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Case of Idiopathic Peripapillary Subretinal Neovascular Membrane in an otherwise Healthy Young Male: A case report

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ABSTRACT
Aim of work: to report a rare case of idiopathic peripapillary subretinal neovascular membrane (PCRNVM) in an otherwise healthy young male
patient and method: A case report study of 31-years old healthy male came to ophthalmology clinic complaining of blurred vision.
Result: Fundus examination revealed left idiopathic peripapillary subretinal neovascular membrane (PCRNVM)and its presence was confirmed by optical coherence tomography (OCT) and fundus fluorescein angiography (FFA).
Conclusion: Idiopathic peripapillary subretinal neovascular membrane(PSRNVM)is rare condition in healthy young with no predisposing factors and our case was responded well to single dose of Anti-VEGF (ranibizumab).
Keywords: subretinal neovascular membrane, ranibizumab, peripapillary.

INTRODUCTION

Idiopathic peripapillary subretinal neovascular membrane(PCRNVM) is one of the types of choroidal neovascular membranes (CNVMs) characterized by collection of abnormal blood vessels originating from choroid via break in bruch membrane and located adjacent to the optic disc. It is typically found in patients older than 50 years who are affected by exudative age-related macular degeneration (AMD) [1]. PCR-NVM is usually associated with predisposing conditions, such as multifocal choroiditis

angoid streak, punctate inner choroidopathy, congenital (disc anomaly), optic disc drusen, trauma (choroidal rupture), inflammation or infections (histoplasmosis, sarcoidosis) choroidal tumors (osteoma) and very few cases of PSRNVM without detectable cause called (Idiopathic) [2]. Nowadays, intravitreal anti VEGF is the mainstay of treatment for CNV [3]. The visual outcomes are promising and procedure generally well tolerated [4]. In this study, we reported an idiopathic peripapillary subretinal neovascular membrane in a 31-year-old healthy male patient with no evidence of predisposing factor and responded well with Anti-VEGF (ranibizumab).

CASE REPORT

31-year-old healthy male came to ophthalmology clinic (King Abdul-Aziz Specialist Hospital, Taif Saudi Arabia) complaining of blurred vision in his left eye over the last three months. There was no history of pain and he denies preceding trauma, photophobia ocular discharge, tearing or prior eye surgery. Best corrected visual acuity (BCVA) was 20/20 in the right eye and 20/40 in the left eye. A planation tonometer was normal bilaterally. By bilateral slit lamp examination there were no keratic precipitates and the anterior chamber was deep quiet with no cells or flare. Vitreous cavity was quiet and clear. Funduscopic examination of the left eye (OS) revealed a juxtapapillary peripapillary subretinal neovascularization at the level inferotemporal arcade associated with chorioretinal folds, retina pigment epithelium atrophy, marked retinal edema and hard exudate involving optic disc, macula and papillomacular bundle (**Fig 1a**). FFA showed hypoflourescence area due to obstruction of the background by hemorrhage and exudate **(Fig 1b).** The right eye (OD) was unremarkable.

Screening blood test was done to exclude antecedent causes CBC, inflammatory markers (CRP, ESR) Mantoux test, RA factor, TORCH titres, RPR(VDRL), HIV, serum calcium and all results were normal.

He was treated with intravitreal ranibizumab (0.05 ml of 10 mg/ml) after obtaining a written informed consent from him. At 4-week follow-up, BCVA in the left eye improved to 20/20. Fundus examination of the left eye revealed regression of PSRNVM with moderated resolution of subretinal fluid **(Fig1 C).** OCT revealed moderate reduced of subretinal fluid **(Fig 2b).** The patient has scheduled for more Anti-VEGF injection in next every 4-week follow-up visit until full resolution of edema.

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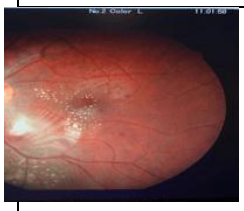
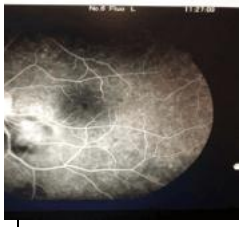
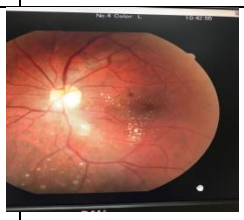
Fig 1a	Fig 1b	Fig 1c
		
Pre-Anti-VEGF injection: color fundus photograph shows subretinal edema and hard exudate involving optic disc, macula and papillomacular bundle.	**FFA:** shows hypoflourescence area due to obstruction of the background by hemorrhage and exudate.	**Post Anti-VEGF injection:** color fundus photograph reveals regression of PSRNVM with resolution of exudate.

