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Case Report

Internal Medicine Section

Antiphospholipid Syndrome Associated with Lung Embolism: A Case Report

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ABSTRACT

Antiphospholipid Syndrome (APS) is an autoimmune disease, where the immune system antibodies damage and attack the body's own cells and tissues. Antibodies are proteins that protect the body against infections. Cells are damaged when these autoantibodies attack the phospholipids causing blood clots in the veins and arteries. An individual is diagnosed with APS if tested positive for autoantibodies and have a history of autoimmune diseases. Here, the case of a 33-year-old Saudi male is being reported, who was diagnosed with APS, treated with warfarin. The available knowledge about this disease and its relevance to the symptoms of the patient was also summerised.

Keywords: Adult, Antiphospholipid antibodies, Saudi arabia, Thrombosis, Warfarin

CASE REPORT

A 33-year-old Saudi male, in November 2012, was admitted to the Department of Rheumatology complaining of recurrent pleuritic chest pain related with haemoptysis. The patient admitted to having occasional mild arthralgia, but with no past skin rash, Raynaud's phenomenon or photosensitivity defined. Earlier in January 2012 he was admitted to a local hospital with a complaint of acute chest pain and was diagnosed with primary APS. The patient was prescribed with anticoagulant therapy and then discharged from the local hospital. At presentation to the present facility, the CT-scan of the patient's chest showed a right lower lobe pulmonary embolism with consolidation of the bilateral lower lobe airspace. Doppler ultrasound of the lower limbs indicated normal results. The patient was tested for the cause of hypercoagulability, and his factor V Leiden mutations were determined to be negative. Tests for antithrombin III and Protein C and S were also negative. The patient had a positive 1:160 homogeneous Anti Nuclear Antibody (ANA) titre (the normal value is less than or equal to a 1:40 antibody titre), while his anti-double stranded DNA titre was slightly increased, at 35 IU/mL (the normal value is less than or equal to 7 IU/mL). However, anti-SSB, anti-SSA, anti-RNP and anti-SM were all negative, and C3 and C4 were normal. The patient was positive for antiphospholipid antibodies. The following were the results for the patient's antiphospholipid antibodies:

- At first, the anticardiolipin antibody IgG titre was slightly elevated, at 33 U/mL, and it then increased to 56 U/mL (the normal value is less than 15 U/mL).
- A fluctuation was noted in the patient's level of anticardiolipin IgM, although it remained somewhat raised, with a range between 12 U/mL and 23 U/mL (the normal value is less than 12.5 U/mL).
- The IgG titre of anti-β_2-glycoprotein was 206 U/mL, which represented a substantial elevation and it remained the same subsequently (the normal value is less than 20 U/mL).
- Anti-β_2-glycoproteins IgM level was slightly elevated, at 42 U/mL (the normal value is less than 20 U/mL), whereas the anti-CCP and rheumatoid factor levels were within their normal ranges.

The patient did not show any evidence of haemolysis or thrombosis other than that in his lungs. His echocardiogram indicated a normal functioning of the left ventricle, he had no valvular lesion and he lacked any evidence indicative of pulmonary hypertension. The patient was not admitted to stay in the hospital for long periods, hence oral warfarin was the choice and monitoring of his International Normalised Ratio (INR) gave values between 2 and 3. The patient also underwent serological and clinical monitoring for the development of any related tissue diseases, especially Systemic Lupus Erythematosus (SLE). In addition to warfarin, the patient was administered with hydroxychloroquine (200 mg), vitamin D and calcium for his pain along the medial calf. The patient continued to experience continuous headache, so he further underwent Magnetic Resonance Venography (MRV), Magnetic Resonance Angiography (MRA) and Magnetic Resonance Imaging (MRI); which did not reveal any abnormality. Therefore, he was prescribed to start taking amitriptyline (10 mg OD) to manage the headache. The patient was diagnosed with primary APS, pulmonary embolism, anti-β_2-glycoprotein and positive anticardiolipin antibody, and prescribed with long-term warfarin treatment.

