

Retinal vein occlusion in a patient on oral contraceptive pills: a case report

Abstract

We present the case of a young patient on oral contraceptive pills (OCP) as sole risk factor for thrombosis that developed branch retinal vein occlusion with reduced vision; the vision recovered completely after Bevacizumab intravitreal injections, with further avoidance of OCP.

Keywords: branch retinal vein occlusion, oral contraceptive pills

Catalina G. Corbu¹,
Raluca E. Pascu²,
George Iancu³,
Raluca Iancu⁴

1. Department of Ophthalmology, "Carol Davila" University of Medicine and Pharmacy Bucharest (Romania)
2. Emergency Eye Hospital Bucharest (Romania)
3. UMF "Carol Davila" Bucharest, "Filantropia" Clinical Hospital, Bucharest (Romania)
4. Department of Ophthalmology, UMF "Carol Davila" Bucharest, Emergency University Hospital Bucharest (Romania)

Correspondence:
Dr. George Iancu
e-mail: klee_ro@yahoo.com

Received:
June 21, 2013
Revised:
July 18, 2013
Accepted:
August 25, 2013

Introduction

Retinal vascular obstruction is rare in young patients; however, it is a significant cause of blindness, especially retinal vein occlusion (RVO), the most common acquired retinal vascular pathology in adults⁽¹⁾. RVO is divided in central (CRVO), hemicentral (HRVO) and branch retinal vein occlusion (BRVO).

The reported prevalence of RVO is 5.2/1000 for all types, with 4.42 for BRVO and 0.8 for CRVO⁽²⁾. Systemic hypertension, hyperlipidemia, increased body mass index, oral contraceptive pills and thrombophilia are important risk factors for BRVO in young patients^(3,4).

Oral contraceptive pills (OCP) treatment is the most common birth control method. Although well tolerated and with good safety profile, there are a couple of ocular side effects described (retinal vitreous haemorrhage, retinal vascular thrombosis or serous chorioretinopathy). The most severe ocular side effects are thrombosis of central retinal vein or artery or acute ischemic optic neuropathy. However, their incidence is low, approximating 1:10.000 yearly. OCP were found to increase only the risk for retinal vascular lesions, without changing the odds for other eye conditions⁽⁵⁾.

We present the case of a young patient on OCP without other associated risk factors for thrombosis that was diagnosed with BRVO.

Case report

A 35-year-old female presented with painless unilateral blurred vision and headache, started three weeks ago. She was a non-smoker, without any comorbidities, normal BMI and was not on any long-term medication, except the oral contraceptive pills she was taking for the last two years (ethinyl-estradiol 0.030 mg and levonorgestrel 0.150 mg).

On examination, visual acuity in left eye was 1/4 while in the right eye was normal. Intraocular pressure and slit-lamp exam were normal.

Fundoscopic examination revealed flame-shaped intraretinal haemorrhage, cotton-wool exsudate and edematous

retina, dilated and sinuous veins and narrow arteries in the territory of inferior temporal retinal vein (Figure 1). Ocular coherence tomography (OCT) revealed retinal edema in the same territory (Figure 2).

A full assessment excluded cardiovascular pathology, diabetes mellitus, coagulopathy or autoimmune conditions.

A diagnosis of BRVO was established and appropriate therapy instituted.

Differential diagnosis

Thorough clinical assessment, slit-lamp and fundus exam provide usually enough information to orientate the clinician assessing decreased vision symptoms (Table 1).

For retinal vascular condition suspicion, evaluation for risk factors should be performed. Presence of diabetes mellitus, hyperlipidemia, hypertension, coagulopathies, cigarettes smoking, advanced age, vasculitis, infection or medication

