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Giant left ventricular (pseudo?)aneurysm complicating anterior myocardial infarction

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Introduction: Clinical approach of cardiac aneurysms and pseudoaneurysms is significantly distinct. Therefore, it is crucial to accurately differentiate these two entities, which could be a real challenge.

Case report: We describe a case of a 55-year-old woman, with hypertension and previous smoking habits. She was admitted in our Cardiology Department with the diagnosis of anterior acute myocardial infarction, and was submitted to emergent coronariography, unveiling an occlusion of the middle segment of the anterior descending artery. She underwent successful primary percutaneous coronary intervention (PCI) 1h45 after the chest pain onset. Transthoracic echocardiogram (TTE) revealed depressed left ventricle ejection fraction (LVEF 30%), with akinesia of anterior and septal walls and all apical segments. She evolved in Killip-Kimbal class 2 and was discharged clinically stable. One week later, the patient performed a control TTE that showed an apical thrombus, with a small pericardial effusion, and she initiated warfarin. Three weeks later, a reevaluation TTE demonstrated a severe increase of the left ventricle dimensions, with LVEF 32%, and a small pericardial effusion. In apical 4-chambers incidence, it was visualized a linear structure (42 mm x 5 mm) attached to the endocardial border of the anterolateral apical segment and to the apical segment of the interventricular septum, of undefined nature. The apical segments were dyskinetic and had a very thin wall, which could correspond to aneurysm versus pseudoaneurysm. To clarify these findings, the patient performed a cardiac magnetic resonance revealing a large anterior myocardial infarction complicated with extensive myocardial necrosis, severe depression of LV systolic function (LVEF 25%) and septum rupture distal to the right ventricle apex (without connecting with it), compatible with a large apical pseudoaneurysm. The clinical case was discussed in the Heart Team and it was decided to perform cardiac surgery. However, surgical findings showed integrity of septal and free walls, and she underwent an aneurysmectomy, without further complications. Histological examination confirmed the presence of a thin myocardial wall with marked fibrosis and, consequently, the diagnosis of ventricular aneurysm. She was discharged clinically stable and maintains follow-up in Cardiology consultation of our Hospital.

Conclusion: In this patient, initially admitted with an anterior myocardial infarction submitted to primary PCI, follow-up with advanced imaging modalities pointed to the diagnosis of pseudoaneurysm. Despite the preoperative diagnosis, surgical findings were compatible with a giant left ventricular aneurysm. Even with high spatial resolution exams, postoperative evaluation of tissue layers remains the gold standard for this differential diagnosis.

Abstract P871 Figure. Apical pseudoaneurysm vs aneurysm

