



BMH Med. J. 2018;5(1):4-7 **Case Report**

## Calcified Left Ventricular Aneurysm Presenting As Recurrent Ventricular Tachycardia

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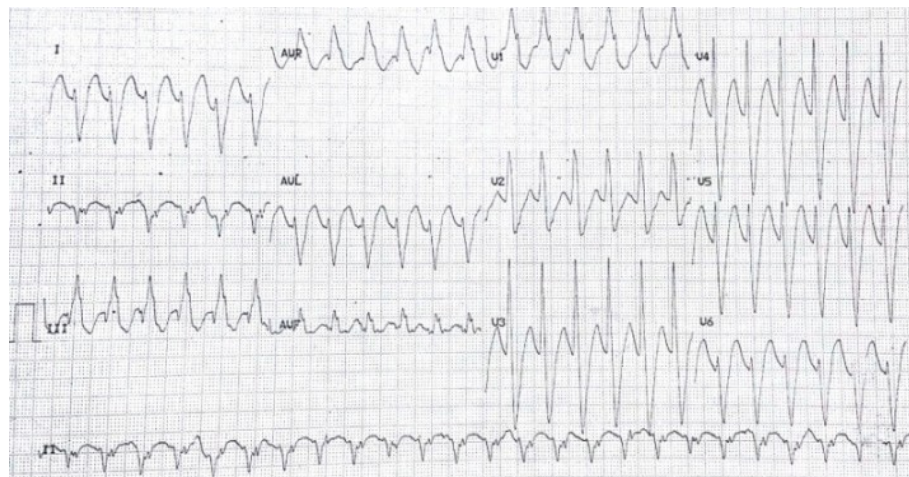
### Abstract

Left ventricular aneurysm is generally a complication of myocardial infarction. The aneurysm occurs in the wall of the heart at the spot where the myocardial infarction occurs and a scar usually forms in the area of the dead muscle tissue, and may eventually calcify. Aneurysms are associated with serious complications as congestive heart failure, thrombo embolic episodes and serious ventricular arrhythmias. We present a case of calcified ventricular aneurysm presenting as recurrent ventricular tachycardia.

**Keywords:** left ventricular aneurysm, calcified; ventricular tachycardia

### Case Report

A 62 year old male a known case of coronary artery disease, old anterior wall myocardial infarction, diabetes mellitus and peripheral vascular disease, presented to Cardiology OPD with history of chest discomfort of two days duration. He was found to be having tachycardia and ECG showed monomorphic Ventricular tachycardia (**Figure 1**).



**Figure 1:** ECG showing monomorphic ventricular tachycardia

He was shifted immediately to the cardiac ICU and started on amiodarone infusion, but there was no

response. Initial cardioversion with 200 Joules was unsuccessful. Finally sinus rhythm (**Figure 2**) was attained with the third attempt of 200 J shock after intravenous magnesium loading.

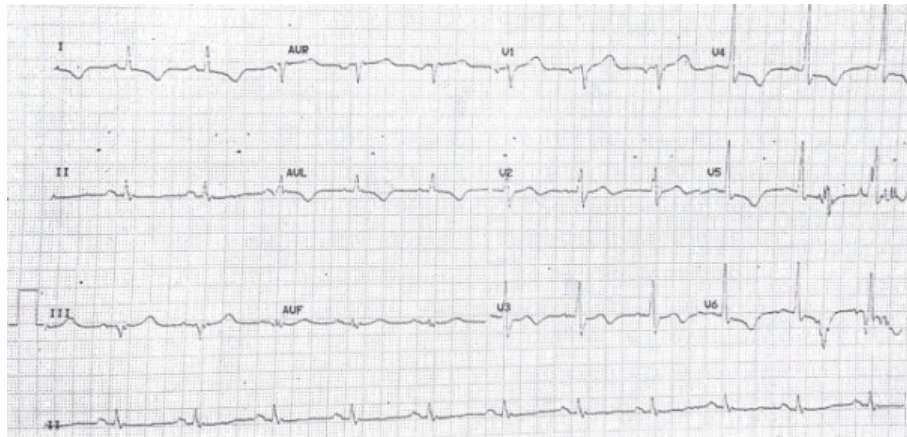


Figure 2: ECG in sinus rhythm, after successful cardioversion

Routine portable chest X-ray taken from the ICU showed calcified left ventricular aneurysm (**Figure 3**).

