

Clinical Notes

Unusual presentation of infective endocarditis caused by *Streptococcus pneumoniae* on native tricuspid valve

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Before the antibiotic era, infective endocarditis (IE) was usually due to the more virulent organisms such as the β -hemolytic group A, *Streptococci*, *Pneumococci*, or *Haemophilus influenzae*. The *Streptococci* are still the cause of the majority of the cases of IE. Viridans group *Streptococci* and *Staphylococci* (*Staphylococci aureus* and *Staphylococci epidermidis*) are the pathogens most frequently responsible for IE currently.¹ Since the introduction of penicillin, the proportion of endocarditis cases caused by *Pneumococci* has dramatically decreased, from approximately 15% to <1%.² Although IE is a disease of low frequency, it causes high mortality and morbidity. The overall incidence of native valve endocarditis in the general population is estimated to be rare. Endophthalmitis caused by bacterial endocarditis is unusual. We report here a case of IE presenting with endophthalmitis due to *Streptococcus pneumoniae* (*S. pneumoniae*).

A 42-year-old man admitted to the hospital with pain in the right eye and visual loss. No fever on admission. He has been drinking alcohol for more >10 years. There were no drug abuse in his history, and no physical finding of intravenous injection. He was being followed in the ophthalmology clinic with the diagnoses of sterile endophthalmitis and hypophonic iridocyclitis. Corticosteroid treatment was administered to the patient. On the second day of hospitalization, he had fever and he was referred to infectious disease service for evaluation of fever. On admission to our service, the patient's body temperature was 39.4°C, his pulse rate was 102/bpm, and his blood pressure was 140/60 mm Hg; an II/VI degree systolic murmur was present on mitral and tricuspid valves. His right eye was proptotic and there was panophthalmitis. Six out of 8 specimens of blood culture showed *S. pneumoniae* that was susceptible to penicillin. A transthoracic echocardiogram demonstrated vegetation on tricuspid valve (Figure 1). He was treated with penicillin G (4 million unit every 6 hours), gentamicin (160 mg every 24 hours) and corticosteroid, which was gradually tapered and finally stopped. On the sixth day of the therapy, the patient's temperature was subfebrile. However, due to the orbital phenomenon deterioration, the antibiotics were changed. Vancomycin (1 gm every 12 hours) and ceftriaxone (2 gm every 24 hours)



Figure 1 - The echocardiography showed the vegetations on the tricuspid valve.

were started. On the second day of this therapy, the patient looked well and became afebrile. In spite of the complete vision loss in the right eye, chemosis significantly reduced. On the control echocardiography vegetations on the tricuspid valve were still being observed. Therefore, the patient was transferred for the operation. The findings of the operation were consistent with IE. As we have learned that, tricuspid valve replacement due to vegetation were performed in another hospital. Since, then the endophthalmitis did not response to medical treatment, surgical approach was made.

Meningitis, endocarditis, and urinary tract infections are the most common foci of infection associated with metastatic endophthalmitis. However, concurrent endophthalmitis caused by sub-acute bacterial endocarditis is unusual.³ Moreover, in our patient, IE presented with ocular findings as the sole first symptoms. The diagnosis of IE has always hinged upon clinical suspicion derived from appropriate signs and symptoms and, the absolute diagnosis is ascertained upon detection of continuous bacteremia. The clinical signs and symptoms of IE are various and the causative factors play an important role on determination of the signs and symptoms. Fever is one of the critical signs. Different metastatic infections due to systemic embolisms may be likely in IE. Cases of endophthalmitis have been reported during IE. But, endophthalmitis had been developed in most of the patients after diagnosing IE.⁴ In a review of the literature, we could find a few IE cases, alike to our case, presenting with endophthalmitis without symptoms or findings due to other organ involvement.⁵ But, vegetation was not right-sided in any of them. On the other hand, it is well-known that left-sided valve vegetation can cause systemic embolism or metastatic infection. As a reason of systemic embolism originated from right-sided valve vegetation, our case is very unlikely. Any anatomic defect such as ventricular septal defect

explaining this condition could not be recognized during operation. In this case, the endocarditis occurred on the native and right-sided valve. Infective endocarditis on the native valve is usually associated with *S. aureus* or fungi and intravenous drug usage.¹ Our patient neither had drug abuse, nor valvular disease. In conclusion, IE with endophthalmitis due to *Pneumococci* on the native tricuspid valve is the initial presenting symptom. Thus, we considered our case as noteworthy because of its 3 unusual conditions: 1) Presentation with endophthalmitis 2) *S. pneumoniae* as the pathogen on the native valve 3) Systemic embolism due to right-side valve vegetation.

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