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Left Ventricular Pseudo Aneurysm Post Myocardial Infarction: A Case Report

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Abstract

Left ventricular pseudoaneurysm is a mechanical complication of transmural myocardial infarction caused by coronary artery occlusion. Cardiac imaging, dominated by MRI and CT SCANN plays a key role in characterization of this entity. We report the case of a left ventricular pseudoaneurysm post myocardial infarction in a 80-year-old patient after an inferior myocardial infraction.

Keys words: pseudoaneurysm; myocardial infarction; CT scan; coronary occlusion.

1. Introduction

Left ventricular pseudoaneurysm is a result of rupture of the ventricular free wall but contained by the overlying adherent pericardium or scar tissue, it can be presented in a non-specific manner, complicating and delaying the diagnosis. the differential diagnosis with the true Left Ventricular aneurysm remains difficult and depends on Imaging Modalities.

The patient described in this paper demonstrates that the heart CT scan may provide a safe and accurate diagnostic method to visualize pseudoaneurysms and make a therapeutic decision without delaying the surgical act.

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2. Observation

We report the case of an 80-year-old man without cardiovascular risk factors, known as a coronary patient since 2005 under medical treatment, who presented an effort angina stage II of CCS classification with a dyspnea stage II of NYHA classification without other associated signs.

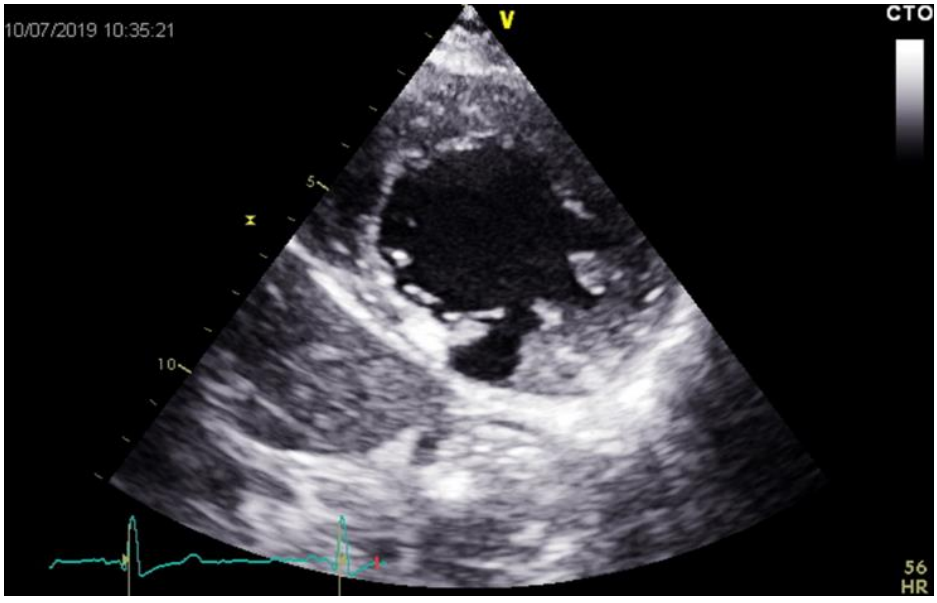
The clinical examination found a conscious patient, eupneic with BMI at 18.21kg / m², the cardiovascular examination found a BP at 121 / 51mmhg with heart rate at 56 cpm with a mitral regurgitation murmur without any other clinical findings.

Electrocardiogram showed regular sinus rhythm with negative T waves in inferior and pointed T waves in anterior territory.

Transthoracic echocardiography showed non-enlarged, non-hypertrophied Left Ventricle with akinesia of the basal and mid-posterior wall segments complicated by a 15/16 mm pseudoaneurysm free of thrombus with an ischemic mitral regurgitation. The ejection fraction estimated at 63% with an important pulmonary hypertension probability.

A heart CT scan with multiple reconstructions has shown an Ischemic heart disease with necrosis and pseudo aneurysm of posterior LV wall [18mm/15mm] with Pleural effusion

Coronary angiography showed a tritroncular lesions with significant stenosis of the first diagonal artery and the first marginal artery and the second segment of the right coronary artery. Patient was discharged under medical treatment after refusal of surgery.



