CASE REPORT

Incidental finding of antiphospholipid antibody syndrome in a patient with Cor Pulmonale: A case report

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Abstract

Antiphospholipid antibody syndrome (APS), despite being an uncommon condition, displays a remarkably varied array of clinical presentations. It is a hypercoagulable disease characterised by recurrent thrombotic vascular events such as deep vein thrombosis (DVT) and pulmonary embolism. There is significant pregnancy morbidity associated with APS. Recurrent foetal loss is one of the predominant forms of presentation in women. The Sapporo classification states that there must be both clinical and laboratory findings to confirm APS. Anti-thrombotic therapy remains the mainstay of treatment. Pulmonary hypertension and right heart failure are rare complications in APS. We present the case of a 46-year-old lady diagnosed with APS and developed these rare complications. The case highlights the importance of considering APS in cases of atypical presentation with pulmonary hypertension and prior pulmonary embolism.

Keywords: Antiphospholipid, Pulmonary hypertension, Cor pulmonale, Thrombosis.

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Introduction

Antiphospholipid Antibody syndrome (APS), although a rare autoimmune disease, is relatively diverse in its clinical presentation. It usually manifests clinically with recurrent thrombotic vascular events or unexplained foetal loss with the presence of antiphospholipid antibodies in the blood. It may be primary or secondary.[1] Various estimations suggest that the annual prevalence of APS stands at approximately 2.1 per 100,000 persons, with a prevalence rate ranging up to 50 cases per 100,000 persons.[2]

The Sapporo classification is used for the identification and diagnosis of APS, which states that the patient must have both clinical findings, such as recurrent thrombosis or foetal loss in the first trimester, and laboratory findings including the detection of antiphospholipid antibodies at least on two occasions 12 weeks apart.[3] The Sapporo classification, used for diagnosis, is 79% sensitive for primary APS and 80% for secondary APS. There are several different antiphospholipid antibodies primarily including anticardiolipin antibodies, lupus anticoagulant antibodies, and anti-beta-2 glycoprotein I antibodies.[1]

Pulmonary hypertension is a rare complication of APS that can arise due to an acute pulmonary thromboembolic event. The structure and function of the right side of the heart are affected by pulmonary hypertension and eventually lead to cor pulmonale characterised by dyspnoea on exertion, fatigue, lethargy, peripheral oedema, jugular venous distension, ascites, and hepatomegaly. Pulmonary hypertension is defined as mean pulmonary artery pressure of more than 25mmHg at rest during right heart catheterisation (RHC).[4]

Following is the case of a 46-year-old lady diagnosed with cor pulmonale secondary to pulmonary hypertension and APS based on Sapporo classification. Her consent was taken prior to writing the manuscript.

Case Report

A 46-year-old woman presented to the medical outpatient department at Jinnah Hospital, Lahore, in 2022, with a two-week history of shortness of breath, haemoptysis, and cough. Three years earlier, in 2019, she had experienced right leg pain, swelling, and subsequently developed sudden shortness of breath, cough, and multiple haemoptysis episodes. This initial episode was diagnosed as deep vein thrombosis (DVT) leading to pulmonary embolism. She received intravenous and oral anticoagulants but continued to have recurrent haemoptysis and shortness of breath.

She then presented to the Pulmonology OPD in 2022, with sudden deterioration of her health and complaints of shortness of breath, cough, and haemoptysis. Over the past two and a half months, she had developed generalised body swelling, progressing from facial puffiness to her limbs and abdominal distension. Notably, there was no history of frothy urine or reduced urine output. She had a history of four successful live births with no abortions or stillbirths and no family history of DVT, asthma, or

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connective tissue diseases like systemic lupus erythematous (SLE) or rheumatoid arthritis (RA).

On examination, she displayed stable vitals except for an oxygen saturation of 90% on four litres of oxygen. Physical findings included pallor, jaundice, bruising, bilateral pitting oedema, and ascites. Cardiorespiratory assessment showed an abnormal apex beat and parasternal heave, while auscultation revealed a loud S2 in the pulmonary area and a pronounced pansystolic murmur at the left sternal border, exacerbated during inspiration. Abdominal exam revealed hepatosplenomegaly and ascites. Systemic review revealed no malar rash, low-grade fever, photosensitivity, or oral ulcers. Respiratory exam was unremarkable.

