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Bilateral Central Retinal Artery Occlusion (CRAO) after Opium Consumption

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ABSTRACT

Central retinal artery occlusion (CRAO) is an infrequent event determined in ophthalmologic outpatient visits. Bilateral involvement is even rarer. We report a rare case of binary CRAO. He developed an episode of sudden onset of painless reduced vision in the both eyes 10 minutes after administration of opium. He initially indicated a sudden decrease of visual acuity (VA) in his left eye three hours later, he demonstrated with abrupt deterioration of the right eye. Visual analysis revealed hand motion determination in his left eye and perception of light in the right one. The interesting point about this patient is that he did have not any other predisposing factor. To the greatest of our facts, no opium-induced bilateral CRAO research paper has been published in yet. However the manner underlying opium lasts unknown, more agreeable is still desired to prohibit the sequel of this blinding condition.

Key words: CRAO, ophthalmology, Opium Consumption

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1. INTRODUCTION

Central retinal artery occlusion (CRAO) is a disorder of the eye where the stream of blood through the main retinal artery is closed (occluded) (1, 2). There are many various bases of this occlusion; the top usual is carotid artery atherosclerosis. Central retinal artery occlusion (CRAO) is an infrequent condition, which is found in 1 in 10,000 outpatient visits. Binary relation is even rarer, detected in solitary 1-2% of all cases (3). *Von Graefe* reported it in 1859 in a patient of endocarditis. Risk agents for CRAO compose the following: living between 60 additionally 65 years of age, being above the age of 40, male gender, hypertension, Caucasian, smoking and diabetes mellitus (4). Increased risk factors contain endocarditis, atrial myxoma, inflammatory disorders of the blood vessels, as well as predisposition to creating blood clots. Only 20-25% cases are related with embolization along with very minimum cases may be of inflammatory nativity similar vasculitis or optic neuritis (3). Acute CRAO is an ophthalmological critical driven by closure of the central retinal artery by a thrombus or embolus. Clinically, the patient cautions an immediate also painless unilateral depletion of eyesight. Even if there is

only a short closure of the central retinal artery, CRAO directs to everlasting ischaemic ruin of the retina (4, 5). Signs of central retinal artery occlusion (CRAO) often herald affiliated systemic vascular effects. There are several methods in which the retinal arteries can become closed; there may be a hasty narrowing of the vessels due to atherosclerotic alterations, vasculitis, vascular spasm, circulatory collapse, dissecting aneurysm, and hypertensive arterial necrosis (6). Therapy accesses explained in the medical literature compose systemic anticoagulation (7), systemic venous thrombolysis (8), ocular massage (4) also decrease of intraocular pressure (4, 9). Many assays have demonstrated that the retina only has a very short tolerance for ischaemia, which was calculated to be 105 minutes in animal analyses (10-12). If ischaemic conditions remain longer than this course, everlasting retinal ruin seems inevitable. The dimension increase of retinal ruin is an act of the course of ischaemia, it is critical that a countermeasure against CRAO be consequential hastily additionally achievable at any duration (12). To the greatest of our information, no opium-induced CRAO report has been reported in the literature yet. We describe a very infrequent case of binary CRAO expanded in the

locating of opium consumption without any extraneous predisposing agent who lost golden duration of treatment.

2. METHODOLOGY

A 65-year-old man was acknowledged to ophthalmology emergency room with complaints of sudden vision loss in the both eyes, 8 hours before recourse. He developed an episode of sudden onset, painless reduced vision in the both eyes 10 minutes after administration of opium. He initially showed a sudden decrease of visual acuity (VA) in his left eye three hours later, he displayed with abrupt deterioration of the right eye. His passed medical and drug history was negative. Accessing analysis exhibited hand motion determination in his left eye while the visual acuity (VA) of the right eye was in perception of light. Anterior segment appeared unremarkable. Intraocular pressure was both 10 mmHg. The pupils were in mydriasis with good red reflex and not responsive to light.

3. RESULTS AND DISCUSSION

Dilated funduscopy of the both eyes displayed extensive and severe arteriolar narrowing, bilateral disc pallor, retinal pallor at posterior pole along with a cherry-red spot at the macula with edematous retina, definite of CRAO. (Figure 1, Figure 2).



