UCLA Health

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Abstract Form

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Project Title:	Antiphospholipid syndrome presenting as acute myocardial infarction.

Research Category (please check one):

☐	**Original Research**	☒	**Clinical Vignette**	☐	**Quality Improvement**	☐	**Medical Education Innovation**

Abstract

Introduction: Antiphospholipid syndrome (APS) is a rare autoimmune disease characterized by recurrent venous and/or arterial thromboses in association with circulating antiphospholipid antibodies. Classification criteria for APS require at least: one clinical criterion such as vascular thrombosis (an episode of venous or arterial thrombosis in any tissue or organ) or pregnancy morbidity and one laboratory criteria including the presence of antiphospholipid antibodies such as IgG/IgM anticardiolipin antibodies, IgG/IgM anti-beta2 glycoprotein, or lupus anticoagulant activity 12 weeks apart. A myocardial infarction (MI) may be the first manifestations of APS.

Case summary: A 24-year-old male with no past medical history presented from an outside community hospital with left-sided, non-exertional chest pressure radiating to his left shoulder associated with nausea and diaphoresis. He was found to have ST segment elevations in the anterolateral and inferior ECG leads and diagnosed with ST elevation myocardial infarction (STEMI) and transferred to Harbor-UCLA for diagnostic angiography and further care. Past medical history was only significant for marijuana use but no other illicit drug use. Family history was also negative for myocardial infarction or sudden cardiac death. Vitals/Physical exam: T 37.4C, HR 64, RR 26, BP 131/109, SpO2 100% on room air. On physical exam, patient appeared uncomfortable, however cardiopulmonary exam was normal.

Results: An emergent coronary angiography where 100% occlusion of the mid left anterior descending coronary artery (LAD) with a large thrombus burden was found. Balloon angioplasty (PTCA) of the LAD was performed in addition to aspiration thrombectomy, which resulted in restoration of blood flow to the LAD, however residual intracoronary thrombus remained All other coronary arteries were of normal caliber and without disease. Work-up and risk stratification for atherosclerosis was initiated included a lipid panel and hemoglobin A1C which were relatively unremarkable. A transthoracic echocardiogram (TTE) with bubble study showed a normal ejection fraction of 60-65%, with no regional wall abnormalities or significant valve disease seen. No patent foramen ovale was seen on 2D/Doppler imaging. In addition to the TTE, the cardioembolic work-up included Doppler ultrasound of all extremities which did not reveal any arterial or venous abnormalities. A hypercoagulable work-up ensued. This included laboratory testing for lupus anticoagulant antibody, erythropoietin level, antiphospholipid antibody panel, factor V mutation analysis, homocysteine level, protein C&S activity, and prothrombin 20210G>A. The patient's antiphospholipid panel which included B2 glycoprotein IgM antibody, Cardiolipin IgA, Cardiolipin IgG, Cardiolipin IgM, Lupus anticoagulant antibody and antiphospholipid IgG antibody were all positive, exceeding the normal range. Patient was diagnosed with APS and myocardial infarction with nonobstructive coronary arteries (MINOCA) and discharged on aspirin, rivaroxaban, and metoprolol.

Discussion: This case demonstrates specific clinical features of APS manifesting as a MI including a young age at presentation, coronary artery atherosclerosis as a less commonly etiology, and presence of antiphospholipid antibodies. These features are different from the typical presentation of MI and may prompt further evaluation including hypercoagulable work-up. Nevertheless, it is of outmost importance that traditional cardiovascular risk factors such as smoking and diabetes be addressed and strictly managed. The significance of this case highlights the underrecognized term, myocardial infarction with nonobstructive coronary arteries (MINOCA), which accounts for 10% of acute coronary syndromes. This entity predisposes to typical outcomes and complications of MI including congestive heart failure, arrhythmias, recurrent coronary thrombosis, and death. Treatment of acute MI might be challenging in patients with APS as those who undergo PCI are prone to thrombotic recurrences. Additionally, these patients should be on dual antiplatelet therapy and long-term anticoagulation which poses a challenge in maintaining the right balance between bleeding risk and recurrent thrombosis. Venous thrombosis is the most common thrombotic manifestation of APS however, it is rarely diagnosed in relation to MI as the first manifestation of the disease, and therefore it's underrecognized, highlighting the importance of identifying patients in whom APS manifests in the form of arterial thrombosis.