



### RESEARCH ARTICLE

## LARGE LEFT VENTRICULAR INFEROBASAL ANEURYSM FOLLOWING CIRCUMFLEX ARTERY OCCLUSION.

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### Abstract

The majority of cardiac left ventricular aneurysms involve the anterior and/or apical wall. We present a case of a 57-year-old man with acute coronary syndrome with ST segment elevation complicated of a large inferobasal left ventricular aneurysm which remains rare.

#### Key words:-

True ventricular aneurysm, severe mitral regurgitation, coronary angiography, ventriculography, echocardiography.

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### Introduction:-

Left ventricular aneurysms are mechanic complications of myocardial infarction (MI). They are hemodynamically important pathologies. They were developing frequently during post-myocardial infarction period before reperfusion era; fortunately nowadays they are seen very rarely. We report the case of a patient who presented with inferior myocardial infarction that caused development of a rare aneurysm in the basal segment of the inferior wall, and summarize the literature regarding diagnosis, prognosis and clinical history of this particular finding.

### Case report :

We report the case of 57 year old man without medical history, admitted to our cardiology department for acute coronary syndrome with ST segment elevation. The electrocardiogram showed ST – segment elevation with Q waves in the inferior leads. Transthoracic echocardiography revealed a large diskentic aneurysm involving the inferobasal wall of the left ventricle, measuring 40\*30 mm without thrombus. The LV was not dilated with normal ejection fraction ( EF) of 65% . The coronary angiography showed an occlusion of the circumflex coronary artery. Medical therapy was prescribed instead of stent implantation .

### Discussion:-

Left ventricular aneurysm consists of localized area of myocardium with abnormal outward bulging and deformation during systole and diastole. The aneurysms appear like a thin, akinetic or dyskinetic region and collapse inward when the ventricle is vented during surgery. Aneurysm formation is a consequence of infarct expansion (1).

Clinical data suggest that infarct expansion occurs in approximately 35% to 45% of anterior MI and to a lesser extent in infarctions at other sites (1). Basal inferior wall aneurysms constitute nearly 3% of all LV aneurysms (2) The incidence of LV aneurysm has decreased from about 18,8% to 7,2% in recent years due to improvement in the management of acute coronary syndromes ,including thrombolysis and angioplasty (3).

Aneurysms are seen four times more often as a complication of anterior MI than inferior MI (4). Besides atherosclerotic coronary artery disease, other uncommon causes of LV aneurysm include hypertrophic

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cardiomyopathy, arrhythmogenic right ventricular dysplasia, myocarditis, coronary artery fistula, chest trauma, infections like Chaga's disease and HIV, and connective tissue diseases like sarcoidosis and systemic lupus (5). Transthoracic and transesophageal echocardiography are the most useful modalities used in the evaluation of left ventricular aneurysm because of their reliability and reproducibility.

Cardiac magnetic resonance imaging and ventriculography can provide additional information, particularly in the differential diagnosis of pseudoaneurysm. The finding of an inferobasal LV aneurysm requires an accurate differential diagnosis of pseudoaneurysm that typically can develop in posterior-inferior segments.

Histopathologically, the pseudoaneurysm wall consists of only the pericardial layer while a true aneurysm is delimited by all three layers (pericardium, myocardium, endocardium). The presence of a turbulent flow at the neck by color Doppler has been proposed as sign of pseudoaneurysm, but the absence of turbulence cannot exclude this finding (6,7). Stagnant flow inside the aneurysm can lead to formation of thrombus and consequent embolism, therefore an accurate evaluation of the internal surface of the cavity by echocardiography is highly recommended. (8)

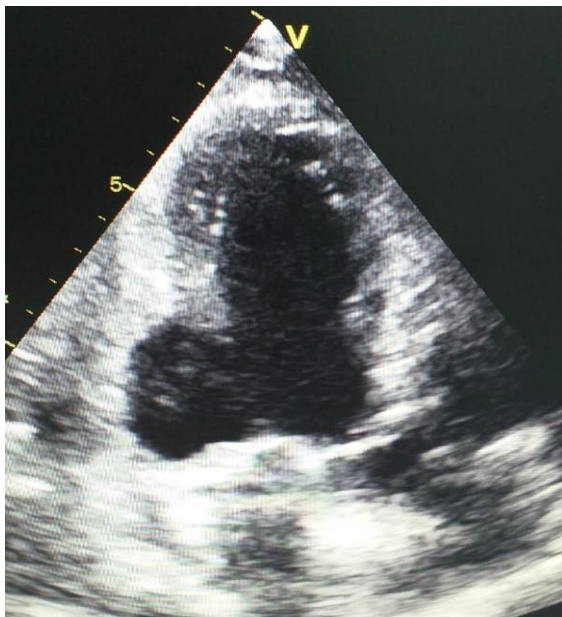
Transesophageal echocardiography and three-dimensional, real-time echocardiography provide a more accurate evaluation of the LV aneurysm morphological features, detecting the eventual thrombosis and accurately quantifying the severity of mitral regurgitation.

Cardiac magnetic resonance imaging (CMR) emerged as a novel imaging modality in the evaluation of LV aneurysm. Due to tissue characterization, CMR is able to distinguish the signal of the pericardium and myocardium, differentiating true inferior LV aneurysms from pseudoaneurysm (9).

Therapeutic strategy for inferobasal LV aneurysm is usually conservative because the risk of rupture is low. Guidelines recommend angiotensin-converting enzyme inhibitors or angiotensin receptor blockers and aldosterone antagonist to reduce negative LV remodeling and improve survival; the finding of a mural thrombus requires anticoagulation.(10)

Surgical treatment is carried out in patients presenting with refractory clinical manifestations such as heart failure, angina, arrhythmia and embolism.

The goal of surgical intervention is to correct the size and geometry of the left ventricle, reduce wall tension and paradoxical movement, and improve systolic function.(11)



**Fig1:-**Two-dimensional transthoracic echocardiography : Apical 2-chamber view revealing a giant ventricular infero-basal wall aneurysm .



**Fig2:-**Coronary angiography of the left coronary artery showing Occlusion of the circumflex coronary artery in the distal portion.

The aneurysms appear like a thin, akinetic or dyskinetic region and collapse inward when the ventricle is vented during surgery. The aneurysms appear like a thin, akinetic or dyskinetic region and collapse inward when the ventricle is vented during surgery.

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