Multi-Vessel SCAD in a Young Lady with SLE
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Introduction
Spontaneous coronary artery dissection (SCAD) has emerged as an important cause of acute coronary syndrome, myocardial infarction, and sudden death, particularly among young women and individuals with few conventional atherosclerotic risk factors. Today we present a case of a young non-pregnant woman with systemic lupus erythematosus who was found to have multi-vessel SCAD in the setting of hypertensive emergency.

Admission & Initial Workup
A 20-year-old African American female with a history of systemic lupus erythematosus (SLE), hypertension and Raynaud’s phenomenon presented to the emergency room complaining of chest and epigastric pain, nausea and vomiting that started two days prior. She described the pain as sharp and reported that the pain started when she was “just sitting around”. She denies any radiation, provoking or palliating factors. She denies any pain associated with physical or emotional exertion, orthopnea, or paroxysmal nocturnal dyspnea. She states the pain feels similar to episodes of pancreatitis that she has experienced in the past and endorses a recent sore throat and cold symptoms.

On arrival her blood pressure was found to be 202/137. Chest pain appeared to be reproducible with palpation of the sternum, physical exam findings were otherwise normal. Labs were remarkable for a troponin of 1.63 ng/mL, a potassium of 3.4, a prothrombin time of 17.1, a potassium of 3.4, a pro-inflammatory peptide of 133 pg/mL and an erythrocyte sedimentation rate of 29. An electrocardiogram on arrival showed poor R wave progression, and a repeat six hours later showed T wave inversion in the lateral leads. A transthoracic echo revealed moderate left ventricular hypokinesis, grade 2 diastolic dysfunction, moderate concentric left ventricular hypertrophy and an LVEF of 36%. A coronary angiogram was performed the next day and was found to have a 3cm spontaneous coronary artery dissection (SCAD) of the distal first diagonal branch and a 4cm SCAD of the midportion of the second diagonal branch. She also had severe hypokinesis of the lateral wall.

Diagnostic Studies, Imaging & Case Outcome

Figure 1: Electrocardiogram demonstrating inverted T waves in the lateral leads and poor R wave progression VI-V3.

Figure 2: Coronary angiogram, right anterior oblique view, demonstrating a 3cm distal lesion in the first diagonal that is consistent with SCAD. The second diagonal has a midportion, 3-4 cm lesion consistent with SCAD.

Figure 3: AP cranial view similarly showing dissection in the diagonal branches.

Discussion
Spontaneous coronary artery dissection (SCAD) in the setting of lupus is a rare and likely under-reported phenomenon. Most cases of SCAD occur primarily in women, specifically during pregnancy and the early puerperium stage and is generally attributed to hormonal changes affecting myocyte proliferation, increased cardiac output and blood volume leading to intimal rupture. The left coronary artery is involved with 66% of cases in women, and the right coronary artery is involved in the majority of cases with men. The average age involved with multi-vessel disease is around 56 years. It is diagnostically challenging to differentiate SCAD from acute myocardial infarction and the majority of cases are diagnosed post-mortem.

Hospital course: The patient was admitted to the cardiology service and started on a nitroglycerine drip. Her symptoms rapidly improved with blood pressure control and once stable she underwent cardiac catherization. No interventions were performed. She continued to improve and was discharged home.

Discussion, continued
Our patients’ case was unusual in both her relatively young age (20) and her multi-vessel involvement. A diagnosis of SCAD should be included in the differential diagnosis for all young women presenting with chest pain, regardless of pregnancy status.

References