

Ventricular Septal Defect with Pulmonary Valve Endocarditis with Vegetation – Successful Surgical Treatment in Apollo Hospitals Dhaka

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Abstract

Background: Pulmonary valve vegetation with ventricular septal defect needs early surgical intervention. **Case presentation:** A 21 years old man got admitted in Apollo Hospitals Dhaka, with the complaints of dyspnoea on exertion since childhood. Echocardiogram revealed- a large perimembranous ventricular septal defect, moderate pulmonary stenosis, vegetation attached with pulmonary valve leaflet moving during systole & diastole. During operation ventricular septal defect was closed by dacron patch. Large vegetation was excised from anterior cusp of pulmonary valve. A perforation in right cusp of pulmonary valve was repaired with pericardial patch. Transesophageal Echocardiogram revealed well functioning ventricles and no leakage through the repaired Ventricular Septal Defect and pericardial patch in pulmonary valve leaflet. **Result:** Culture Sensitivity from vegetation showed no growth and histopathological examination revealed tissue consistent with vegetation of Pulmonary Valve. Post-operative echocardiogram showed no residual shunt or vegetation. The patient was discharged on 8th post operative day in good general condition and is doing well till now. **Conclusion:** Pulmonary valve endocarditis with vegetation with ventricular septal defect is a rare association. Early surgical intervention gives good outcome.

Keyword:

Ventricular Septal Defect, Endocarditis, Vegetation, Pulmonary Valve

Introduction

Right-sided endocarditis is relatively rare and mainly affects the tricuspid valve. Pulmonary valve endocarditis is even rarer than tricuspid valve endocarditis, and comprises less than 2% of hospital admissions for endocarditis.¹ Majority of isolated pulmonary valve endocarditis occurs in patients with congenital heart disease.²

Case report

A 21 years young man got admitted at Apollo Hospitals Dhaka, with the complaints of dyspnoea on exertion since childhood. He suffered from chronic fever 1 month back and was treated

by Intravenous antibiotics. Echocardiogram revealed right ventricle is mildly hypertrophied, pulmonary valve is thickened, moderate pulmonary stenosis, a vegetation attached with pulmonary valve leaflet moving during systole & diastole. A large perimembranous ventricular septal defect is seen with left to right shunt. Operation was done on 26/10/2013. Cardio-pulmonary bypass was established by bicaval cannulation. Aorta was cross clamped. Right atriotomy was done. There was a large perimembranous ventricular septal defect, septal leaflet was divided at the base, 1 mm from tricuspid valve

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annulus to see clearly the ventricular septal defect margin. Now ventricular septal defect was closed by Dacron patch through right atrium. There was large vegetation attached to anterior cusp of pulmonary valve, which was excised. There was also a perforation in right cusp of pulmonary valve, which was repaired with pericardial patch. Some hypertrophied parietal valve, which was repaired with pericardial patch. Some hypertrophied parietal bands were excised. Maximum sized Hager's dilator passed through pulmonary valve. Patent foramen ovale kept upto 4mm. After deaeration cross clamp was released. Patient was slowly weaned from cardio-pulmonary bypass. Trans- esophageal echo was done-revealed well functioning ventricles and no leakage through the repaired ventricular septal defect patch and pericardial patch in the leaflet of pulmonary artery. Cross Clamp Time was 120 minutes & Total bypass time was 166 minutes. Culture Sensitivity from vegetation showed no growth and histopathology report revealed vegetation tissue from pulmonary valve : Consistent with infected vegetation.

