

TRICUSPID VALVE ENDOCARDITIS WITH LARGE VEGETATION IN A NON DRUG ADDICT PATIENT

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Summary

We report a case of streptococcal tricuspid valve endocarditis in a patient with no history of intravenous drug abuse. Echocardiography revealed large vegetation on the septal cusp and complicating a ventricular septal defect. The evolution was very rapid and the patient died at 48 hours because of respiratory and heart failure with breathlessness and rebel septic shock.

Key Words : Tricuspid valve endocarditis, vegetation, ventricular septal defect, streptococcus

INTRODUCTION

Tricuspid valve endocarditis (TVE) accounts for 5% to 10% of all cases of infective endocarditis and most commonly occurs in intra venous drug users. Congenital cardiac lesions associated with left to right shunt (ventricular septal defect and patent ductus arteriosus) also predispose to TVE.

We report a case of streptococcal tricuspid valve endocarditis associated with large vegetation in a non drug addict patient in whom we found a fortuitous ventricular septal defect.

CASE REPORT

A 42 year – old woman, with no history of cardiac disease, was admitted to our department in September 2008 with fever and weight loss. On admission, she had fever (39°), the pulse was regular with a rate of 140/min and the blood pressure was 240 / 100 mmHg.

A bad dental hygiene was found. Auscultation revealed a systolic murmur at the left sternal edge and a systolic murmur at the tricuspid. The Rivero-Carvalho maneuver was positive. Signs of global heart failure were noted. Laboratory tests showed leukocytosis , normocytic anemia, the C – reactive protein was positive and the erythrocyte sedimentation rate (ESR) was 15mm/h. Platelets number (286000/ul) and renal function (66 umol/l) were normal (table I).

Electrocardiographic showed a regular sinus tachycardia and a right bundle block. The chest X-Ray film showed cardiomegaly with opacity in the right upper lung field. Transthoracic and transesophageal echocardiography showed very mobile vegetation attached to the septal cusp of the tricuspid valve and an important tricuspid regurgitation. The vegetation was especially large with a diameter of 19*13mm. This endocarditis complicated an asymptomatic ventricular septal defect partially closed by a membranous pseudoaneurysm (fig 1). A septic aortic valve localization was also noted (fig 2). Blood cultures isolated a streptococcus mitis. The diagnosis of streptococcal endocarditis of the tricuspid valve complicating a restrictive ventricular septal defect partially closed by perimembraneus pseudoaneurysm was made. We started an intravenous penicillin (2g every four hours) and gentamicin (80 mg every 12 hours) therapy. A systematic computed tomography angiography was performed and showed a spleen infarction, a big liver but no signs of acute pulmonary embolism. Because of the characteristics of the tricuspid vegetation (mobility and size), to prevent the risk of septic pulmonary embolism and right ventricular inflow obstruction by tricuspid vegetation, we discussed the option of surgery (tricuspid vegetectomy), if there would be no amelioration. Unfortunately, the evolution was very rapid and the patient died in 48 hours because of respiratory and heart failure with breathlessness and severe septic shock