Figure 1

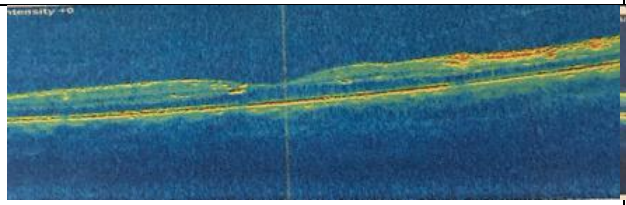
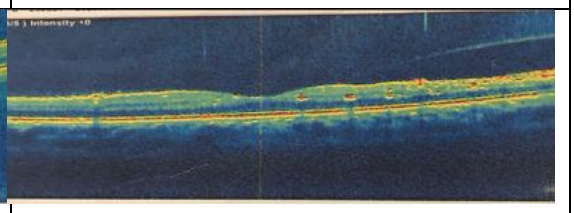
Fig. 2A	Fig. 2B
	
Pre-Anti-VEGF injection: OCT shows subretinal fluids indicated CNVM.	**POST Anti-VEGF injection (1month):** OCT shows moderate resolution of subretinal fluids (SRF) after single dose.

Figure 2

DISCUSSION

The choroidal neovascularization is a manifestation of many diseases affecting choroid, Bruch membrane and retinal pigment epithelium and represent significant cause of visual decline.

Idiopathic neovascular membrane is usually unilateral, which carries better visual prognosis than that associated with AMD and in some cases spontaneous resolution may occur [5]. Peripapillary subretinal neo vascular membrane (PSRNVM) was first described by **Lopez and Green** [6]. It is rare condition characterized by presence of choroidal neo vascular membrane within one disc diameter of the optic nerve head [7]. About 10% of all choroidal neovascular membranes (CNVMs) were PSRNVM with a female predilection [8]. Patient with PSRNVM may only experience the symptoms if the macula was involved by membrane its self or fluid exudation, or if the vessels bleed into the subretinal spaces as seen in this patient [7]. To rule out any antecedent causes, a carful history, thorough ophthalmic examination and extensive Laboratory workup were performed, no clear etiology was identified for this PSRNVM patient as all potential inflammatory causes were excluded. OCT (optical coherence tomography) and FFA (fundus fluorine angiography) established our clinical diagnosis.

In some asymptomatic cases, the neovascular membrane can be observed unless the macula was involved then the treatment should be considered [8]. Various treatment options for patient with PCRNVM have been used. For example, ocular photodynamic therapy[9], laser photocoagulation[10], subretinal surgery[11] and intravitreal injection of anti-vascular endothelial growth factor(VEGF) agent. The optimal therapy was seen with the Anti-VEGF. However, the appropriate management guideline with intravitreal Anti-VEGF for idiopathic CNM has not yet been defined. Currently there are three licensed Anti-VEGF drugs: pegaptanib, ranibizumab and aflibercept and bevacizumab is only licensed for colorectal cancer treatment.

Several different published studies have described the off -label use of Bevacizumab in treatment of idiopathic CNM.

Mandal *et al*. [4] reported results of intravitreal Bevacizumab (1.25 mg/0.05 ml) in 32 eyes with idiopathic sub foveal CNV. After 12 weeks follow up, 19 eyes (59%) had an improvement in BCVA of three or more lines, 11 eyes (34%) remained stable and two eyes (6%) lost three or more lines. Their observations suggested that short term use of intravitreal Anti-VEGF was safe and well tolerated in the management of idiopathic CNV.

Más *et al*. reported that intravitreal injection of bevacizumab in patients with peripapillary subretinal neovascular membrane. Their conclusion stated that bevacizumab appeared to be an effective option for patients who have subretinal neovascular membranes due to papilledema [12].

Although the intravitreal injection was associated with low occurrence rate of ophthalmic complications (endophthalmitis, retinal detachment, transient ocular hypertension) [13] and systemic toxicity (hypertension, stroke) [14] the patient should be aware of it before obtaining an informed (written) consent from him.

In our case report we found that the short-term treatment (one month) with Anti-VEGF was effective and safe. This finding agrees with the results reported previously [15]. One month after initiating treatment, the subjective complaint of blurred vision improved with resolution of subretinal fluid. Our patient was still under observation and had scheduled for more Anti-VEGF injection in next every 4-weeks follow-up visit until full resolution of edema.

CONCLUSION

Idiopathic peripapillary subretinal neovascular membrane is uncommon condition and rarely affect healthy young in the absence of predisposing factors. Although our case report revealed the anti VEGF is effective and safe in short term use after single dose, there is need for long-term comparative studies to determine the efficacy, safety and complications of Anti-VEGF.

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