

## A Giant Unruptured Left Ventricular Pseudoaneurysm Followed by a Silent Myocardial Infarction

Hatice Selcuk, MD, MD. Omac Tufekçýođlu, MD. M. Timur Selcuk, MD. Ozcan Ozeke, MD. Orhan Maden and MD. Sule Korkmaz  
Department of Cardiology, Turkiye Yuksek Ihtisas Hospital, Ankara, Turkey

**Abstract:** Left ventricular pseudoaneurysm is a rare and potentially fatal complication of myocardial infarction. We report a case of an unruptured giant left ventricular pseudoaneurysm in a 72-year-old woman possibly after a silent myocardial infarction. The patient admitted to our clinic for progressive dyspnea and anginal pain for 7 years. Echocardiography showed a giant (7x11 cm sized) pseudoaneurysm with thrombus in the internal wall. This case illustrates that a silent myocardial infarction could well be followed by pseudoaneurysm development and underlines the diagnostic value of transthoracic echocardiography.

**Key words:** Left ventricle, pseudoaneurysm, silent myocardial infarction

### INTRODUCTION

Cardiac pseudoaneurysm (PA) is defined as a rupture of myocardium that is contained by pericardial adhesions or the epicardial wall<sup>[1]</sup>. It is a dramatic and often fatal complication that typically occurs three or five days after the onset of acute Myocardial Infarction (MI). Because of a high incidence of spontaneous and frequently fatal ruptures, the treatment of choice is surgical resection<sup>[2]</sup>.

Cardiac surgery<sup>[3]</sup>, infective endocarditis<sup>[4]</sup>, blunt force trauma<sup>[5]</sup> and lymphoma<sup>[6]</sup> are the other causes of left ventricular PA.

Here we report the case of a female patient in whom development of PA presented with progressive anginal pain and dyspnea on exertion, possibly after a silent MI.

### CASE REPORT

A 71-year-old woman admitted to our outpatient clinic with the complaint of exertional dyspnea. She had diabetes mellitus and hypertension as major cardiovascular risk factors. Physical examination revealed a blood pressure of 140/90 mmHg with a regular pulse of 80 beats/min. The electrocardiogram showed abnormal Q waves in leads II, III, avF, T wave inversions in leads II, III and avF, V5-6, despite the absence of prior history of a MI. On further questioning she gave a history of a sudden and severe dyspnea episode 7 years ago. Transthoracic echocardiography demonstrated reduced left ventricular function and a 7x11 cm sized PA at the basal and mid segments of posterolateral wall of the left ventricle, the internal surface of which was covered by a thick

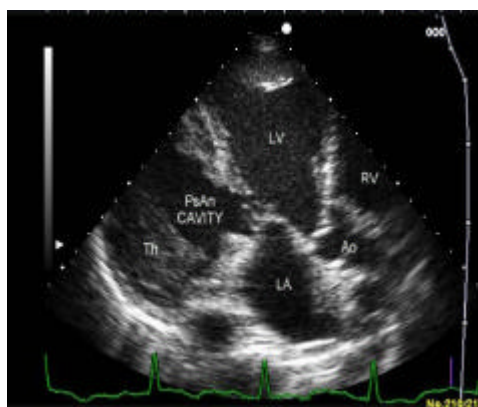


Fig. 1: Transthoracic apical five chamber view of pseudoaneurysm of lateral wall of left ventricle with intramural thrombus

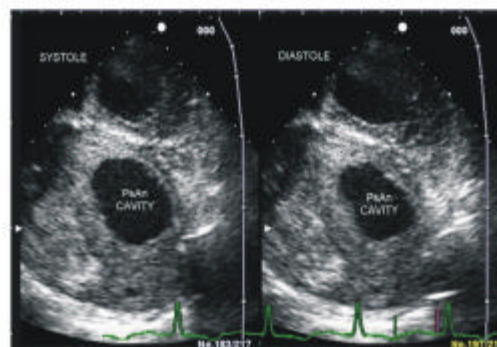


Fig. 2: Modified parasternal short axis views of the pseudoaneurysm cavity. It expands in systole and collapses in diastole

thrombotic layer. The neck connecting the left ventricle and PA was narrow (Fig. 1). Systolic filling and diastolic collapse of the postinfarction PA cavity was also detected at echocardiography (Fig. 2). The patient underwent coronary angiography which disclosed a severe left anterior descending and right coronary artery lesions. The patient refused surgery both for coronary arteries and PA.

### DISCUSSION

Pseudoaneurysm of the left ventricle is a rare cardiac complication, which is created after wall rupture of the left ventricle<sup>[7]</sup>. The PA is described as a located cavity which is formatted following rupture of the wall of the left ventricle and withholding of the blood from the solid fibrous symphysis of the pericardium layers<sup>[8]</sup>.

Left ventricular PA are prone to rupture<sup>[9]</sup>, however, there are occasional reports of prolonged survival of a patient with an unruptured left ventricular PA<sup>[10]</sup>.

Patients who had PA after MI tended to present with recurrent anginal chest pain, congestive heart failure and rarely with arrhythmia, syncope and systemic embolism<sup>[11]</sup>. Myocardial rupture causing death reportedly occurs in 7 to 10% patients after acute MI<sup>[12]</sup>. Only 10% of left ventricular PA are asymptomatic. In the present case, the clinical manifestation of PA development was the appearance of heart failure symptoms.

Two dimensional echocardiography, computed tomography, magnetic resonance imaging and left ventricular angiography are the imaging methods that have been used to diagnose the PA<sup>[13,14]</sup>.

The typical transthoracic echocardiographic features of PA include a relatively narrow neck in comparison with the diameter of the aneurysm and sharp discontinuity of the endocardium at the site at which the aneurysm communicates with the left ventricle<sup>[13]</sup>. As observed in our case, the most common site for post MI localization is the inferior or posterior wall in 76- 83% of such cases<sup>[15]</sup>.

In our case, the diagnose of PA is established by transthoracic echocardiography which constitute the most characteristic echocardiographic criteria of PA by showing the narrow neck as compared to the aneurysm sac and the presence of thrombus in the internal wall.

Despite postinfarction PA are usually described in the setting of a clinically overt myocardial infarctions<sup>[11]</sup>, there are a few reported case of left ventricular PA following a silent MI<sup>[16,17]</sup>. This case illustrates that a silent MI could well be followed by PA development. It is our opinion, also an interesting occurrence that a PA of such gigantic properties has not become clinically manifest throughout the last 7 years. Transthoracic echocardiography is valuable in making the correct

diagnose and echocardiographic assesment should better be done following MI, because PA could be missed during the cardiac examination.

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