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Case Report

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Isolated right ventricular thrombus with the severe chronic obstructive pulmonary disease-case report

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ABSTRACT

Immunosuppressive patients experience various side effects from their treatment. Cyclosporine is a commonly prescribed immunomodulatory agent with increasing clinical applications. Although nephropathy is the most common documented side effect, it can cause several cardiac side effects. This report presents a rare side effect of cyclosporine; bradycardia attacks in an immunosuppressed patient.

Keywords: Cyclosporine, cardiovascular toxicity, bradycardia, arrhythmia, syncope

INTRODUCTION

Right ventricular thrombus (RVT) is a life-threatening disorder that is rare and likely underdiagnosed. Multiple risk factors have been found, including younger age, prior bleeding events, congestive heart failure, malignancy, syncopal episodes, transient systolic blood pressure greater than 100 mmHg, and arterial oxygen saturation lower than 90%.[1] Isolated RVT is extremely rare, and it is constantly associated with pulmonary embolism (PE), deep vein thrombosis or right ventricular (RV) infarction.[1,2] We reported a case of isolated RVT with severe chronic obstructive pulmonary disease (COPD).

CASE REPORT

An 80-year-old male patient presented to our emergency department with dyspnea, oxygen saturation of 74%, tachypnoea,and tachycardia. Medical history was positive for chronic obstructive pulmonary disease, Alzheimer's, diabetes mellitus, and atherosclerotic heart disease. The patient did not use his medication and oxygen treatment regularly. An examination of his lungs revealed wheezing and prolonged expiratory sound. The heart beat was regular, and the S1 and S2 were normal. There were no S3, S4, or murmurs. The electrocardiogram (ECG) showed T wave inversion in the anterior (V1-V5) and inferior leads(D2-D3-AVF), the previous ECG was similar. Thoracic computed tomography (CT) was negative for pulmonary embolism and abnormal masses. We applied routine transthoracic echocardiography (TTE) for assessment of cardiac function and there was a 1.5×2.8 cm mass between right ventricular trabeculae. There was also right ventricular dilatation, 2+ tricuspid regurgitation (TR), and tricuspid annular plane systolic excursion (TAPSE) measured 8 mm. We performed cardiac MRI to clarify the diagnosis. A nodular lesion in the right ventricle with a hypointense presentation and no enhancement on late gadolinium enhancement imaging was discovered using cardiac MRI. Apixaban medication was initiated and the patient was followed up under medication.

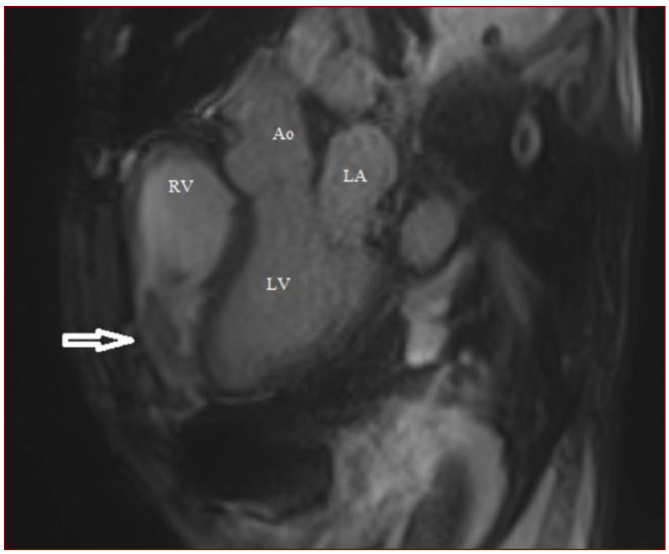

Figure 1: Cardiac MRI image of thrombus

DISCUSSION

Isolated RVT is extremely rare, even though the incidence of right ventricular thrombus is unknown, it has been associated with nephrotic syndrome, RV infarction, and particularly PE in the litarature.[1-4] To the best of our knowledge, this is the first reported case isolated RV thrombus within severe chronic obstructive pulmonary disease.

Cor pulmonale is a clinical condition in which a pressure overload affects the right side of the heart, particularly RV, causing variations in RV function and structure. Pulmonary

hypertension, RV dilatation, and RV longitudinal strain reduction associated with severe COPD in our case may have brought about thrombus formation.[5]

RV thrombus would be identified by TTE, transesophagial echocardiography, and cardiac magnetic resonance imaging. Despite the fact that TTE is the preferred method in clinical practice, diagnosing RV thrombus is not diagnosed as easy as in LV thrombus. Newer studies suggest that CMR is the most specific technique for cardiac thrombi.[6,7] Although cardiac MRI is more expensive than TTE, it may be employed in the differential diagnosis of cardiac mass or when high-mortality diseases such as RVT are suspected.[8]

CONCLUSION

Right ventricular remodeling is common during progress of COPD as well as obstructive and amphiteomatous changes in the pulmonary system. Imaging should be part of the routine examination in patients with COPD to detect thrombus/mass that may affect mortality, as well as assessment for elevated pulmonary pressure.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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