Introduction: We are presenting a case of left ventricular aneurysm vs. pseudoaneurysm, imaging, and a discussion of the management of such cases.

Case Presentation: A 74 year old male with a history of hypertension and tobacco use presented with abdominal pain. A 10 cm ruptured abdominal aortic aneurysm was found. After open repair by vascular surgery, he was admitted to the intensive care unit (ICU). On day 2 he developed orthopnea, diaphoresis, and nausea. Troponin level was 23 and his ECG was consistent with a posterior wall myocardial infarction. Angiography revealed severe left anterior descending (LAD) and left circumflex disease, left ventricular end diastolic pressure of 22, and pulmonary hypertension. An intra-aortic balloon pump was placed; the patient was transferred to the cardiac ICU. Transthoracic echocardiogram (TTE) revealed an ejection fraction (EF) of 15% with an aneurysm in the basal-mid posterior-inferior wall. His congestive heart failure was treated, cardiac surgery was consulted for coronary artery bypass grafting. Intraoperative transesophageal echocardiography (TEE) showed an EF of 15% and a large inferolateral wide based 3-4 cm ventricular aneurysm with intracavitary spontaneous contrast. Left internal mammary artery (LIMA) to LAD and a saphenous vein graft to diagonal were done, the patient was weaned from (CPB), and was transferred to the cardiac ICU.

Discussion: Discerning ventricular pseudoaneurysm from a true aneurysm based on non-invasive studies can be difficult. Given the propensity for a pseudoaneurysm to rupture, accurate diagnosis of these conditions is clinically important (1). Pseudoaneurysm is a rare complication of myocardial infarction. It is defined as a rupture of the myocardium, contained by pericardial adhesions. The result is the formation of a that maintains communication with the left ventricular cavity. Unlike a true aneurysm, which is surrounded by myocardium, the walls of a false aneurysm are only composed of organized hematoma and pericardium.

True aneurysms are likely to rupture only in the early post infarction period and are often managed medically. Surgical repair is indicated only when there is associated CHF or arrhythmia, and it is successful only if there is preservation of contractility in the normal portion of the left ventricle. Our patient presented with what appeared to be a pseudoaneurysm by TEE and TTE alone; however, intraoperative examination revealed an aneurysm. This changed the surgical treatment of his disease.

References:
1) May, Bryan V, Reeves ST., Contained rupture of a left ventricular pseudoaneurysm; Anesthesia & Analgesia 2007; 105(1) 38-39
2) Zoffoli G, Mangino D, et al., Diagnosing left ventricular aneurysm from pseudo-aneurysm: Journal of Cardiothoracic Surgery 2009; 4;11
3) Brown SL, Groper RJ, Harris KM., Distinguishing left ventricular aneurysm from pseudoaneurysm: Chest 1997; 111; 1403-1409