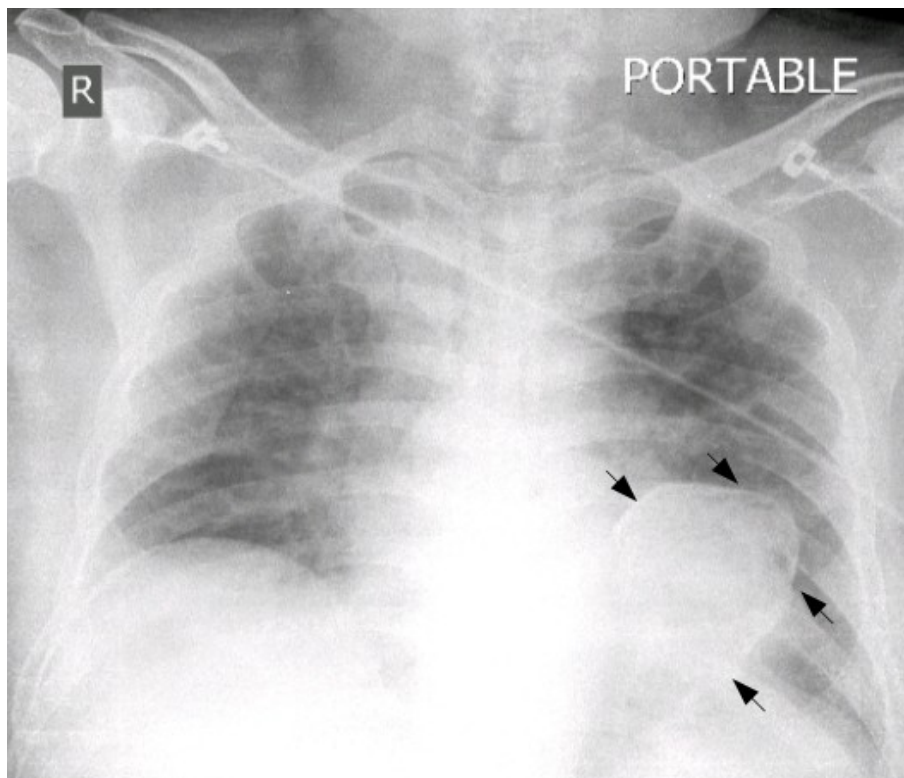


Figure 3: Bedside X-ray chest showing calcified left ventricular aneurysm

Echocardiogram showed large left ventricular aneurysm, mild mitral regurgitation, severely depressed left ventricular systolic strain and severe left ventricular systolic dysfunction (ejection fraction 30%). Treatment option of surgical resection of the aneurysm, revascularization, and ablation of the focus followed by implantation of a defibrillator (ICD) was discussed.

## Discussion

Left ventricular aneurysm is usually defined as a segment of ventricular wall that exhibits paradoxical systolic expansion. It is generally a complication of myocardial infarction. Aneurysm formation occurs when intraventricular tension stretches the non-contracting infarcted myocardium, causing bulging of the infarcted area with each contraction. There can be a true aneurysm or a pseudo aneurysm. A true aneurysmal sac contains endocardium, epicardium and thinned fibrous

tissue which is a remnant of the left ventricular muscle, while a pseudo aneurysm sac represents pericardium that contains a ruptured left ventricle.

Earlier the incidence was estimated that left ventricular aneurysm develops in up to 30 to 35 percent of patients with myocardial infarction. However, the incidence of this complication is decreasing, and currently is about 8 to 15 percent in such patients. This change is related to the early reperfusion therapy. More than 80% of left ventricular aneurysm is located in the anterolateral segment near the apex which is often associated with total occlusion of the left anterior descending branch of left coronary artery and poor collateral blood supply [1].

Half of the patients with moderate or large aneurysm have symptoms of congestive heart failure with or without angina. It can also cause ventricular arrhythmias that may be intractable and life threatening as well as mural thrombi is found in almost half of the patient with chronic left ventricular aneurysm.

The clue to the presence of aneurysm is persistent ST segment elevation on the resting ECG in the absence of chest pain. Our patient had ECG evidence of anterolateral T inversions and Q in inferior leads. ST segment was not elevated. The location of the aneurysm was in the infero lateral segment which is unusual and may explain the atypical features. Echocardiogram showed typical dyskinesia in this segment. There was no clot. Radiologically aneurysm was imaged well and calcification marked the size of the aneurysm. This patient had recurrent ventricular tachycardia. About one month before the present admission he had cardioversion of another episode of ventricular tachycardia.

Vast majority of LV aneurysms are secondary to coronary artery disease. Sarcoidosis is another cause for left ventricular aneurysm with ventricular tachycardia [2]. Increasing use of non-invasive imaging has allowed earlier recognition. Improvement in surgical anaesthesia has resulted in more successful aneurysm surgery [3]. Cumulative survival at 1 year and 4 year was 90% and 70% in the CASS registry. Possible complications are ventricular arrhythmias, congestive heart failure, angina, thromboembolism and rupture (extremely rare). Presence of ventricular arrhythmias carry poor prognosis and is seen in one third of all patients.

Treatment of large aneurysm is by resection and repair [4]. Sometimes even after repair ventricular tachycardia may occur. The diagnosis of aneurysm is done by imaging such as chest x-ray, echo cardiography, computed tomography and magnetic resonance imaging. A contrast ventriculography and coronary angiography are necessary to evaluate the location and anatomy of the aneurysm and the state of the coronary arteries while planning resection of aneurysm with or without revascularization.

Since our patient presented with recurrent ventricular tachycardia, the and relatives were counseled about the complications, treatment option of surgical resection of the aneurysm, revascularization, and ablation of the focus with ICD implantation. The patient was not ready for the procedure and got discharged at request.

## References

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