Retinal Vein Occlusion in Two Patients with Primary Antiphospholipid Syndrome

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Primary antiphospholipid syndrome (APS) is a disease producing vascular thrombus with antiphospholipid antibody without association with autoimmune diseases as systemic lupus erythematosus. Retinal vein occlusion is a rare vascular manifestation in primary APS. We describe 2 cases of primary APS presenting with developing blurred vision. Each had central retinal vein occlusion and high titer of IgG anticardiolipin antibody.

Key Words: Primary antiphospholipid syndrome; Retinal vein occlusion

INTRODUCTION

Antiphospholipid syndrome (APS) is a disorder of recurrent arterial or venous thrombosis, pregnancy losses and/or thrombocytopenia associated with persistently positive results of anticardiolipin (aCL) antibody or lupus anticoagulant tests. This disorder may occur in association with systemic lupus erythematosus or other autoimmune diseases, or it may occur alone (Primary APS). The deep and superficial veins of the lower extremity are the most common sites of the venous thrombosis. But central retinal vein occlusion is rare in primary APS. The highest level of IgG aCL antibody is more often associated with retinal vein occlusion. We want to report two cases of retinal vein occlusion with IgG aCL antibody as the first manifestation of the primary APS in two male patients.

CASE REPORTS

Case 1: A 21-year-old male patient was referred for evaluation of thrombocytopenia and blurred vision in his left eye for one month. He did not have any ocular or systemic diseases before. He was neither a smoker nor an alcoholic, nor did he have a history of drug abuse. Family history was also unremarkable. His height was 175 centimeters and his body weight was 68 kilograms. His blood pressure was 130/80 mmHg. The corrected visual acuity on his first visit was 20/20 in his right eye and 20/20 in his left eye.

On ophthalmic examination, the left eye disclosed branch retinal vein occlusion and superficial flame-shaped retinal hemorrhages on superotemporal arcade (Figure 1). The right eye showed normal sizes of the retinal vessels and retina.

Figure 1. Fundus photograph of the left eye with branch retinal vein occlusion with hemorrhages (Case 1).
On laboratory studies, platelets were 37,700/mm³, 7,520
/mm³ leukocytes (67% neutrophils, 21.6% lymphocytes),
15.6 g/dL hemoglobin. Erythrocyte sedimentation rate
(ESR) was 2 mm/hr, 0.2 mg/dL CRP. Prothrombin (PT)
and partial thromboplastin time (aPTT) were in normal
range. Serum creatinine, aspartate aminotransferase,
alanine aminotrasferase, alkaline phosphatase and urine
analysis were all normal range. An immunologic study
revealed high titer (>120 U/mL) IgG aCL antibody (normal,
<10 U/mL) but the antinuclear antibody, anti-dsDNA
antibody, lupus anticoagulant, IgM antiphospholipid antibody
and antiplatelet antibody were negative. The serologic
test for syphilis was negative; protein C and S antigen
were also normal range.

He was started on warfarin to maintain an international
normalization unit (INR) of 2.0 to 3.0 and high dose
prednisolone (1 mg/kg/day) for a month at first. One
month later, the patient's visual acuity deteriorated to
20/400 in his left eye during anticoagulant therapy. Warfarin
was switched to a low dose of aspirin (100 mg/day) after
developing vitreus hemorrhage. On the second month,
prednisolone was tapered to 10 mg daily because
platelet kept above 50,000/mm³. His visual acuity did not
change during follow-up a year's.

**Case 2:** A 60-year-old male patient presented with
blurred vision in his right eye. There was no history of
diabetes mellitus or hypertension. He also did not have
any ocular or systemic diseases before. He is neither
a smoker nor did he have a history of drug abuse.
Family history was also unremarkable. His height was
173 centimeters and his body weight was 73 kilograms.
His blood pressure was 130/80 mmHg. The uncorrected
visual acuity on his first visit was 18/20 in his right eye
and 18/20 in his left eye.

On ophthalmic examination, the right eye disclosed
mild to moderate tortuous and dilated branch retinal vein
and superficial flame-shaped retinal hemorrhages on
superior and inferomedial arcade. The left eye showed
normal sizes of the retinal vessels and retina.

On laboratory studies, platelets were 154,000/mm³,
4,500/mm³ leukocytes (63.6% neutrophils, 30.0% lym-
phocytes), 12.8 g/dL hemoglobin. ESR was 7 mm/hr,
0.4 mg/dL CRP. PT and aPTT were in normal range. An
immunologic study revealed 80 U/mL IgG aCL antibody
(normal <10 U/mL), 5.1 PL IgM antiphospholipid antibody
(normal <5.0 PL) and positive lupus anticoagulant antibody.
But the antinuclear antibody, anti-dsDNA antibody and
antiplatelet antibody were negative. The serologic test for
syphilis was negative and protein C and S antigen were
also normal range.

He has been maintained with low dose of aspirin (100
mg) daily. His visual acuity kept well during antiplatelet
therapy but the blurred vision persisted.

**DISCUSSION**

Proposed diagnostic criteria for primary APS was a
positive test of aCL antibody or lupus anticoagulant (LA)
antibody, measured twice with a minimum interval of
three months and one major clinical manifestation of
APS, such as venous thrombosis, arterial thrombosis or
thrombocytopenia in an individual without any underlying
predisposing disorder³. Anticardiolipine antibodies, isotype
IgG and IgM were measured by means of an enzyme
linked immnosorbent assay and the results were
classified as negative (0 to 5 U/mL), low positive (5 to 15
U/mL), moderately positive (15 to 60 U/mL) or high
positive (greater than 60 U/mL)⁴. The two cases were
compatible with primary APS as they had retinal vein
thrombosis with high titer of IgG aCL antibody without
association to other immunologic diseases.

According to Asherson et al⁵ the prevalence of ocular
vaso-occlusive disease patients with lupus without
antiphospholipid antibodies was less than 2%. When
these antibodies were present, its prevalence increased
twofold. The recurrence of cerebral vascular thrombosis
in APS was also more frequent in patients with high
titer (over 100 U/mL) of aCL⁶. IgG isotype was
significantly more frequent than IgM isotype and seemed
to correlate best with clinical disease⁷. A previous study
showed that all ocular vaso-occlusive patients with
primary APS had high titer IgG aCL antibody, but the
prevalence of lupus anticoagulant was as low as 29
percent⁸. In our 2 cases, IgG aCL antibodies were high
titer (over 80 U/mL) and persisted for more than 4 months
but IgM antiphospholipid antibody was normal or low
positive.

Ocular symptoms associated with primary APS were
transient blurring of vision, decreased vision, transient
diplopia and transient field loss associated with headache
and photophobia. Fundoscopic abnormalities were vein
tortuosity, swelling optic disc, vitreous and preretinal
hemorrhage, microaneurysms⁹. The two patients initially
complained of blurred vision without decreased visual
acuity, but the vision of one patient rapidly deteriorated
because of vitreous hemorrhage during anticoagulant
therapy.
Coexistent thrombosis and thrombocytopenia presented a major therapeutic dilemma in the anticoagulated patient. Lower levels of anticoagulation have been utilized (INR 2.0-3.0) for platelet count of 50,000-100,000. In case 1, who had retinal vein thrombosis and thrombocytopenia, vitreus hemorrhage occurred during anticoagulation therapy with warfarin.

In conclusion, it is necessary to evaluate the APS in patients with retinal vein thrombosis without considerable causes, as well as to further study whatever APS is related with retinal vein thrombosis.

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