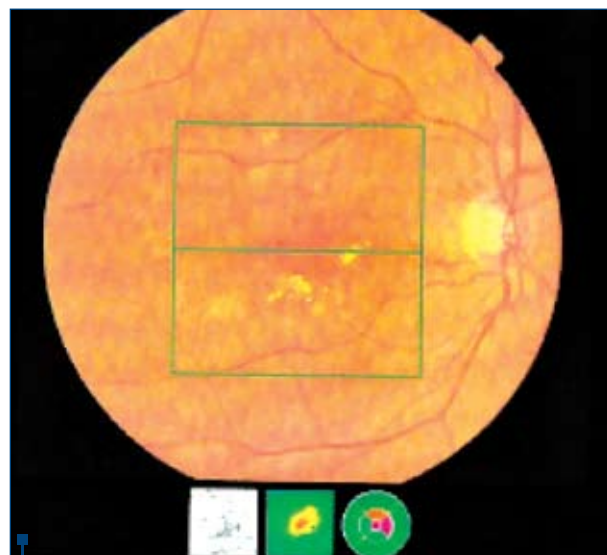


Figure 1. Fundoscopic exam

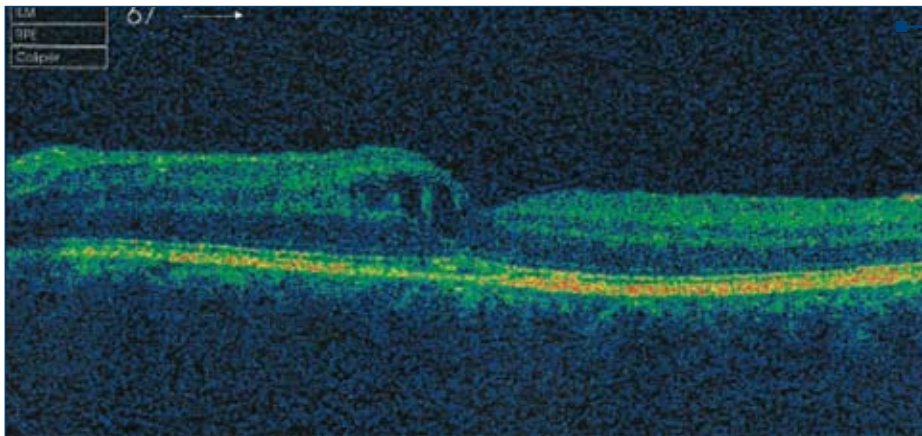


Figure 2. Optical coherence tomography exam

Table 1 Differential diagnosis

Retinal vascular conditions
• Retinal vein occlusion
• Retinal artery occlusion
• Retinal detachment
• Ocular ischemic syndrome
• Vitreous hemorrhage
• Diabetic retinopathy
• Hypertensive retinopathy

(OCP, drug abuse) should be considered. The type and extent of occlusion is also important. BRVO can be major, macular or peripheral, depending on the retinal area involved.

Retinal artery occlusion generates similar symptoms. It is an ophthalmologic emergency with sudden onset symptoms and very rare spontaneous recovery. Obstruction of the ophthalmic or internal carotid artery can lead to visual field loss as well.

Treatment

The patient was advised to stop OCP and was treated with intravitreal anti-vascular endothelial growth factor injection (Bevacizumab), two doses one month apart. The first follow-up was six weeks after the first injection. The visual acuity improved to 2/3 with decrease of edema and hemorrhage. The patient was reevaluated three months after the second dose, when a full recovery of visual acuity (1/1) was noticed.

Discussion

Although they are distinct entities, RVO have overlapping clinical picture and causes. BRVO represents an occlusion of a retinal vein at an arteriovenous crossing site. It involves usually the temporal vascular arcade (macular BRVO); the peripheral type is usually asymptomatic. BRVO has usually better visual prognosis compared with CRVO.

Oral contraceptive pills are known as pro-coagulants; they were associated with a number of thrombotic adverse events involving different organs. Concerning ophthalmic pathology, the sole significant association proven in one large study was with retinal vascular disease⁽⁵⁾.

OCPs used in our case contained a small dose of estrogen (30 µg) and a second generation progestin. The thrombotic risk associated with OCP use was proved to decrease with reduced estrogen dose and third generation progestin use⁽⁶⁾.

Conclusions

BRVO is an uncommon complication in young patients without comorbidities. There was no other cause for retinal venous thrombosis in this patient apart from OCP treatment. Considering the available data, it is reasonable to consider a causal association between OCP and BRVO. ■

References

1. Bradvica M, Benašić T, Maja Vinković. "Retinal Vascular Occlusions" in "Advances in Ophthalmology", edited by Shimon Rumelt, ISBN 978-953-51-0248-9, Published: March 7, 2012.
2. Rogers, S., McIntosh, R. L., Cheung, N., Lim, L., Wang, J. J., Mitchell, P., et al. (2010). The prevalence of retinal vein occlusion: pooled data from population studies from the United States, Europe, Asia, and Australia. *Ophthalmology*, 117(2), 313-319 e311.
3. Lam HD, Lahey JM, Kearney JJ, Ng RR, Lehmer JM, Tanaka SC; Young patients with branch retinal vein occlusion: a review of 60 cases. *Retina*. 2010 Oct; 30(9):1520-3.
4. Glueck CJ, Hutchins RK, Jurantee J, Khan Z, Wang P. Thrombophilia and retinal vascular occlusion. *Clin Ophthalmol*. 2012; 6: 1377-84.
5. Vessey MP, Hannaford P, Mant J, Painter R, Frith P, Chappel D. Oral contraception and eye disease: findings in two large cohort studies. *Br J Ophthalmol*. 1998 May; 82(5):538-42.
6. van Hylckama Vlieg A, Helmerhorst FM, Vandenbroucke JP, Doggen CJ, Rosendaal FR. The venous thrombotic risk of oral contraceptives, effects of oestrogen dose and progestogen type: results of the MEGA case-control study. *BMJ*. 2009 Aug 13;339:b2921. doi: 10.1136/bmj.b2921.