Antiphospholipid antibody syndrome as a cause of inferior vena cava thrombosis

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To The Editor,

Antiphospholipid antibodies syndrome (APS) is characterized by the association between recurrent arterial or venous thrombosis and the presence of circulating antiphospholipid antibodies (aPL)[1]. The criteria for diagnosis of primary APS are high titers of aPL and two or more clinical manifestations in an individual without an underlying rheumatic disease[2]. The recognition of APS during the last 15 years has had an important clinical impact on almost every medical specialty because thrombosis can occur anywhere in the body. Although thrombotic events are in children compared to adults, a higher incidence of APS-related thrombosis could be expected[3,4].

Here, we report a 10-year-old boy with vena cava inferior thrombosis involving bilateral vena iliaca communis. Our patient did not fulfill the American Rheumatism Association (ARA)[5] classification criteria for systemic lupus or autoimmune diseases.

A 10-year-old boy whose complaints were severe cramping abdominal pain accompanied by vomiting, fever and pain in both legs for five days was referred to our hospital with an initial diagnosis of acute abdomen. His abdominal ultrasonographic scan showed an obstruction of the vena cava inferior and both common iliac veins. He was admitted to the pediatric department for further investigation.

He had been in good health until a few days before being hospitalized. Family history revealed that his parents were first-degree relatives. His mother had an episode of transient cerebral ischemia two years previously and was treated appropriately. He had two healthy brothers and three sisters. On admission, physical examination revealed his weight and height at 25th centile, body temperature 38° (axillary), arterial pressure 90/60 mmHg, and cardiac rate 90/min. He complained of slight tenderness over both legs from hip to ankle and generalized severe pain and tenderness over abdomen. There were pulses in both arteria femoralis and dorsalis pedis. No inflammation or edema was present in either leg. Other than these findings physical examination was unremarkable.

Initial and follow-up laboratory data of the patient including urinalysis, and renal and liver function tests were normal. Blood analysis showed mild anemia and thrombocytopenia. Blood, urine and throat cultures were sterile. Results of Paul Bunnell, Wright and Grubel Widal agglutination tests and cold antibodies were negative. Further investigations showed absence of antibodies to dsDNA, ENA, sMA, slightly prolonged prothrombin time, strongly positive lupus anticoagulants and highly increased levels of IgM anticardiolipin antibody (aCL) (enzyme linked immunosorbent assay) and elevated IgG aCL. Serum C and S protein, antithrombin III and factor V were in normal ranges. Unfortunatelly, we did not search for mutation of factor V Leiden and prothrombin G20210 A because of technical limitation. Immunological test revealed a false-positive VDRL and a negative direct Coombs' test. C3 and C4 levels were in normal ranges. Echocardiography and electromyelography were normal. An abdominal ultrasound scan showed an obstruction of vena cava inferior thrombosis which spread from bilateral vena iliaca communis to venae renales. Doppler scan and abdominal computerized tomography (CT) scan showed the same findings (Figs. 1, 2). IgG aCL was slightly increased and IgM aCL and ANA were in normal ranges in his mother.

On the basis of these findings, the diagnosis of APS was made. Heparin therapy was administered for the first three days followed by oral anticoagulant (warfarin) therapy. He was then treated with antibiotherapy (ampicillin 150 mmg/kg/day and ceftriaxone 75 mg/kg/day) until results of blood and throat cultures were negative.

He was restricted to bed rest to prevent pulmonary embolism during this period. Owing to the persistence of his fever, and high

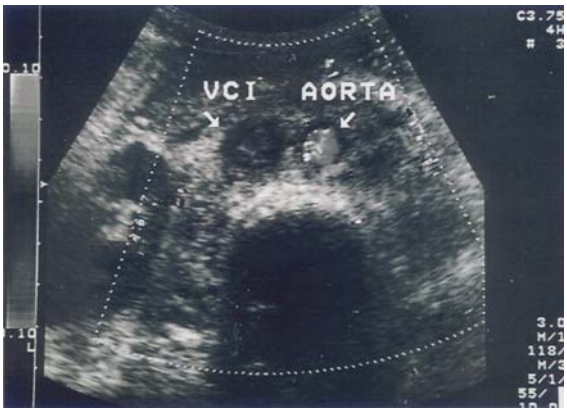

Fig. 1. Colored Doppler ultrasonograph scan shows thrombosis within vena cava inferior and heterogeneous appearance.

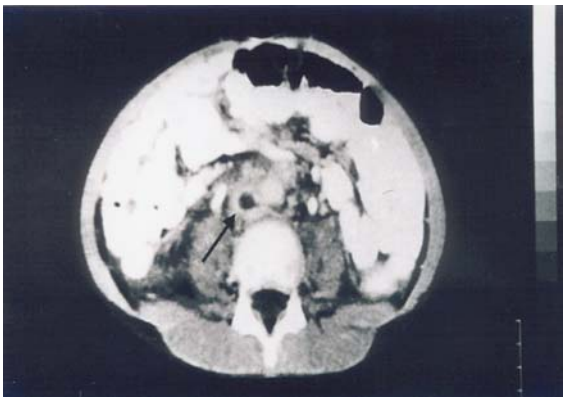

Fig. 2. Contrast enhanced computerized tomography (CT) scan of abdomen obtained at renal vein level shows thrombosis within vena cava inferior distal to the junction of right vein to vena cava inferior giving a hypodense appearance.

sedimentation rate and aCL levels despite oral anticoagulant therapy, standard steroid therapy (prednisolone 2 mg/kg/day) was added. Steroid was withdrawn after his recovery in five days. After three weeks, the sedimentation rate was normal and repeated colored Doppler scan showed disappearance of thrombosis. He was discharged home with warfarin therapy. One year after the diagnosis, the patient continued to be well and did not complain of further symptoms related to thromboembolic phenomena.

At present, there is no agreement about the treatment of APS in children, as clinical experience is very limited[3,6]. Plasma exchange, immunosuppressive drugs, steroids and anticoagulants may be useful in APS where no clear therapeutic guidelines seem yet available[7]. Steroids are recommended in adult patients with primary APS, but only in the presence of repeated thromboembolic phenomena, with or without anticoagulant therapy[2]. Although steroid treatment has been suggested when APS is associated with systemic lupus erythematosis (SLE) or autoimmune diseases, we used it to treat our patient because of persisting fever, and increased sedimentation rate and aPL levels. After steroid treatment, he recovered rapidly and his fever sulosided. Our experience suggests that corticosteroid therapy may play a role in the prompt normalization of body temperature and general condition. Saca et al.[8] reported a patient with Budd Chiari syndrome whose aCL levels were high and whose mother and three siblings also had high levels of aCL. They suggested that APS might be an inherited disease. Our patient had high levels of aCL his mother also had slightly increased aCL levels. We therefore conclude that APS might be inherited and the molecular diagnosis studies would be important for this disease in the future.

In conclusion, the observation of this case indicates that primary antiphospholipid syndrome may present with different features in children. We suggest that primary APS should be considered in cases of thrombosis when thromboembolic phenomena occur in children not fulfilling ARA criteria for autoimmune diseases.

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