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Case Report

Unusual Cause of Ventricular Tachycardia: A Case Study

Anand Nikalje[1], Mukund Bajaj[2], Avinash Tribhuwan[3], Vitthal Pawar[4], Vishal Dalvi[4], Vajed Moghal[4]

[1]Associate Professor in Medicine, [2]Consultant in Cardiology, [3]Assistant Professor in Medicine,
[4]Chief Resident in Medicine,
Department of Medicine, Mahatma Gandhi Mission's Medical College & Hospital, CIDCO, N-6, Aurangabad, Maharashtra, India - 431003.

Corresponding Author: Vishal Dalvi

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ABSTRACT

We report a 55-year-old man who presented with sudden onset breathlessness and palpitation. Electrocardiogram (ECG) revealed monomorphic LBBB morphology ventricular tachycardia (VT). 2D echo was suggestive of right ventricle dilated, with mild RV dysfunction. Coronary angiography didn't reveal culprit lesion but CT pulmonary angiography confirmed diagnosis of pulmonary artery thromboembolism.

Keywords: Ventricular tachycardia (VT), Pulmonary embolism (PE).

INTRODUCTION

Pulmonary Embolism (PE) is a relatively common disease that can be life threatening. [1-3] The clinical presentation is variable and sometimes it is difficult to depend on signs and symptoms for diagnosis. Early diagnosis and treatment can decrease mortality.[4] Variable Electro-cardiogram (ECG) patterns are found in patients with PE.[5,6] Pulmonary embolism presenting with ventricular tachycardia (VT) is extremely rare.

CASE REPORT

A 55 year old man admitted in MGM hospital with complaint of sudden onset breathlessness & palpitation. He gave history of low grade fever and dry cough since 3 days. On examination, patient was afebrile, conscious, oriented, with pulse 150 beats/min, BP 90/60mmHg, RR 28 cycles/min, SPo2 90% on room air. CVS-tachycardia RS- Air entry bilaterally equal and clear.ECG was done which was suggestive of monomorphic LBBB morphology ventricular tachycardia (VT) (fig 1). In emergency department Inj. amiodarone was given and patient was shifted to MICU. Ventricular tachycardia was persistent with hypotension. Synchronised bipolar DC shock of 100J was given and patient reverted back to normal sinus rhythm (fig 2). Post DC ECG was done which suggestive of T wave inversion

in lead V1-4. As a suspicion of ACS (NSTEMI), CPK-MB & Trop T was done which was normal. Sodium (Na^+), Mgso4 & T3,T4,TSH were done which was within normal limits. Coronary angiography (CAG) was done which was normal (Fig no 3). Chest X-ray was normal. 2D echo was suggestive of RV dilatation with RV dysfunction with mild TR, no clot, thin rim of pericardial effusion. As a suspicion for Arrythmogenic Right Ventricular Dysplasia (ARVD) he was started on Tab Sotalol. After 3 days of treatment in MICU patient again had sudden onset breathlessness and palpitation. Monitor showed ventricular tachycardia with HR of 170 beats/min, with BP 100/70 mmHg, treated with synchronized bipolar DC shock of (100J) given and patient VT reverted back to normal sinus rhythm. But cause of recurrent VT, on futher evaluation. D-dimer was done which was high (5011ng/ml) .CT pulmonary angiography was done which was suggestive of filling defect in left pulmonary artery suggestive of pulmonary artery thromboembolism (Fig no. 4). Then patient was treated with IV Heparin. Patient was discharged with Tab. Warf 5mg od.

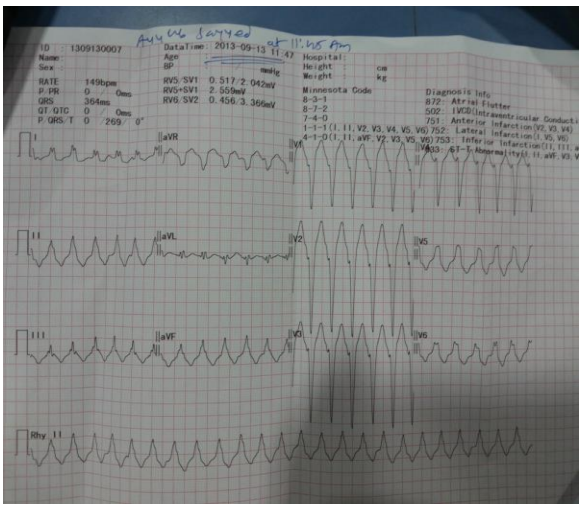

Fig no. 1:- Monomorphic LBBB morphology ventricular tachycardia (VT).