Figure 1. A Fundus photograph of the right eye shows a pale retina with a cherry red macula and yellowish retinal appearance

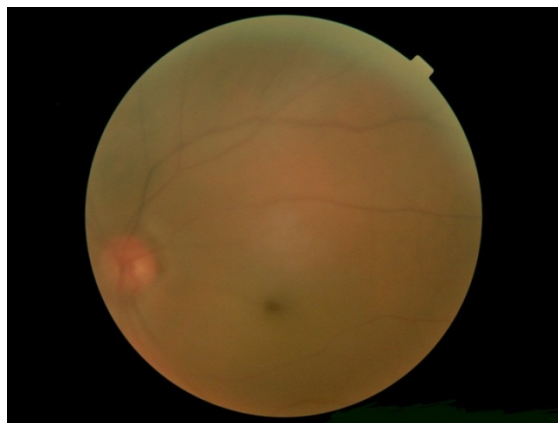


Figure 2. Fundus photograph of the left eye shows extensive and severe arteriolar narrowing and a pale retina with a cherry red spot

The patient was not capable to have fluorescent angiography also indocyanine green angiography due to his agitation due to extreme anxiety. Regardless of citation delaying (about 8 hours delay between visual loss and arrival to ophthalmology ward), the patient admitted and acquired emergency treatment, composing ocular massage, anterior chamber paracentesis also medical activity (vasodilators). Macular OCT (Ocular Computed Tomography) demonstrated thickening of sensory retina in both the eyes. (Figure 3, Figure 4) With these clinical forms and diagnosis of bilateral CRAO, patient was analyzed for existence of any cardiovascular defect (ECG, echocardiography, Doppler of carotid), hypercoagulable state (bleeding time, clotting time, entire hemogram with platelet count, fasting homocysteine level, blood sugar, lipid profile) or vasculitis (ESR, C-reactive protein, C-ANCA for Wegner's granulomatosis, P-ANCA for polyarthritis').

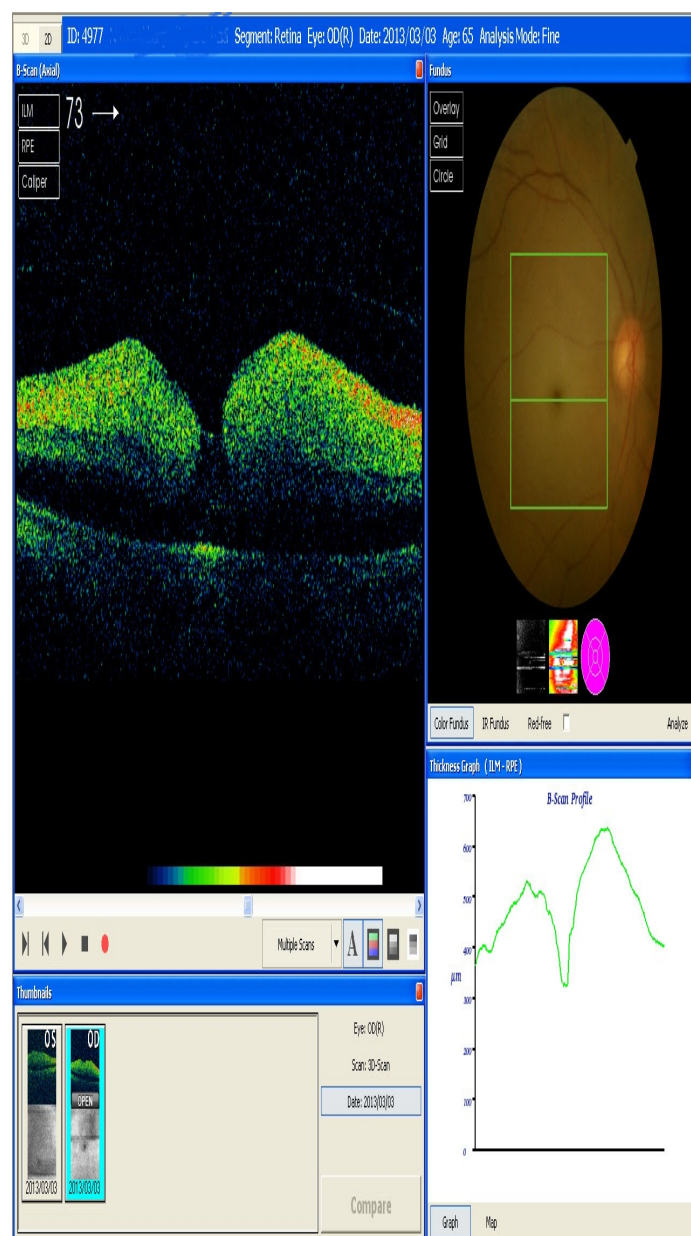


Figure 3. Macular OCT shows significant thickening of sensory retina in the right eye