The provisional diagnosis was pulmonary hypertension. Previous laboratory evaluations in 2019 had shown thrombi in the inferior vena cava and pulmonary embolism. However, her recent CT pulmonary angiogram showed no thrombus. Current laboratory results indicated low haemoglobin, elevated D dimers, thrombocytopenia, and severe right ventricular systolic dysfunction on echocardiography.

The patient received supportive care and was initially treated with oral Warfarin, with subsequent management involving vitamin K to normalise her prothrombin time. Connective tissue disease antibody testing revealed positivity for lupus anticoagulant, leading to a definitive diagnosis of cor pulmonale due to underlying APS. Unfortunately, patient did not survive due to severe pulmonary embolism.

Discussion

Antiphospholipid syndrome is an autoimmune disease that is classified as primary APS and secondary APS. The diagnosis of APS is based on the Sapporo Classification.[1] In the current case, an adult female was diagnosed with APS upon laboratory workup. Her history and physical examination was consistent with Cor Pulmonale secondary to pulmonary hypertension, confirmed by echocardiography. The patient had a history of DVT three years ago, evident on CT pulmonary angiogram (CTPA). In the recent episode, she had no symptoms suggestive of DVT, and CTPA was unremarkable. Therefore, it was concluded that the patient had multiple thromboembolisms originating from deep veins of the legs that overall led to pulmonary hypertension and, consequently, cor pulmonale, a rare presentation of APS.

The constellation of atypical pulmonary symptoms, along with echocardiography findings in the young woman, led to the provisional diagnosis of pulmonary hypertension (PTH). Cor pulmonale is defined as right-sided heart failure due to pathological modification of pulmonary vasculature. In this case, pulmonary hypertension developed due to systemic thromboembolism. Pulmonary hypertension with underlying lung pathology and systemic thromboembolism has been described in the literature.[5] On echocardiography, mean pulmonary arterial pressure (PAP) was recorded to be 21mmg. According to the 6th World Symposium on PH, the mean PAP for PH should not be more than 20 mmHg.[6] On echocardiography, the dilated right ventricle (diameter=38mm, normal=7-25mm) strengthened the diagnosis. However, right ventricular hypertrophy is not a sensitive marker (sensitivity 40 to 60%)4 for right ventricular dysfunction. Cardiac catheterisation is the gold standard but could not be performed due to it being an invasive modality.

The patient had a history of right leg thrombosis three years ago and presented with the complaint of sudden onset shortness of breath and haemoptysis. DVT leading to pulmonary embolism is the most common presentation of APS (38%).[7] The evidence of chronic pulmonary hypertension after an episode of pulmonary embolism has been documented but not frequently. The increased prevalence of arterial thrombosis in APS due to the expression of ET 1 mRNA results in accelerated endothelin activity and smooth muscle proliferation, leading to CTPH in patients with APS and systemic thromboembolism.[8]

On echocardiography, the only cardiac valvular abnormality was tricuspid regurgitation, well explained by backflow pressure exerted by a dilated right ventricle with systolic dysfunction. However, many cardiac manifestations of APS have been documented, which ranged from silent valvular abnormalities (33%) to grave atherosclerotic coronary artery syndrome (2.8 to 5.5%), pulmonary hypertension (1-5.7%), and intracardiac thrombus (1.8%)98 APS is associated with venous thrombosis in about 9 to 10 percent of the population.[10]

The patient had a history of four successful live births, whereas the association of late-onset obstetric complications in pregnancy and APS has a prevalence of 31 percent.[11] Therefore, the absence of abortions or uneventful pregnancies does not rule out the possibility of APS in women of childbearing age.

Conclusion

No significant information is so far available about the association between cor pulmonale and APS in a middle-aged woman with the absence of recurrent abortions, which makes the current case a rare one. Therefore, we conclude that in the light of atypical presentation, pulmonary hypertension and an episode of pulmonary embolism previously in a young woman, APS should always

be ruled out.

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Author Contribution:

IN, HB & HS: Concept, design, data acquisition, analysis, interpretation, drafting, final approval and agreement to be accountable for all aspects of the work.