DISCUSSION

Antiphospholipid syndrome is an autoimmune disorder usually identified by thromboembolic phenomena, poor obstetric history and thrombocytopenia [1]. The disorder is also connected with venous and arterial thrombosis and neurological defects [2]. APS can exist as a distinct disorder or it can occur together with other diseases like SLE [3]. The most significant neurological consequence of the condition of APS is ischaemic cerebrovascular disease [4]. The mechanism of thrombosis associated with APS is not sufficiently understood. Laboratory results of the disease include the presence of thrombocytopenia, high titres of antiphospholipid antibodies, prolonged partial thromboplastin time and ANA. Early diagnosis of the syndrome is critical due to the availability of adequate treatments such as the use of warfarin, heparin and acetylsalicylic acid [5]. The most severe manifestation of the disease is Catastrophic Antiphospholipid Syndrome (CAPS), which affects less than 1% of APS patients, since it usually occur along with thrombosis in several organs within a short time [6]. Anticardiolipin and lupus anticoagulant are the most common antibodies associated with CAPS [7]. This condition is viewed as a syndrome with the capacity to develop independent of any disease, and it is usually referred to as primary APS.

In this case report, the patient tested positive for the presence of the antiphospholipid antibodies and showed mildly elevated anticardiolipin antibody IgG. In comparison to a case of a 22-year-old female who was also diagnosed with APS, it can be noted that

the condition is usually accompanied by elevation of either IgM, IgG or both antibodies for anticardiolipin syndrome [3]. The titres of these antibodies are usually of mild to moderate levels and can also present with Lupus antibodies. Tests should differentiate between antibodies associated with Lupus and the anticardiolipin antibodies to prevent misdiagnosis. One critical point to consider is that primary APS is independent and can occur regardless of the existence of other autoimmune illnesses. The patient had a positive ANA test. ANA is positive in 95% of SLE patients. However, ANA test alone cannot be used to diagnose SLE for its low specificity (false positive rate is 30%). A case of SLE can be eliminated because the patient does not fit with the criteria for SLE diagnosis, since he does not show complete clinical and immunological features of SLE. This include acute or chronic cutaneous lupus, oral ulcers, non-scarring alopecia, arthritis, serotitis, leukopenia, renal or neurological manifestation as clinical features. Antiphospholipid antibodies and ANA as immunological feastures in addition to anti-DNA and anti-Sm [3,8].

APS is always associated with hypercoagulability and positive anticardiolipin antibodies [8]. The patient had elevated anticardiolipin antibodies, in addition, exhibited substantially elevated levels of anti-β_2-glycoprotein IgG and anti-β_2-glycoprotein IgM. The presence of these antibodies are crucial for the diagnosis of APS [3,8]. The presence of these antibodies necessitates the need for long term warfarin therapy to prevent the occurrence of thromboembolic episodes. The patient also suffered from thrombosis in the lungs and chronic headache. These further augment the fact that the patient has numerous small thrombi that have embolised to the lungs and head leading to headache. In previous therapy sessions, patients with chronic headache cases associated to APS improve significantly on the administration of warfarin [9]. Warfarin therapy is found to reduce migrane cases in such patients and this can be associated with the reduced occurrences of thrombosis [10].

The treatment regimen for APS depends on many factors, including the current clinical condition of the patient and any history of thrombosis [11]. In this case, the patient is administered long-term warfarin and amitriptyline for headache. Amitriptyline has been found to be useful for the treatment of migrane in previous patients suffering from similar conditions even though it is a tricyclic antidepressant agent [12-14]. It is preferred over other pain killers such as non-streroidal anti-inflammatory agents and paracetamol because of its long duration of action and the ability to cross the blood-brain barrier. A low dose of aspirin was used, although its efficacy has yet to be verified. Thrombosis is treated with subcutaneous or intravenous heparin, followed by warfarin [12]. Here, the patient was prescribed long-term warfarin treatment. Although, other treatment regimen may be used, such as using the drug rivaroxaban [13,14], warfarin has been the best choice for secure treatment of APS in many case senarios [15-17].

CONCLUSION

This case report presents a Saudi adult male suffering from lung embolism, elevated antiphospholipid antibodies and multiple other clinical and laboratory characteristics that were indicative of APS. The independent occurrence of primary APS is complicated, however it has been connected with high mortality, thereby reinforcing the need for an early diagnosis to enhance effective treatment and management of this condition.

CONSENT

Written informed consent for publication of clinical details was obtained from the patient. Ethical approval has been granted to this study from the Deanship of Scientific Research at Majmaah University (approval number: MUREC-Nov19/COM-2017/23).

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