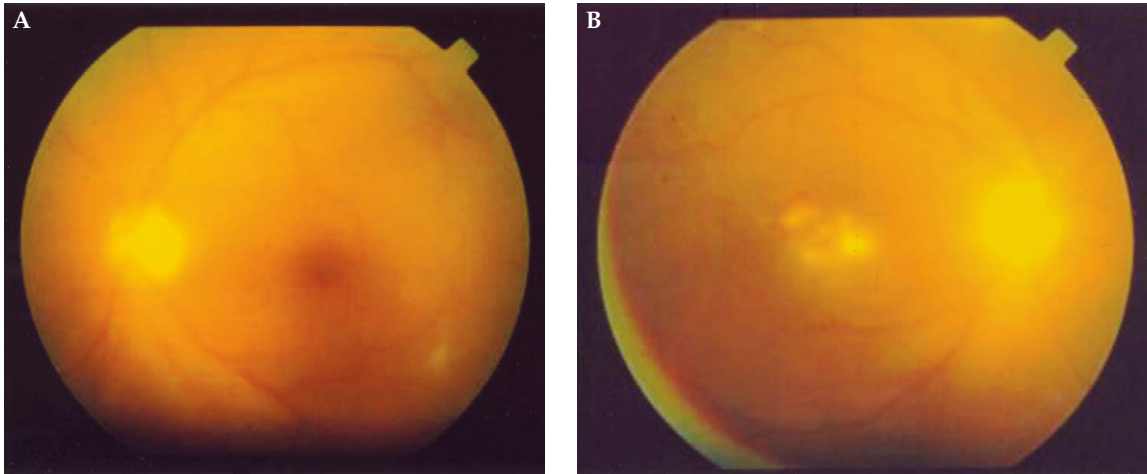


Figure 2. (A) *Mild edematous changes in the optic disc and (B) hemorrhage as well as hard exudates on the macula in the right fundus.*

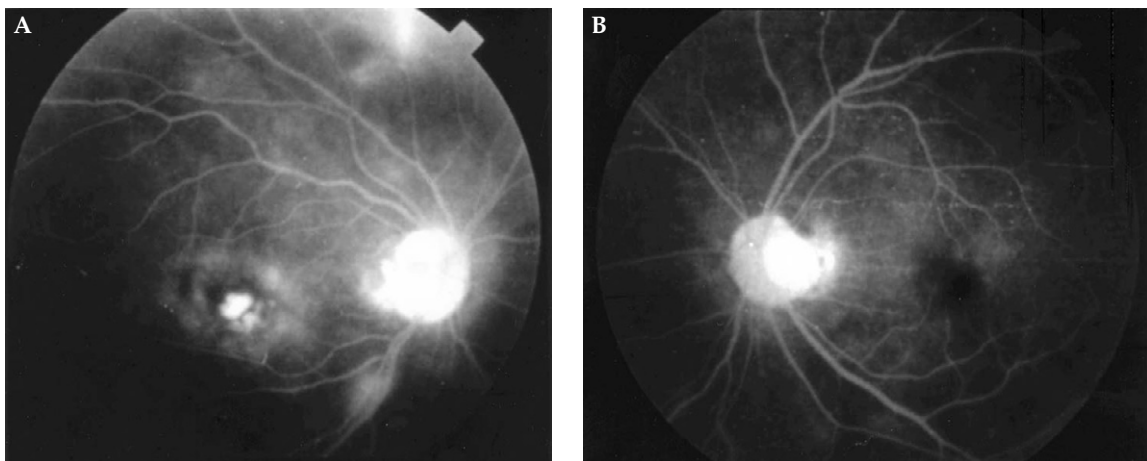


Figure 3. *Fluorescein angiography shows (A) fluorescence leakage in the right optic disc and (B) fluorescence block as well as fluorescence leakage at the macula.*

Disease Research Laboratory), were negative. The patient was referred to a rheumatologist, who also excluded the possibility of rheumatologic disease. Following discharge, the patient underwent ophthalmologic clinical follow-up. Cells in the bilateral vitreous body had been observed for 2 additional months after completing 28 days of parenteral penicillin-G therapy. The patient was treated with a topical steroid and subconjunctival steroid injections for 4 months. He was followed up for 3 years. Moderate mitral regurgitation remained unchanged. However, the patient experienced no significant sequelae as a result of uveitis. His visual acuity was normal in both eyes.

DISCUSSION

The patient was first clinically diagnosed with endocarditis based on Duke criteria. He met two major and one minor criteria: echocardiography disclosing vegetation attached to the mitral valve; positive blood culture with a pathogen that is a member of group B β -hemolytic streptococcus; and subungual hemorrhage [1].

Group B streptococcus (*S. agalactiae*) is a rare cause of IE. Adults with chronic immunosuppressive conditions, such as alcoholism, diabetes mellitus, neoplasias, and HIV-infection, are at an increased risk for group B streptococcus endocarditis. Group B streptococcus endocarditis is typically characterized by acute onset, large vegetations, rapid valvular destruction, and frequent complications. Its clinical course is more aggressive than endocarditis caused by other streptococcus species [2].

Rheumatologic manifestations are known to complicate IE. A retrospective study demonstrated that peripheral arthritis was clinically evident in 15% of IE patients without history of intravenous drug use [3]. Poststreptococcal reactive arthritis, with a latency ranging from 4 days to 6 weeks [4], has been reported and may be present in the form of oligoarthritis or polyarthritis, although the pathogens identified in those case reports were all group A β -streptococci. Since group B β -streptococci has not been reported in any cases of poststreptococcal reactive arthritis [5], this patient's arthritis at the right middle interphalanx joint was considered a rheumatologic manifestation cited as occurring with IE rather than reactive arthritis.