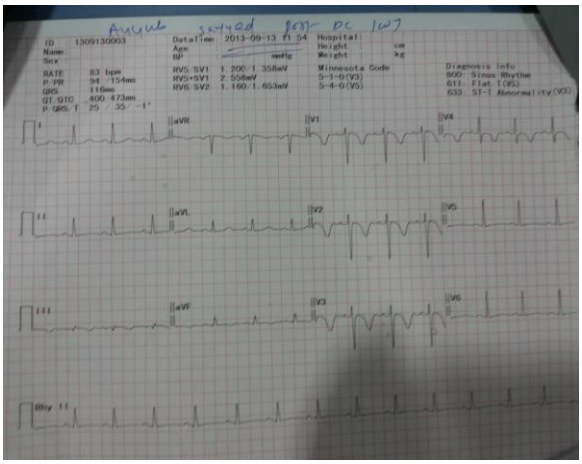

Fig no. 2:-ECG:- Normal sinus rhythm with inverted T wave in V 1 - 4.

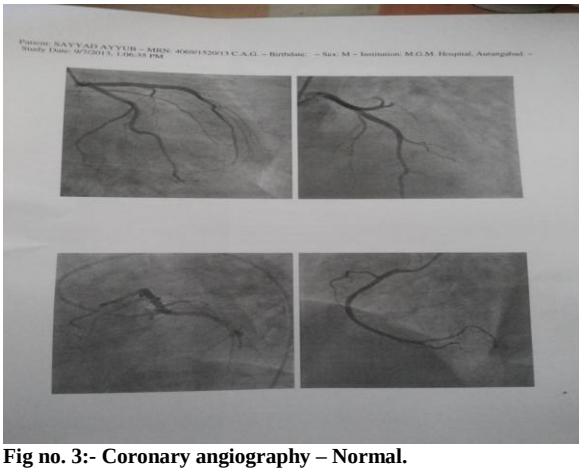

Fig no. 3:- Coronary angiography – Normal.

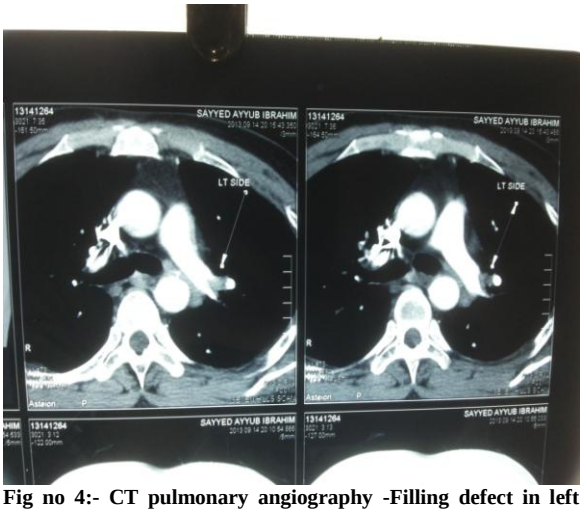

Fig no 4:- CT pulmonary angiography -Filling defect in left pulmonary artery suggestive of pulmonary artery thromboembolism.

DISCUSSION

Common causes of monomorphic LBBB morphology ventricular tachycardia (VT) are Coronary artery disease, cardiomyopathy, electrolyte (notably potassium and magnesium) abnormalities, metabolic derangement affecting the homogeneity of ventricular repolarization & arrhythmogenic right ventricular dysplasia. In our patient ARVD was suspected because of the original 1994 International Task Force criteria for the clinical diagnosis of ARVC/D were based on structural, histological, ECG, arrhythmic, and familial features of the disease. [7] 1 major & 2 minor criteria. 2D echo was suggestive of RV dilatation with RV dysfunction. Ventricular tachycardia with a left bundle branch block (LBBB) morphology (Fig no 1), & baseline ECG suggestive of inverted T wave in V 1 - 4 in the absence of right bundle branch block (RBBB) (Fig no 2). But the cause of recurrent VT was not clear so further investigation was done.

The diagnosis of pulmonary embolism (PE) is based primarily on validated clinical criteria combined with selective testing. Shortness of breath and pleauritic chest pain are the most common symptoms experienced by patient with PE, other symptoms include; productive cough, fever, syncope, hemoptysis, palpitation and seizures. In addition, massive PE can present by shock and even sudden death. [8-12]

Pulmonary Embolism has been known to be associated with different morphological ECG changes, the predominant rhythm abnormalities is sinus tachycardia, some PE cases have ECG changes suggestive of acute right ventricular strain like, incomplete or complete right bundle branch block, an S1Q3T3 pattern (defined as an S wave in lead I, a Q wave in lead III, and an amplitude of >1.5 mm associated with inversion of the T wave in lead III), inverted T waves in the second and third precordial leads. [13-16] Pulmonary embolism presenting with ventricular tachycardia is extremely rare.

CONCLUSION

Our case strengthens the need for a thorough search for pulmonary embolism, if there is no other obvious cause of ventricular arrhythmias.

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