An unusual case of branch retinal venous occlusion in a patient of uncomplicated pregnancy

Jayanta Dutta • Rupam Roy •
Somnath Mukhopadhyay • Suhrita De Roy

Received: 6 March 2013 / Accepted: 22 March 2013 / Published online: 5 April 2013
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Introduction

Branch retinal venous occlusion (BRVO) is most commonly associated with hypertension and diabetes mellitus in all ages. Vasculitis associated with collagen vascular disorders and blood dyscrasias are more common in young ages. Pregnancy is a hypercoagulable state and is associated with thromboembolic disorders [1, 2]. There are reported cases of central retinal venous occlusion in pregnancy, but till date, there is no reported case of BRVO in uncomplicated pregnancy [3]. Eyes with arteriovenous crossings appear to be at risk for BRVO. Arterial compression of the vein is believed to be the main cause of BRVO.

Case history

A 25-year-old female patient presented to us at our outpatient department with the complaint of sudden painless loss of vision in the right eye for 7 days which was not associated with any pain, photopsia, or floaters [4]. There was no history of ocular trauma and allergies. The patient was in her second trimester of second pregnancy. Her first pregnancy

was 2 years ago with a normal healthy baby. She was normotensive, nondiabetic, had no history of oral contraception use, and without any family history of diabetes mellitus.

Her best corrected visual acuity in the right eye was finger counting at 2 m and that of her left eye was 20/20. Anterior segment examination with slit lamp was normal. Intraocular pressure (by applanation tonometry) was 14 mmHg in both eyes. Slit lamp biomicroscopy of the right eye using +90 dioptre lens showed dilated and tortuous superotemporal branch retinal veins with dot- and flame-shaped hemorrhages with yellowish retinal hard exudates along the entire affected superotemporal segment. A cotton wool spot or soft exudate was seen along the inferotemporal arcade. Macula showed loss of normal foveal reflex with thickening due to macular edema (Fig. 1).

Systemic examination of the patient was normal. Her blood pressure was 110/74 mmHg and her pulse rate was 78/min. Fundus angiography and optical coherence tomography (OCT) were done. Angiographic findings of the left eye were normal. The right eye showed delayed filling of superotemporal veins with blocked fluorescence corresponding to areas of hemorrhage and cystoid pattern of fluid leakage from macula. No peripheral capillary nonperfusion areas were seen in either eye. OCT revealed normal foveal contour in the left eye, while in the right eye, the foveal contour was distorted with intraretinal multiple cystoid spaces associated with intraretinal thickening due to fluid accumulation. Hard exudates and intraretinal hemorrhages appeared as focal areas of bright hyper-reflective dots with backscattering (Fig. 2).

A complete hematological work-up was done. Lipid profile was normal. Her coagulation profile (prothrombin time, activated partial thromboplastin time, bleeding and clotting time) was normal. Serum homocysteine level measured by

J. Dutta (✉)
Ophthalmology Department, IPGMER, 244 AJC Bose Road,
Kolkata 700020, India
e-mail: jayanta.mickey@gmail.com

R. Roy
Midnapore Medical College, Midnapore, West Bengal, India

S. Mukhopadhyay
Ophthalmology Department, NRS Medical College, Kolkata, West Bengal, India

S. De Roy
Department of Gynaecology and Obstetrics, Medical College,
Kolkata, West Bengal, India

Fig. 1 A color fundus photograph of the patient's right eye showing superotemporal branch vein occlusion with hemorrhages along the superior arcade, hard exudates, and macular edema

chemiluminescent microparticle immunoassay was within the normal limit. Results of the serological tests for connective tissue disorders (rheumatoid factor and antinuclear antibody levels) and test for antiphospholipid antibody were normal. Serological tests for syphilis and human immunodeficiency virus were nonreactive.

Fig. 2 Optical coherence tomography of the patient's right eye showing presence of intraretinal fluid spaces at the parafoveal region with intraretinal thickening due to macular edema

Discussion

Pregnancy is associated with different thromboembolic disorders and thrombophlebitis due to hypercoagulable state related to reproductive hormones [5]. It is well appreciated that pregnancy represents a hypercoagulable state, through various changes that occur with platelets, clotting factors, and arteriovenous flow dynamics. Such changes may be related to the development of retinal artery and vein occlusions, disseminated intravascular coagulopathy, thrombotic thrombocytopenic purpura, amniotic fluid embolism, and cerebral venous thrombosis [6].

Both branch and central retinal artery occlusions have been reported to occur in pregnancy [7]. Although a hypercoagulable work-up may detect an abnormality, routine hematological work-up may be unremarkable. Retinal vein occlusions are less common than arterial occlusions.

This patient had fresh superotemporal branch retinal vein occlusion in the right eye from clinicoangiographic evidence. Her blood parameters were all normal. Retinal arterial occlusions are the more common cause of visual deterioration in pregnancy, but still, a high level of suspicion should be held by the clinicians for venous occlusions to be a possible cause of blindness in pregnant patients, as proven by this case.

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