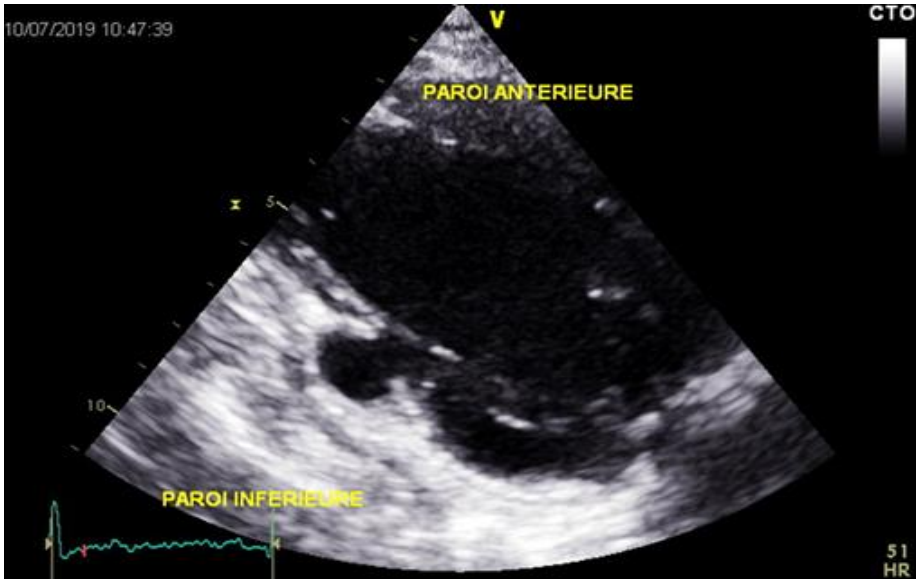


Figure 1: Transthoracic echocardiography screenings revealing the pseudoaneurysm of Left Ventricule.