DISCUSSION

Tricuspid valve endocarditis is considerably less frequent than left-sided disease and accounts for 5-10% of all cases of infective endocarditis. The most common micro organism isolated in TVE is staphylococcus aureus (50-80%) and streptococcal TVE is rare. Therefore, the present case is very rare. Congestive heart failure signs are the usual presenting complaints. Pneumonia or septic pulmonary emboli resulting from dislodgement of vegetative material are common. TVE usually carries a better prognosis and less frequently requires surgical intervention. Death of adults with TVE most frequently results from pulmonary regurgitation and respiratory distress syndrome caused by recurrent septic pulmonary emboli. Uncontrolled sepsis, severe right ventricle failure, and involvement of left-sided valves are less common causes of death. Our case was different by unusual congestive heart failure, cardiogenic shock, bad evolution with medical therapy, requiring emergent valve surgery not achieved unfortunately. Indications for surgery: TVE has a better prognosis and less frequently requires surgical intervention. The greatest management problem in patients with TVE is whether and when they need surgical intervention. Severe congestive heart failure and persistent sepsis are the two major indications for surgery. The definition of persistent sepsis is variable; some investigators consider sepsis as persistent after one or two weeks of antibiotic treatment. Others however insist as long as 6 to 8 weeks of antibiotic treatment before considering surgery. Douglas et al (1), insist to exclude other causes of fever such as drug hypersensitivity, hepatitis or AIDS related infections. Without a positive blood culture, sepsis cannot be regarded as persistent. Many studies Ginzton et al (2), Robbins et al (3), Wong et al(4), Durack et al(5)) have confirmed that the finding of large tricuspid vegetations (greater than 1cm by echocardiography) combined with persistent fever is an indication for surgery. Another study yielded by Lutas et al (6) showed that the size of the vegetation is not an indication of surgery by itself. Chan et al tried to resume surgical indications in case of TVE in table II (7). For the Surgical options, tricuspid valvectomy without prosthetic replacement was the method of choice in treating TVE.

CONCLUSION

TVE has become more common with increased numbers of intravenous drug abusers. Our case is original because TVE complicate partially closed congenital ventricular septal defect. The clinical variability and complexity of TVE makes standardization and comparison of patients difficult and also leads to the necessity of individualized, patient-tailored assessment and therapy. Valve replacement is now accepted as a feasible and often life saving intervention during active endocarditis. The relatively benign prognosis for patients with TVE compared with that of patients with left-sided endocarditis is well documented in the literature. Our case emphasize this idea, the bad prognosis is because of associated left-sided endocarditis.

TABLE I : LABORATORY FINDINGS ON ADMISSION

<i>Hematology</i>	
White blood cell/ μ l	14600
Red blood cell $\times 10^4$ / μ l	273
Hemoglobin (g/dl)	6,9
Hematocrite (%)	21,5%
Platelets (10^3 / μ l)	286
<i>Biochemistry</i>	
Na ⁺ (mEq/l)	129
K ⁺ (mEq/l)	3,7
Cl ⁻ (mEq/l)	96
Blood urea nitrogen (mg/dl)	5,08
Creatinine (mmol/l)	66
Glucose (mmol/l)	8,73
<i>Serology</i>	
C- reactive protein (mg/dl)	87
Erythrocyte sedimentation rate (mm/h)	15

Table II: indications for surgery in patients with infectious tricuspid valve endocarditis

<p>Definite</p> <p>Persistent sepsis</p> <p>Significant congestive heart failure</p>
<p>Probable</p> <p>Large vegetation size</p> <p>Involvement of left-sided heart valve(s)</p> <p>Gram-negative organisms or Candida</p>
<p>Not indication by itself</p> <p>Fever</p> <p>Recurrent pulmonary embolizations</p> <p>Polymicrobial infection</p>



Fig 1B

Fig 1 (A: four Chamber view, B: shot axis view): transesophageal echocardiography showed very mobile vegetation attached to the septal cusp of the tricuspid valve. The vegetation was especially large with a diameter of 19*13mm. This endocarditis complicated an asymptomatic ventricular septal defect partially closed by a membranous pseudoaneurysm.

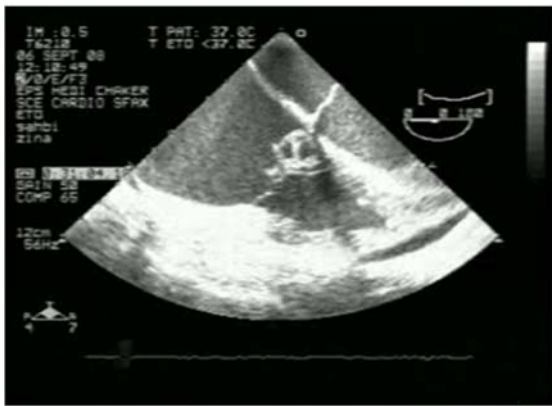


Fig 1A



Fig 2

Fig 2: A septic aortic valve localization.

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