CASE REPORT

Isolated pulmonary valve endocarditis in a patient with aplastic anaemia

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kr.nishanth@gmail.com**SUMMARY**

A 42-year-old female patient of aplastic anaemia on maintenance blood transfusion presented with a 3-week history of fever, cough, dyspnoea and pedal oedema. Upon examination she was found to have severe pallor, temperature of 101°F, tachycardia, bilateral pitting pedal oedema, raised jugular venous pressure, ejection systolic murmur (grade 2/6) in pulmonary area and petechiae over extensor aspect of both lower limbs. Blood investigations revealed low haemoglobin, thrombocytopaenia and mild increase in serum creatine. Chest x-ray was normal. Initial 2D trans thoracic echocardiography performed after hospital admission was normal. Antibiotics were started empirically to treat a possible underlying infection. Subsequently, three sets of blood cultures grew *Enterococcus faecalis*. Upon searching for the source, repeat echocardiograph done showed 2×0.5 cm vegetation on both pulmonary leaflets with severe pulmonary regurgitation, all other valves were free of vegetations. She was treated with intravenous antibiotics for the endocarditis and improved.

BACKGROUND

Isolated pulmonary valve endocarditis is an extremely uncommon clinical entity, more so in patients with no risk factors for right-sided endocarditis such as intravenous drug abuse, central venous lines, pacemakers or congenital heart diseases. The literature from 1960 to 2005 identified only 45 reported cases of pulmonary valve endocarditis in structurally normal hearts.¹

CASE PRESENTATION

A 42-year-old female patient of aplastic anaemia on maintenance blood transfusion presented with a 3-week history of fever, cough, dyspnoea and pedal oedema. There was no previous history of heart disease. An echocardiograph done 2 years ago during a routine medical evaluation was normal. She never had an indwelling central venous catheter. All transfusions she had received were through peripherally accessed upper limb venous canulas, last transfusion being 1 week prior to the onset of current symptoms (figures 1 and 2; videos 1 and 2). On examination she had severe pallor, temperature of 101°F, tachycardia, bilateral pitting pedal oedema, raised jugular venous pressure, ejection systolic murmur (grade 2/6) in pulmonary area and petechiae over extensor aspect of both lower limbs.

Figure 1 Two-dimensional echocardiograph short-axis view of pulmonary valve with arrows pointing to vegetations on both leaflets.

INVESTIGATIONS

Haematological investigation showed haemoglobin of 6.6 g/dl and platelet count of $7 \times 10^3/\mu\text{l}$ with normal leucocyte count. Biochemical investigations showed an increased serum creatine of 1.6 mg/dl.

Chest x-ray and 2D trans thoracic echocardiograph done on admission were normal. Three sets of blood cultures grew *Enterococcus faecalis*.

Repeat 2D trans thoracic echo done 1 week after admission showed 2×0.5 cm vegetations on both pulmonary leaflets with severe pulmonary regurgitation with all other valves free of vegetations.

Figure 2 Two-dimensional echocardiograph parasternal long-axis view showing other valves free of vegetations (arrows pointing to mitral and aortic leaflets).

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Video 1 Two-dimensional echocardiograph short-axis view of pulmonary valve with vegetations on both leaflets.

TREATMENT

She was managed with intravenous ampicillin and gentamycin (dose adjusted for creatine clearance) based on antibiotic sensitivity report for 4 weeks.

OUTCOME AND FOLLOW-UP

Follow-up echocardiograph showed regression in size of vegetation, blood cultures turned out to be sterile and the patient was afebrile.

DISCUSSION

Pulmonary valve endocarditis is an uncommon clinical entity comprising of less than 2% of cases for infective endocarditis.² The low incidence of pulmonary valve infective endocarditis compared with other cardiac valves may relate to different haemodynamic pressure gradients across the valves, lower right-sided blood oxygen content, different frequencies of underlying congenital or acquired valvular abnormalities and differences in the vascularity and endothelial lining of the valves.³ Right-sided endocarditis is primarily seen in patients with intravenous drug use, pacemaker, central venous catheters or congenital heart disease.⁴

The diagnosis of right-sided endocarditis is usually not suspected because it is dominated by extracardiac signs and symptoms.⁵ Majority of the reported cases of isolated pulmonary valve endocarditis have at least one of the risk factors mentioned earlier.

Patients with haematological diseases on long-term maintenance blood transfusion are at risk of developing of right-sided endocarditis if they have indwelling central venous catheter. However, recurrent blood transfusion through peripheral venous canula has not been reported as a risk factor for

Video 2 Two-dimensional echocardiograph parasternal long-axis view showing other valves free of any vegetations.

endocarditis. This case highlights the possibility of patients on maintenance blood transfusion undergoing repeated venepuncture and peripheral venous cannulations could be at risk for development of right-sided endocarditis, in a way similar to intravenous drug abusers.

Learning points

- ▶ Patients undergoing recurrent blood transfusion are at risk for development of right-sided endocarditis even in the absence of indwelling central venous catheters.
- ▶ Careful search for right-sided endocarditis should be done in patients undergoing repeated blood transfusions and venepuncture for blood sampling, who present with fever.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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