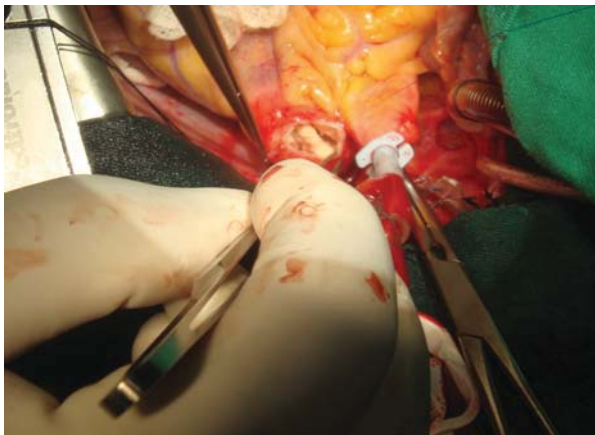


Fig. 1: Pulmonary arteriotomy was done-large vegetation attached to anterior leaflet

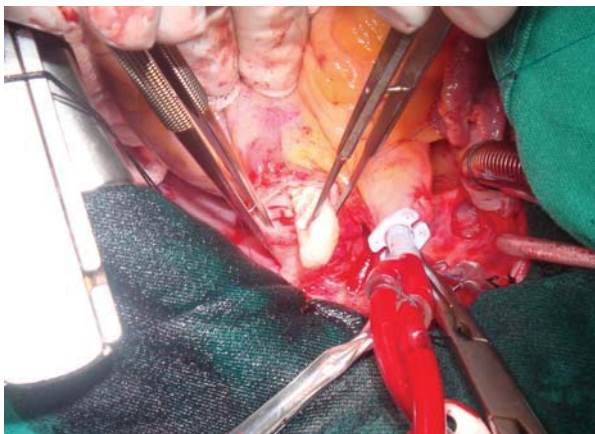


Fig. 2: Removal of the vegetation

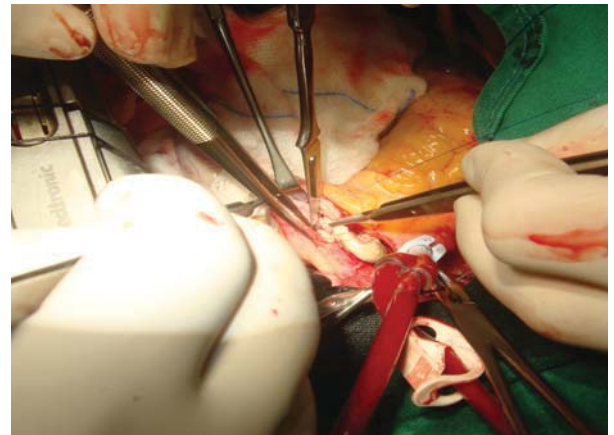


Fig. 3: Removal of the vegetation



Fig. 4: Removed vegetation



Fig. 5: Removed vegetation size

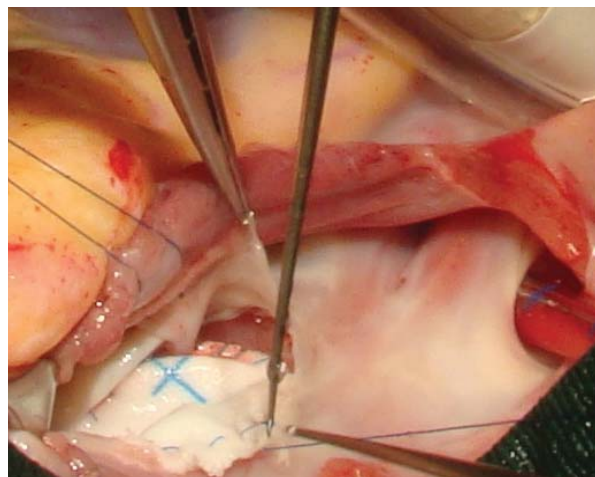


Fig. 7: VSD patch in situ, septal leaflet of Tricuspid valve is separated 1mm from annulus is seen

