



Isolated Pulmonary Valve Endocarditis

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Abstract

Infective endocarditis is one of the most severe complications of parenteral drug abuse. The outstanding clinical feature of infective endocarditis in intravenous drug abusers is the high incidence of right-sided valve infection, and the tricuspid valve is involved in 60% to 70% of the cases. We herein report a case of isolated pulmonic valve infective endocarditis with a native pulmonary valve.

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Introduction

Infective endocarditis is a microbial infection of the endothelial surface of the heart and great vessels, with the cardiac valves, especially the mitral and aortic valves, being the most commonly involved. Right-sided endocarditis is most frequently encountered amongst intravenous drug abusers and typically involves the tricuspid valve. It is deserving of note, however, that pulmonary valve endocarditis is extremely rare.¹⁻¹⁴ We present a case of isolated pulmonic valve endocarditis affecting a structurally normal heart.

Case report

A 30-year-old man referred to our hospital with a history of intermittent fevers for a month, coughs, chills, pleuritic chest pains, muscle pains, and diarrhea; and he had been on oral antibiotics for the previous 2 weeks. There was no history of exposure to tuberculosis or traveling.

A physical examination revealed pallor, temperature of 39.5 degrees centigrade, and petechia on the right palpebra. In addition, coarse crepitation was detected bilaterally at the lung bases in a respiratory examination. A

cardiovascular examination, however, was unremarkable.

The initial laboratory work-up revealed hypochromic microcytic anemia; and the complete blood count showed a white blood count of 16000/mm³ with a normal diff, ESR of 20 mm/h, negative HIV antibody, and platelet count of 68000. The blood culture, obtained at admission, was negative; and urinalysis showed microscopic hematuria.

An X-ray of the chest showed bilateral lower lungs field consolidation and multiple discrete nodular densities. The patient thereafter underwent echocardiography, which revealed a mild enlargement of the right ventricle with no visible vegetation on the tricuspid, mitral, and aortic valves.

Treatment with intravenous ceftazidim and clindamycin was commenced with the impression of sepsis. One week after the commencement of treatment, transesophageal echocardiography was performed for an evaluation of the right ventricle dilation and large solitary pedunculated vegetation on the pulmonary valve was detected. Antibiotic was, consequently, changed to vancomycin and amikacin. Three weeks after the antibiotic treatment and while the patient was asymptomatic, an episode of fevers, chills, pleuritic chest pains, and coughs occurred. A chest X-ray showed the reappearance of the consolidation of the left lower zone of the right lung. Imipenem was added to the

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patient's antibiotic regimen; and after 48 hours he became afebrile. The patient was followed up via transesophageal echocardiography, and the medical treatment was continued for another 2 weeks. At the end of the medical treatment, the patient was asymptomatic and in good physical condition.

Discussion

Infective endocarditis involving the pulmonic valve is extremely rare insofar as it accounts for only 1.5-2% of hospital admissions secondary to infective endocarditis.¹

The vast majority of infections are believed to be community acquired, and predisposing factors include intravenous drug abuse (78%), alcoholism (13%), sepsis (7%), central line infections (7%), other catheter-related infections (5%), gonorrhea (5%), dental extraction (2.6%), bowel surgery (2.6%), renal or liver transplantation (2.6%), and colonic angiodysplasia (2.6%).⁴ It should be noted that in 28% of cases no predisposing factor has thus far been identified.

The clinical presentation of pulmonic valve endocarditis is similar to that of tricuspid valve infection. In the cases reviewed, fever, shortness of breath, and pleuritic chest pain predominate; and radiographic and laboratory evidence frequently corroborates the presence of pulmonic embolism.¹⁻¹⁵

In our patient, the recurrent fever and chest pain seemed to have been due to septic emboli.

In the 38 review cases, in which no pulmonic valvular abnormality was noted before infection, staphylococcus aureus was the most common microorganism recovered from the blood culture (44%), followed by streptococci (13%), streptococcus bovis (5%), gonococcus (5%), pseudomonas (5%), E. coli (5%), candida albicans (5%), bacteroids fragilis (2.6%), haemophilus influenza (2.6%), and E. faecalis (2.6%). Nonetheless, no organisms were cultured in 10% of the cases.¹¹⁻¹⁵

Parenteral antibiotic therapy is generally administered for 4 to 6 weeks; and the indications for surgery are the same as those for tricuspid therapy, i.e. locally invasive infections, including abscess formation, progressive valve obstruction, incompetence, and relapsing infection after the completion of a full course of antibiotic therapy. As is the case for other right-sided heart valves infection, the prognosis for pulmonic valve endocarditis is generally better than that for mitral or aortic infection.¹

In our patient, right-sided endocarditis was suspected on the basis of radiographic features suggestive of septic pulmonary emboli, supported by a history of intravenous drug abuse, fever, and such immunological findings as hematuria confirmed by transesophageal echocardiography, showing large pedunculated vegetation, the diameter of which was about 20 mm.

Conclusion

Isolated pulmonic valve endocarditis is an extremely rare infection that shares epidemiological, clinical, radiological, microbiological, and prognostic features with tricuspid valve endocarditis.

We reported a case of isolated large pulmonary valve endocarditis with a native pulmonary valve.

A review of the literature from 1960 through 2000 identified only 38 cases of isolated pulmonary valve endocarditis occurring in structurally normal hearts. Compared with the left-sided heart valves, the involvement of pulmonic valve infection tends to affect younger patients and more than 80% of affected subjects are normally male.

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