Repetitive Miscarriages in a Patient with a High Level of Anticardiolipin Antibodies and Myocardial Infarction

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Received August 27, 2006, Accepted November 23, 2006

Key words: Anticardiolipin antibodies – Repetitive miscarriage – Myocardial infarction

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Abstract: Antiphospholipid antibodies consist of a group of heterogeneous autoantibodies against anionic phospholipids. We describe the case of a 19-year-old patient who was consulted in the obstetrics service after her second miscarriage. She was a smoker and six months after this consultation she developed diabetes mellitus. At 21 years of age she suffered from myocardial infarction, when high anticardiolipin antibody levels were evidenced. Some months later the patient again became pregnant and prophylaxis against miscarriages was performed using low doses (5000 IU) heparin administered subcutaneously at 12-hour intervals. She evolved with preeclampsia, however, the baby was born in good health. One year after she again became pregnant and prophylaxis against miscarriage was again performed using low doses of heparin. The pregnancy successfully resulted with the birth of her second child.

Introduction

Antiphospholipid antibodies consist of a group of heterogeneous autoantibodies against anionic phospholipids [1–3]. Associated clinical manifestations include arterial or venous thrombosis, unexplained fetal death anytime after the 10th week of pregnancy and repetitive miscarriages. High levels of anticardiolipin antibodies (ACL) or lupus anticoagulant (LA) are parameters for the diagnosis of antiphospholipid antibodies syndrome (APAS) [2, 3].

The physiopathologic mechanisms involved remain unclear, however it is already known that these antibodies reduce the production of prostaglandins by the vascular endothelium, increasing production of thromboxane by the platelets and diminishing the activity of protein C^2 [2–6]. Thrombosis in the placental blood system may result in numerous gestational pathologies including miscarriages, reduced intra-uterine growth, displacement of the placenta, preeclampsia, premature births and HELLP syndrome [6, 7].

Among APAS sufferers, 5 to 51% present with high ACL levels and up to 25% with LA [8, 9]. The titres may be elevated only during pregnancy and even then be subject to variations [10]. Some patients who demonstrate weak reagency can become positive after a period of time [6]. Also, the association of thrombotic events with IgG anticardiolipin is significant compared with IgM [6]. In the treatment of APAS steroids, low doses of aspirin or heparin and high doses of immunoglobulin are used [8]. With these resources the success rate of live births can be as high as 70% [6]. One study provides evidence that in cases of the recurrent miscarriages with elevated IgG (acl) levels, treatment using a combination of aspirin and heparin gives better outcomes than treatment with aspirin alone [10].

Studies have demonstrated an association between coronary thrombotic events and the presence of anticardiolipin antibodies [1, 12].

Case report

A 19-year-old patient was consulted for the first time in the obstetrics service with a diagnosis of miscarriage in the 30th week of gestation. This was her second

miscarriage with the first terminating in the third month. She reported that she had smoked 20 cigarettes daily for one year. Six months after the second miscarriage she returned to the department, when ketoacidosis due to type I diabetes mellitus was diagnosed, and she began to take daily injections of insulin. At 21 years of age, she presented with precordial pain and extensive anterior myocardial infarction was diagnosed, but even so she continued to smoke. Coronary angiography identified thrombosis in the anterior descending artery and an echocardiogram demonstrated apical dyskinesia and medial dyskinesia of the antero-septal wall of the left ventricle. APAS was also diagnosed with elevated anticardiolipin antibodies levels.

Months later the patient again became pregnant and was medicated with 5000 IU SC heparin every 12 hours. On the 27th week determined by ultrasound, the patient was hospitalized with dyspnea and a cardiotocography evidenced an active and reactive fetus. In the 34th gestational week the patient reported low-abdominal pain similar to contractions; the uterine neck was thick and closed, however amniocentesis was positive. The diagnostic hypothesis was the premature labor. After six days, she presented with preeclampsia and fetal suffering and a c-section was performed. The baby was born well weighing 7.65 lbs. (3.47 kg) with an APGAR of 8/10.

One year after, the mother at 16 weeks of pregnancy was again consulted in the service. During the evolution of the pregnancy an ultrasound demonstrated poly-hydramnio but no alterations were evidenced by a Doppler scan and the lipid profile was normal. On the 35th week of gestation, the patient reported that for one week she had been suffering from colic-like pain in the lower abdomen and "hardening of the belly". On the 5th day of hospitalization, a c-section was performed followed by tubal sterilization. The baby weighed 9.4 lbs. (4.265 kg) and its APGAR was 9/10.

Discussion

This study reports on a 19-year-old patient, who after the second miscarriage developed myocardial infarction. Complementary examinations after infarction evidenced high levels of anticardiolipin antibodies. She became pregnant on two other occasions and prophylaxis to prevent miscarriages, indicated for repetitive miscarriage patients and high levels of anticardiolipin antibodies, was performed. With the use of prophylaxis these pregnancies terminated successfully. Other studies provide evidence that in cases of recurrent abortions with elevated IgG (acl) levels, treatment with a combination of aspirin and heparin give better outcomes than treatment with aspirin alone [5, 10].

Complementary examinations identified this patient as a sufferer of primary anticardiolipin antibody syndrome after she had suffered three events, two miscarriages and coronary thrombosis. Absence of a published description of this association makes choice of conduct in these patients very difficult. Doubts reside

in how much prophylactic anticoagulation should be used in cases of repetitive miscarriage starting after the first miscarriage, or whether prophylaxis for the prevention of re-thrombosis be used for cases of repetitive thrombotic events in patients with anticardiolipin antibody syndrome.

Another doubt exists in relation to anticoagulation in the postpartum period of these individuals. Should these patients receive anticoagulation such as warfarin or just remain under observation. We suggest that prophylaxis using 5000 IU heparin two times daily should be maintained for at least the first month of the postpartum period.

In relation to all the doubts and owing to the difficulties in chronic total anticoagulation of this patient, clinical follow up was the chosen course in this case.

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