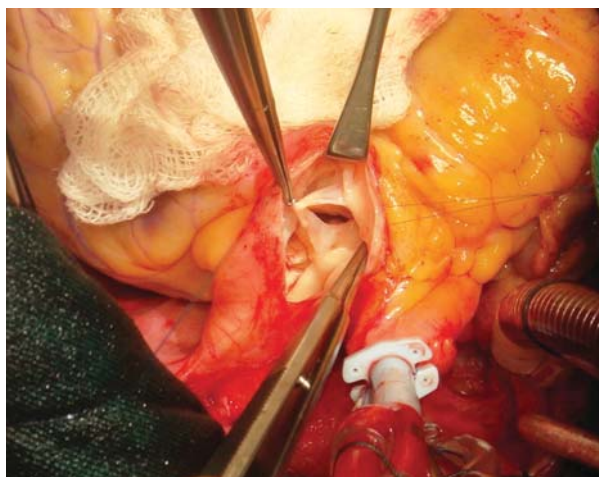


Fig. 6: After removal of the vegetation, a perforation was found in anterior leaflet of pulmonary valve

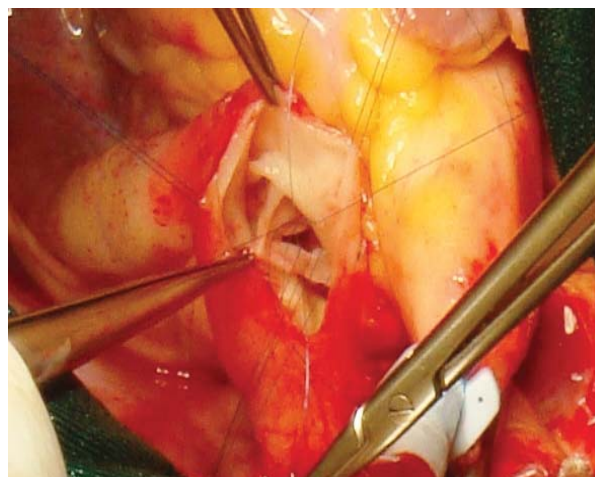


Fig. 8: Pericardial patch repair of Pulmonary valve leaflet

Post operative echocardiogram revealed ventricular septal defect closure, no residual shunt, no intracardiac mass, vegetation or thrombus seen. The patient was discharged on 8th POD from the hospital in good general condition.

Result

Cross Clamp Time was 120 minutes & Total bypass time was 166 minutes. Culture Sensitivity from vegetation showed no growth and histopathology report revealed vegetation tissue from pulmonary valve -Consistent with infected

vegetation. Post-operative echocardiogram revealed ventricular septal defect closure, no residual shunt, no intracardiac mass, vegetation or thrombus seen. The patient was discharged on 8th post-operative day from the hospital in good general condition.

Discussion

Here we described a rare case of a patient with history of untreated ventricular septal defect who presented as pulmonary valve endocarditis with vegetation.

Infective endocarditis is a condition with a high probability of morbidity and mortality in association with congenital cardiac malformations. Bacterial endocarditis is a serious and fatal complication in congenital heart disease.³ Pulmonary valve endocarditis is an uncommon disease, noted in 1.5% to 2.0% of all cases of infective endocarditis.⁴ Congenital heart disease is a known risk factor for patients diagnosed with infective endocarditis. The incidence of infective endocarditis associated with congenital heart disease may increase due to the long-term survival of patients with congenital heart disease.

Echocardiography of this patient revealed the pulmonary valve and pulmonary artery vegetations. He was referred to us for surgery after 4 weeks of intravenous antibiotic therapy.

After the intravenous use of antibiotics, Dacron patch closure of ventricular septal defect with resection of vegetations and of hypertrophied parietal bands of the right ventricle and pulmonary valvuloplasty was performed. Local excision of vegetation and leaflet repair by autopericard patch plasty should be performed in cases with localized vegetation.⁵

Surgery plays a crucial role when there are vegetations larger than 1 cm. Traditionally, the accepted dogma was to avoid surgery during the active phase of the disease due to tissue friability, which made surgery difficult and led to high

post-operative mortality and risk of valve dysfunction. Antibiotic therapy is the cornerstone of treatment, and should last for four to eight weeks and be administered intravenously. However, the most important measure is prevention, based on good oral hygiene and antibiotic prophylaxis prior to high-risk invasive procedures.⁶

Conclusion

Pulmonary valve endocarditis with vegetation with ventricular septal defect is a rare association. Early surgical intervention gives good outcome.

Reference

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