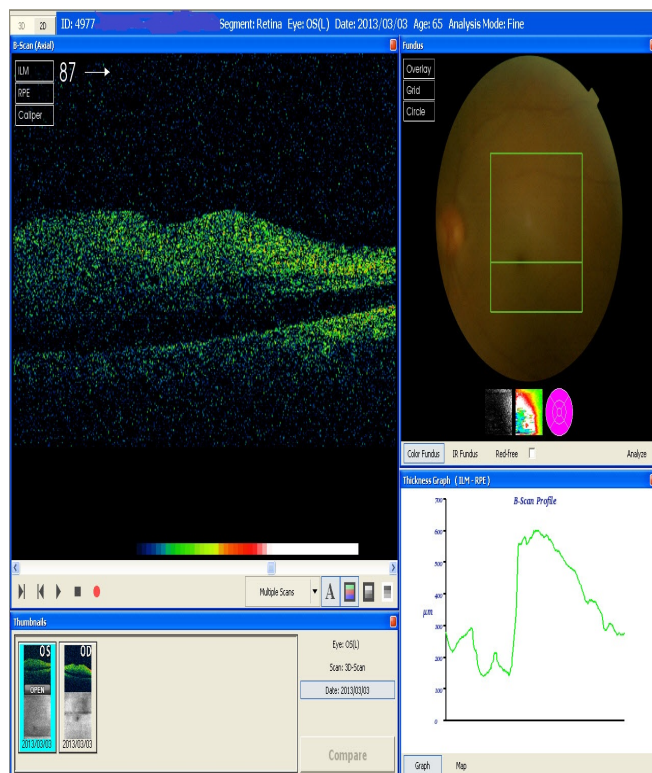


Figure 4. Macular OCT shows thickening of sensory retina in the left eye

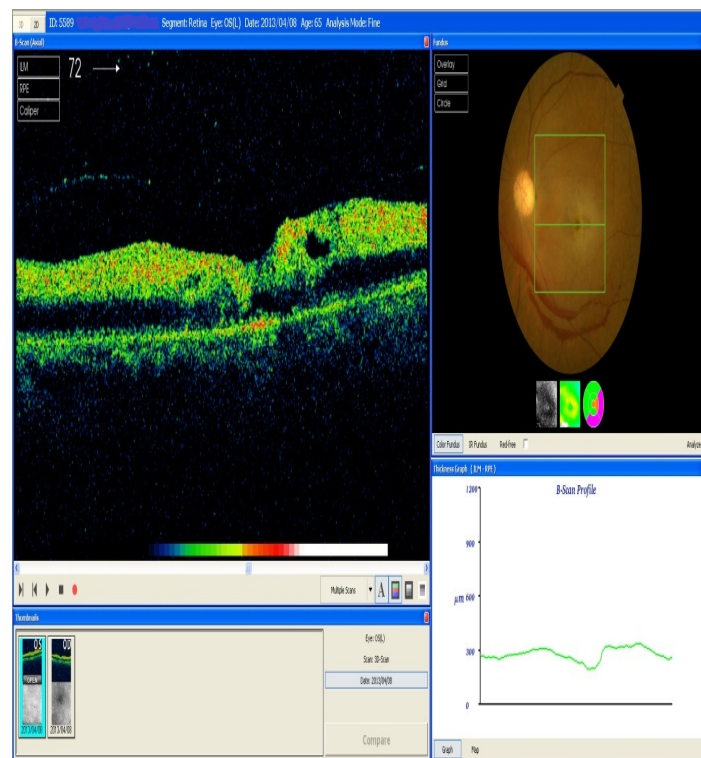


Figure 6. The funduscopy of left eye after 3 months shows optic disc pallor, macular pigmentary changes and inferior preretinal hemorrhage

None of the experiments revealed any abnormality. He was then followed up at first month and then third month during which no improvement of vision was noted. However, during that time the white out retina regained its normal color. The funduscopy displays bilateral optic disc pallor, macular pigmentary alters and inferior preretinal hemorrhage in left eye (Figure 5, Figure 6).