Ophthalmologic involvement in IE cases is uncommon. Hematogenous dissemination of a pathogen into the intraocular space can generate endophthalmitis, 70% of which is caused by Gram-negative microbes [6]. In a study of endogenous endophthalmitis, group B streptococcus was found in 7% of cases; the main source of infection was IE [7]. Patients with group B endogenous endophthalmitis typically experience a dramatic vision loss. A reverse relative afferent papillary defect and cream-like hypopyon are usually present [8]. Antibiotic therapy with good intraocular penetration should be initiated immediately, as delayed treatment can compromise visual prognosis; vision loss rate reportedly reaches 37.5% [6]. Uveitis, however, is a non-infectious inflammatory disease that can easily be mistaken as endophthalmitis. In an epidemiologic study of 2,943 autopsies, 98% of posterior uveitis in patients with systemic diseases was non-granulomatous inflammation [9]. Poststreptococcal uveitis has been infrequently reported in cases with poststreptococcal syndrome, which includes acute rheumatic fever, poststreptococcal reactive arthritis, and acute glomerulonephritis [10,11]; the pathogen involved in poststreptococcal syndrome is group A streptococcus. In cases of streptococcal infection, uveitis is considered to be an immunologic response to exogenous and endogenous antigens. Drop in visual acuity in uveitis is related to inflammatory changes and onset of disease complications and/or treatment, including cataracts, glaucoma, and cystic macular edema. Retinal vasculitis manifests as inflammatory infiltrates along the retinal vessels with vascular leakage or occlusion that can be highlighted by fundus fluorescein angiography. Medical therapy includes topical, locally injected, and systemically administered anti-inflammatory treatments [12]. Based on this patient's clinical manifestations, a diagnosis of uveitis was made and the patient's uveitis was cured by topical steroid.

In terms of immunogenetic factors, HLA-B27 is commonly identified in patients with acute uveitis irrespective of presence of underlying ankylosing spondylitis [13]. No evidence existed of underlying rheumatologic disease in this patient, and his HLA-B27 test was negative. The uveitis in this case of IE was probably associated with streptococcus-associated immune complex. The pathogenesis of uveitis in group B streptococcus bacteremia warrants further study.

To our knowledge, this patient is the first reported case of IE associated with uveitis.

Infectious endocarditis can be complicated with vascular embolism, immunologic phenomena, and rheumatic manifestations. Ophthalmologic involvement is rare in patients with IE. This case is an important reminder that accurate diagnosis and differentiation between endophthalmitis and uveitis are crucial as the strategies for treating these two diseases are different. This patient's uveitis was treated successfully by local steroid use. This is the first reported case of IE complicated by uveitis.

REFERENCES

1. Bernard DP. Diagnosis of infective endocarditis. *BMJ* 2002;325:845–6.
2. Rollan MJ, San Roman JA, Vilacosta I, et al. Clinical profile of *Streptococcus agalactiae* native valve endocarditis. *Am Heart J* 2003;146:1095–8.
3. Gonzalez JC, Gonzalez GM. Rheumatic manifestations of infective endocarditis in non-addicts: a 12-year study. *Medicine* 2001;80:9–19.
4. Aviles RJ, Ramakrishna G, Mohr DN, et al. Poststreptococcal reactive arthritis in adults: a case series. *Mayo Clin Proc* 2000;75:144–7.
5. Kobayashi S, Tamura N, Ikeda M, et al. Uveitis in adult patients with poststreptococcal reactive arthritis: the first two cases reported associated with uveitis. *Clin Rheumatol* 2002;21:533–5.
6. Arcieri ES, Jorge EF, Rocha FJ. Bilateral endogenous endophthalmitis associated with infective endocarditis: case report. *Braz J Infect Dis* 2001;5:356–9.
7. Chihara S, Siccione E. Group B streptococcus endocarditis with endophthalmitis. *Mayo Clin Proc* 2005;80:74.
8. Lee SY, Chee SP. Group B streptococcus endogenous endophthalmitis—case report and review of literature. *Ophthalmology* 2002;109:1879–86.
9. Hofmann HM, Giarelli L. Posterior uveitis in systemic diseases. A pathologic and epidemiologic study. *Klin Monatsbl Augenheilkd* 1986;189:173–5.
10. Knox CM, Wong IG, Love P. Chronic uveitis following a streptococcal illness. *Can J Ophthalmol* 1999;34:99–100.
11. Leiba H, Barash J, Pollack A. Poststreptococcal uveitis. *Am J Ophthalmol* 1998;126:317–8.
12. Smith JR. Management of uveitis. *Clin Exp Med* 2004;3:21–9.
13. Careless DJ, Chiu B, Rabinovitch T, et al. Immunogenetic and microbial factors in acute anterior uveitis. *J Rheumatol* 1997;24:102–8.

感染性心內膜炎與葡萄膜炎 — 病歷報告

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我們報導一位 51 歲糖尿病男性病人，其主述為入院前十天有間歇性寒顫與發燒情形。其無明顯呼叫道，泌尿道，腸胃道及皮膚病兆。血液培養顯現 group B β -streptococcus 感染。胸前及食道超音波顯示二尖瓣前葉有贅生物。因此他被診斷為感染性心內膜炎及接受抗生素治療。入院後三天病人發現其視力模糊。眼科裂隙燈檢查顯現前葡萄膜炎。他接受四個月局部類固醇治療後視力逐漸恢復。這個病例提醒我們除了眼內炎外葡萄膜炎也可能與感染性心內膜炎同時發生。鑑別診斷很重要，一但誤診或錯誤的藥物治療恐惡化病情。

關鍵詞：眼內炎，感染性心內膜炎，葡萄膜炎

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