The Turkish Journal of Pediatrics 1996; 38: 231-234

SYSTEMIC LUPUS ERYTHEMATOSUS PRESENTING WITH THROMBOCYTOPENIA*

Report of a Child with Positive Anticardiolipin Antibodies

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SUMMARY: Kanra G, Erdem G, Özen S, Anlar FY, Beşbaş N, Ceyhan M. (Infectious Diseases and Nephrology Units, Department of Pediatrics, Hacettepe University Faculty of Medicine, Ankara, Turkey). Systemic lupus erythematosus presenting with thrombocytopenia: report of a child with positive anticardiolipin antibodies. Turk J Pediatr 1996; 38: 231-234.

We report a case of systemic lupus erythematosus initially presenting with thrombocytopenia and diagnosed as immune thrombocytopenic purpura. The patient subsequently developed lymphadenopathy, arthritis and cardiac involvement along with anticardiolipin antibodies. We would like to emphasize the fact that these autoantibodies have a role in the pathogenesis of thrombocyte destruction, and that patients with immune thrombocytopenic purpura should be followed for signs of systemic lupus erythematosus. *Key words: systemic lupus erythematosus, thrombocytopenia, anticardiolipin antibodies.*

Systemic lupus erythematosus (SLE) is a multisystem disease manifesting with a wide range of autoantibodies. Among these, anticardiolipin antibodies are gaining popularity in the pathogenesis of a number of systemic manifestations.

Thrombocytopenia is a well recognized feature of SLE and may be the initial presentation. We report a boy with thrombocytopenia as the initial manifestation of the disease. We also discuss the relevant role of anticardiolipin antibodies.

Case Report

An 11-year-old boy was admitted with a one-week history of left-sided neck swelling and a three-week history of fever and arthritis of the knees and ankles. Seven months previously he had epistaxis and easy bruising. At that time his thrombocyte counts were 100,000-150,000/mm^3, and a diagnosis of immune thrombocytopenic purpura was made after bone marrow examination. The patient was treated with intravenous immunoglobulin, and the thrombocytopenia remitted. His family and personal histories were otherwise unremarkable.

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The physical examination revealed a temperature of 39.3 °C, and there was tender erythematous lymph node enlargement in the left submandibular region. A low-grade systolic murmur was heard in the mitral area, and the liver and spleen were palpable one and two centimeters below the respective costal margins. Pertinent laboratory studies demonstrated a white blood cell count of 2,000/mm^3 and hemoglobin of 7.8 g/dl. Thrombocyte counts and biochemical tests including transaminases, creatinine and blood urea nitrogen were normal. The serum iron level was low, and the direct Coombs test was negative. Other findings included a raised erythrocyte sedimentation rate of 110 mm/hour, decreased early complement components including C3: 26.3 mg/dl (normal: 60-120 mg/dl) and C4: 7 mg/dl (normal: 20-55 mg/dl); increased antinuclear antibodies of 1/160 and anti-dsDNA titers of 1/163. Both immunoglobulin G and immunoglobulin M type anticardiolipin antibodies were increased. Echocardiography revealed a slight pericardial effusion and mitral insufficiency. Lymphadenitis was treated with ampicillin, and subsequently prednisolone 2 mg/kg/day was started. The lymph nodes had diminished dramatically in size and the fever had subsided when the patient was discharged within nine days after the start of steroid therapy.

Discussion

Mild thrombocytopenia such as in our patient has been reported in 25-50 percent of SLE patients. Thrombocytopenia is mainly attributed to the autoantibodies observed in SLE. Other causes are myeloproliferative disorders, ineffective thrombopoiesis, abnormal platelet distribution, dilutional effect and abnormal platelet destruction[1].

There are several reports of an association between thrombocytopenia and lupus anticoagulant in patients with SLE[2]. Anticardiolipin antibodies including immunoglobulins of IgG, IgM and IgA classes correlate with the activity of lupus anticoagulants[3]. Most, but not all, lupus anticoagulants are anticardiolipin antibodies. Lupus anticoagulants and anticardiolipin antibodies may mediate platelet destruction in some SLE patients by binding and interacting with the phospholipid moiety of platelet membranes[3]. The true antigenic epitope for lupus anticoagulant may be an altered lipid structure, such as the hexagonal phase of phosphatidyl ethanolamine. Altered phospholipid structures and subsequent antibody formation to this neoantigen may be responsible for the thromboembolic complications observed in patients with antiphospholipid antibodies[3]. However, there is minimal evidence that lupus anticoagulant and anticardiolipin antibodies (aCL) are able to bind platelet, and their interaction with membrane phospholipids seems impossible because of steric hindrance from glycoprotein and glycolipids and because anionic phospholipids are confined to the cytosolic surface[4]. A serum cofactor was therefore sought and identified as beta-2-glycoprotein I (apolipoprotein H). This cofactor has an affinity for anionic phospholipids and

behaves as a natural anticoagulant[4]. In patients with SLE, the average prevalence of the lupus anticoagulant is 34 percent, and the prevalence of anticardiolipin antibodies is 44 percent[5,6].

Moderate thrombocytopenia is noted in nearly 50 percent of patients with lupus anticoagulants, but in many cases it apparently is the result of an underlying disorder[1]. It may be the result of platelet sensitization by antibodies attached to surface phospholipids[3]. IgM class anticardiolipin antibodies are usually associated with thrombocytopenia and central nervous system manifestations, whereas thromboses are most frequently associated with IgG class antibodies[1,3,7]. Both IgM and IgG type antibodies were increased in our case.

The triad of antiphospholipid antibodies, thrombosis and fetal loss and other manifestations, such as thrombocytopenia, autoimmune hemolytic anemia, non-thrombotic neurological findings and skin findings, left heart valvulopathy and pulmonary hypertension, have all been considered as a part of antiphospholipid (aPL) syndrome[1,3]. Our patient is a secondary aPL syndrome case, since findings such as thrombocytopenia, left heart valvulopathy and pleural effusion occurred in the setting of SLE. Thrombocytopenia may also be found without any associated autoimmune disease as in primary aPL syndrome; thus, patients presenting with thrombocytopenia such as our patient must be screened for aPL antibodies, including anticardiolipin antibodies[1]. There have also been occasional cases with a clinical picture of aPL syndrome followed by the development of clinical and immunological features of SLE[8]. A history of immune thrombocytopenic purpura is usually related to the persistence of IgG class anticardiolipin antibodies. These patients have milder disease activity when compared with the anticardiolipin antibody-positive cases in the acute phase of the disease[6].

This case is yet another example reinforcing the fact that thrombocytopenia may be the initial manifestation of SLE; early symptoms of SLE should be looked for in these cases. Each case with thrombocytopenia of obscure etiology should also be screened for antiphospholipid antibodies. The correlation of anticardiolipin antibodies and thrombocytopenia suggests that these autoantibodies are indeed effective in thrombocyte destruction.

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