CLINICAL VIGNETTE

To the Heart of Anti-phospholipid Syndrome

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Case Report

A 48-year-old female was followed in rheumatology for psoriatic arthritis. Her psoriatic arthritis was initially diagnosed more than 10 years earlier. She had been on various treatments, including Guselkumab (Tremfya) for the past year. Her psoriasis had cleared, and she had no joint pain or swelling. Past medical history included NSAID induced gastritis, prior sinus surgery as well as one episode of Immune thrombocytopenic purpura (ITP) 8 years prior. ITP responded to prednisone and IVIG without recurrence. She had a low positive ANA titer and a positive cardiolipin antibody. She had no history of blood clots and had no pregnancies or miscarriages. Medications included Guselkumab injections, Famotidine and nasal sprays. She did not smoke, drink alcohol or take illicit drugs. Her family history was negative for significant autoimmune diseases and her physical exam was essentially normal.

She developed acute, severe chest pain and presented to the emergency room. Labs included an elevated CK of 1519 and elevated troponin of 4779. Her EKG showed T wave abnormalities concerning for a possible anterolateral infarct. Urgent cardiac catheterization revealed thrombotic lesions causing 30% stenosis in the proximal LAD, 95% stenosis in the mid LAD and 25% stenosis in the left circumflex arteries. Stents were placed with normalization of arterial flow post procedure. Echocardiogram showed decrease in ejection fraction to 40-45% with severe hypokinesis and a left ventricular cardiac thrombus. Repeat cardiolipin antibody was positive as well as a newly positive anti-phosphatidylserine antibody. She was diagnosed with Anti-phospholipid Antibody Syndrome (APS) and started on warfarin as well as aspirin, clopidogrel, in addition to sacubitril/valsartan (Entresto), atorvastatin, and carvedilol. Echocardiogram a month later showed improvement of her ejection fraction to 50% as well as significant reduction in the size of the clot. Repeat echocardiogram 3 months later showed a further improvement of the ejection fraction to 55% and resolution of the cardiac thrombus. Her treatment plan includes life-long anti-coagulation.

Discussion

Antiphospholipid syndrome (APS) is a systemic autoimmune disease that is characterized by recurrent venous thrombotic events, arterial thrombosis, as well as recurrent fetal loss due to placental thrombosis in the presence of circulating antiphospholipid antibodies.[1] Subgroups of antiphospholipid antibodies include: lupus anticoagulant, anticardiolipin antibodies, and anti-B2-glycoprotein antibodies. These diagnostic antibodies are also pathogenic. APS affects various organs, including the cardiac system. Cardiac involvement is multifactorial with thrombosis as well as immune-mediated injury. Cardiac symptoms of APS include valve abnormalities (thickening and vegetations), coronary artery disease (CAD), myocardial dysfunction, pulmonary hypertension and intracardiac thrombi.[2] Both valve abnormalities and CAD account for more than two-thirds of the cardiac manifestations of APS.[3]

Anti-phospholipid antibodies are not only present in APS, but are also frequently detected in immune thrombocytopenic purpura (ITP). ITP is a disorder in which autoantibodies reacting to platelet-specific antigens induce immune-mediated destruction of platelets resulting in thrombocytopenia and bleeding. There have been conflicting reports regarding the clinical significance of antiphospholipid antibodies in ITP and it is important to note that thrombocytopenia also occurs in APS. Although the appearance of anti-phospholipid antibodies in an exacerbation of ITP is often associated with clinical bleeding rather than thrombosis.[4] The positive cardiolipin antibody in this case was initially presumed to be part of the ITP history. However, cardiac thrombosis in the presence of persistent antiphospholipid antibodies established the diagnosis of APS.

Cardiac manifestations of APS include accelerated cardiac atherosclerosis and increased cardiovascular mortality.[1] Coronary artery disease in this patient may be the first presentation of the syndrome and coronary embolism is a major cause of myocardial infarction in the young.[3] The association between APS and acute myocardial infarction is more frequent in women and usually occurs in the fourth decade. The myocardial ischemia from thrombosis can lead to ventricular dysfunction. This patient's intra-cardiac thrombus is a rare, potentially life-threatening manifestation of APS.[2] Atherosclerosis treatment strategies in APS include aggressive control of all traditional risk factors including hyperlipidemia, hypertension, smoking, diabetes and obesity with both medications and lifestyle modification.[1] Standard treatment for APS is anticoagulation. Per current APS management guidelines, patients should receive long term treatment with vitamin K antagonist drugs such as warfarin with a target INR of 2-3. Patients with recurrent thrombosis despite adequate treatment should add low dose aspirin, and increase in INR target to 3-4. A switch to low dose molecular weight heparin may also be considered.[5]

It is important to remember that APS is a multiorgan disease and cardiac manifestations should not be overlooked. Effectively recognizing and treating cardiac manifestations of APS can improve overall morbidity and mortality.

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