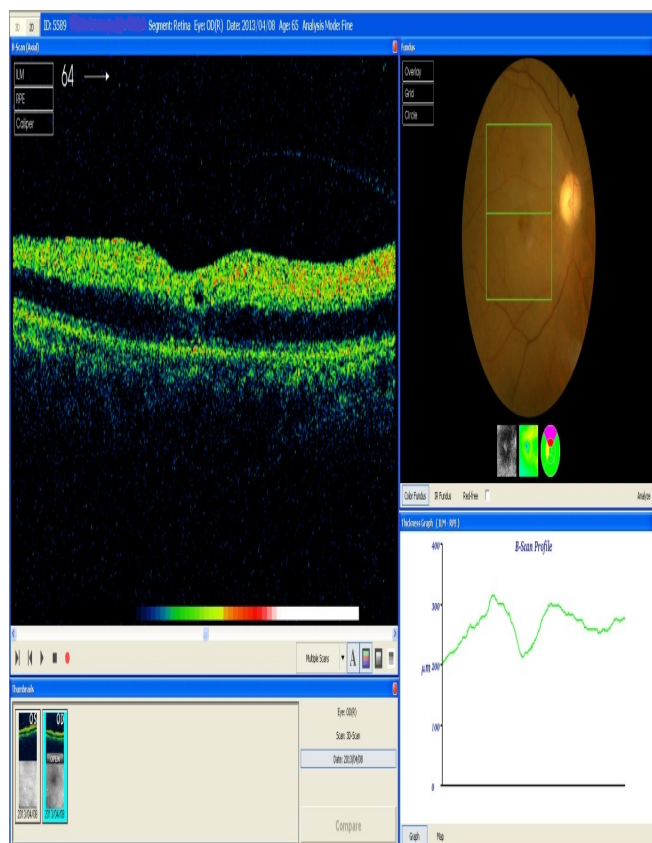


Figure 5. The funduscopy of right eye after three months shows optic disc pallor. The OCT

The OCT shows marked decreasing of macular edema. The OCT of the both eyes at final analysis displays definitive diminishing in macular edema (Figure 5, 6). The Pub Med Database of the United States National Library of Medicine has in excess of nine million citations of Medline and Pre Medline Articles. This database listed only 19 articles about bilateral CRAO. Bilateral CRAOs were analyzed in the setting of Wegener's granulomatosis, temporal arteritis, homocystenuria, sickle cell disorder, *Henoch-Schonlein* purpura, mitral valve prolapse, atherosclerosis and migraine, head trauma (13-16). *Ho et al* and *Zoux et al* reported an alike case with bilateral acute vaso-occlusive retinopathy which directed to devastating the vision impairment in SLE (17, 18). Most of CRAO cases present with painless sudden persistent loss of vision between counting fingers to perception of light. Anterior segment evaluation is usually normal except for the presence of an afferent pupillary defect. The main findings during the initial examination in *Hayreh SS et al* for permanent CRAO were retinal opacity in the posterior pole (58%), cherry-red spot (90%), retinal arterial attenuation (32%), and optic disk edema (22%) and pallor (39%). The most common determinations detected at the late stage, based on survivorship curves, were optic atrophy (91%), retinal arterial attenuation (58%), cilio-retinal collaterals (18%), and macular retinal pigment epithelial changes (11%) (19). No treatment modality has been proven effective in CRAO. Although, the following methods may be efficacious in improving vision if established within 90 to 120 min of occlusion. These combine immediate ocular massage and lowering of intraocular pressure by anterior chamber paracentesis or drugs (acetazolamide 500 mg i.v or orally, topical beta

blocker). Despite these modalities most patients lose to regain any beneficial vision (19). Possible reason of poor visual prognosis in present case is referral delaying (about 8 hours delaying between bilateral visual losses and receiving treatment). Our case is the first described case in English literature of bilateral CRAO following opium consumption. The need of certainty of the mechanism of the insult limits our understanding assembled with the multiplicity of risk agents. The word opium is derived from the Greek name for juice, the drug being acquired from the juice of the poppy, *pap aver somniferum* (20). According to official descriptions, the high prevalence of opium addicts are 2–2.8% in Iran (21, 22). The theory of atherogenic effects of opioids offered by *Mohammadi et al.* Claimed that opium use can increase serum levels of lipids that end as atheroma formation in the aorta of addicted rats (2). *Asgary et al.* displayed that there was a direct correlation between opioids blood levels and duration of addiction. In their study, they also noted that the levels of HbA1c, C-reactive protein, factorII, Fibrinogen, Apo B, Lpa, SGOT, and SGPT were definitively higher in the case topics as compared with controls and that HDL-cholesterol also Apo-a were definitively lower in the case cases, That would explain that opium behaves as a vascular disorder risk factor (23). What first displayed to be CRAO was, in fact, an infrequent demonstration of disorder after administration of opium. Our patient had CRAO in the both eye. We should check opium as a precipitating agent. However the manner underlying opium lasts unknown; more agreeable is still expected to prohibit the sequel of this blinding condition (24).

4. CONCLUSION

binary CRAO is infrequent however critical antipathetic effect which, if not determined in a timely procedure (90-120 minutes), may affect in acute morbidity also everlasting optical spoil. Binary CRAOs were described in the locating of Wegener's granulomatosis, temporal arteritis, homocystenuria, sickle cell disorder, Henoch-Schonlein purpura, mitral valve prolapse, atherosclerosis and migraine head trauma. Our case emphasizes that opium may precipitate critical visual complications such as blindness due to bilateral CRAO, and early diagnosis and hasty treatment is required. Furthermore the manner base opium lasts unknown; more believing is still expected to prohibit the sequelae of this blinding condition.

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AUTHORS CONTRIBUTION

This work was carried out in collaboration between all authors.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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