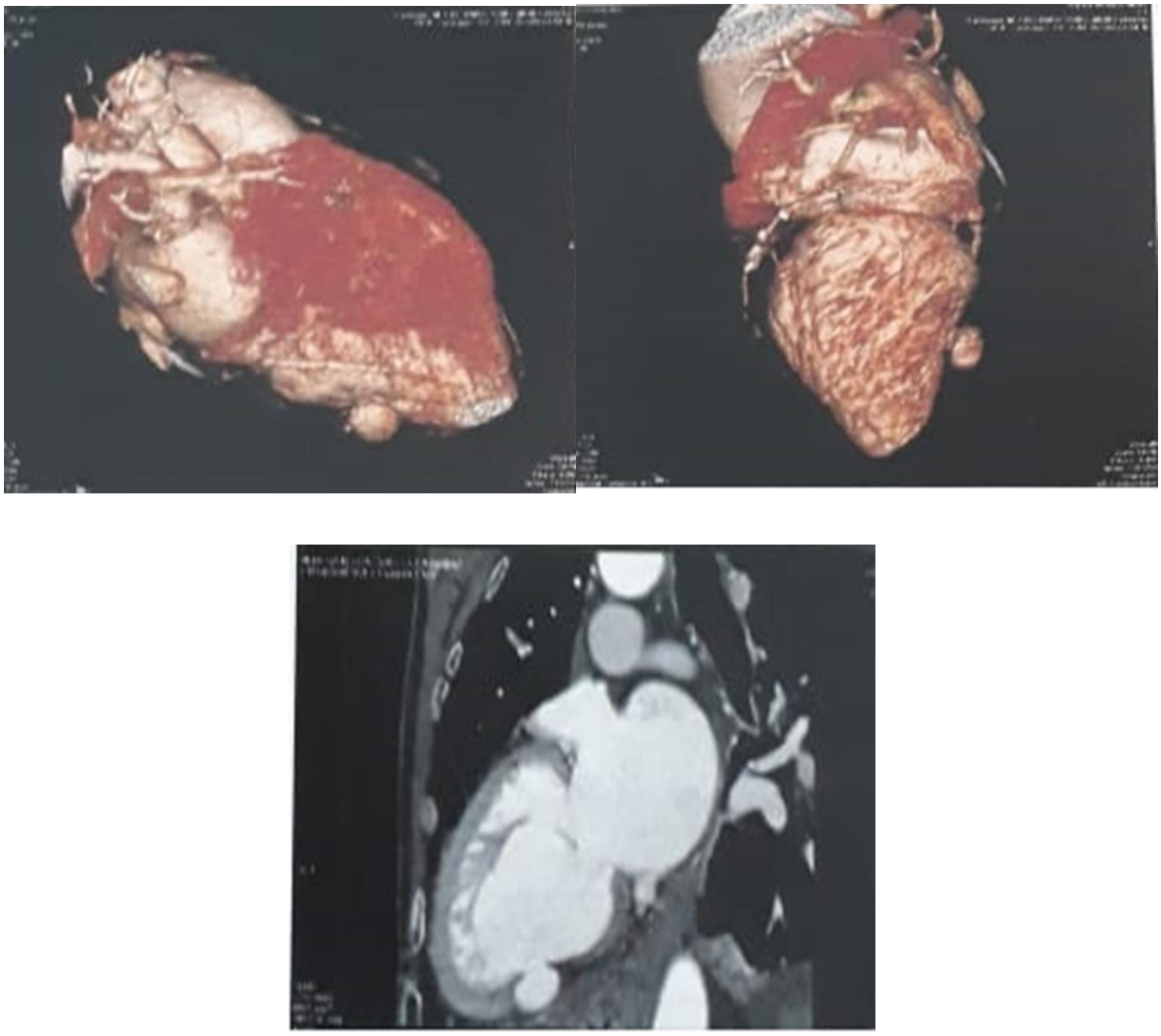


Figure 2: A heart CT-scan screenings visualizes the pseudoaneurysm of LV.

3. Discussion

Left ventricle pseudo aneurysm occurs most often after transmural myocardial infarction. These unusual cardiac lesions, in contrast to true ventricular aneurysms are prone to spontaneous rupture. Thus, the detection of left ventricular false aneurysm is clinically and therapeutically important even in the asymptomatic patient [1].

The myocardial infarction accounted for most Left Ventricle pseudo aneurysms followed by cardiac surgery, trauma, and infection. Inferior myocardial infarctions account for approximately twice as many cases as anterior myocardial infarctions [2].

The most frequently reported symptoms are heart failure, chest pain and dyspnea, with other nonspecific complaints such as cough, altered mental status, and dizziness. The physical examination finds a new murmur, but thirty percent of patients don't have a detectable murmur. Electrocardiographic and chest X-ray abnormalities are present in 95% of patients [2].

As discussed above, the signs and symptoms in the population at risk are neither sensitive nor specific for aneurysm or pseudoaneurysm. Therefore, imaging is usually required to diagnose or to identify the presence of other pathology accounting for the patient's signs and symptoms. Angiography of the left ventricle and coronary arteries was considered to be the best available test for the diagnosis of LV pseudoaneurysm [2].

Transthoracic 2D echocardiography Initial evaluation may be unrevealing, therefore the use of CT scan and MRI remains a good alternative [3].

The high spatial Resolution and tissue characterization of cardiac MRI make it ideal for evaluation of pseudo-aneurysm of the ventricles and for distinguishing pseudoaneurysm from true aneurysms. In such cases, the use of late gadolinium enhancement to identify the location and transmural extent of prior infarcts is particularly valuable [1].

Cardiac CT offers high spatial resolution and provides an excellent visualization of the Left Ventricle myocardium, coronary arteries, and bypass grafts. After diagnosis, no guidelines address whether to pursue follow-up imaging Cardiac pseudo-aneurysms are rare but clinically significant lesions [1].

Although often challenging to diagnose, advances in noninvasive imaging improve the ability to distinguish aneurysm from pseudoaneurysm. Most symptomatic require surgical repair.

4. Conclusion

The pseudo aneurysm of left ventricle remains a rare pathology whose diagnosis is difficult and requires additional imaging tests to ensure prompt care for the patient.

CT Scan and MRI are the most Imaging modalities which can better characterize this entity and improve the treatment.

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