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INTRODUCTION

Retinal artery occlusion is an ophthalmic emergency that can potentially result in blindness. Branch retinal artery occlusion (BRAO) occurs when the branch of retinal artery is blocked, most commonly due to emboli. The sensitive neural tissue of the retina is highly dependent on adequate blood flow and hypoperfusion of retinal tissue can have profound visual effects resulting in transient or permanent visual field loss.[1] BRAO are rare entity. The incidence of BRAO is closer to 5 per 100,000 persons per year [2]. They are not the result of a single disease, but the manifestation of a combination of chronic systemic abnormalities.[3] One of the causes of BRAO is internal carotid artery occlusive disease (ICAOD). [4]

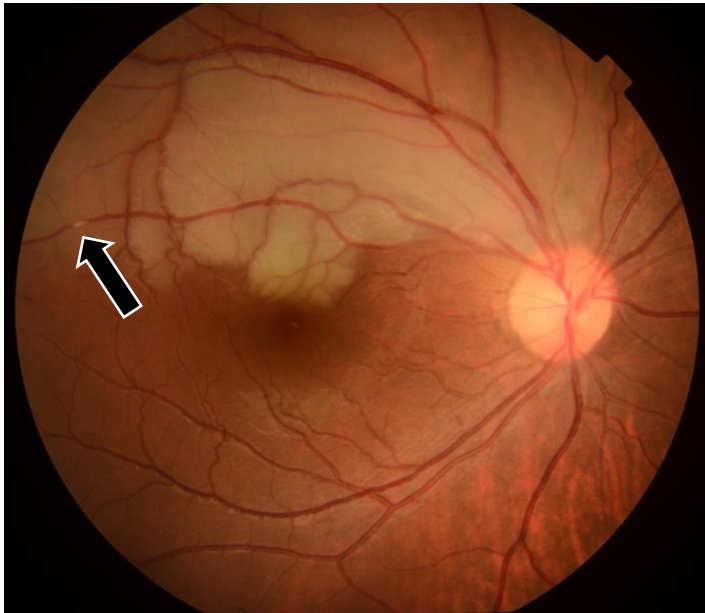


Figure 1: Fundus showing pale and edematous superior retina. There was presence of Hollenhorst plaque over the superotemporal quadrant of the retinal vessel (arrow).

CASE REPORT

23-year-old young female, no known medical illness, non-smoker, denied any history of head & neck trauma.
Chief complaint : Presented with sudden onset, painless, inferior visual field loss on the right eye for three days.

	RIGHT EYE	LEFT EYE
Visual Acuity	6/6	6/6
Intraocular Pressure	13 mmHg	11 mmHg
Fundus	Pale and edematous superior retina with presence of Hollenhorst plaque over the superotemporal quadrant of the retinal vessels	Normal
Humphrey Visual Field	Altitudinal visual field loss	Normal visual field

Systemic examination : Normal vital signs, no cardiac murmurs and no carotid bruit.
Blood screening : Dyslipidemia. Normal vascular disease, vasculitis and coagulopathies screening.
Imaging : Carotid Doppler demonstrated right internal carotid artery thrombosis causing significant internal carotid artery stenosis. Echocardiogram result showed good systolic function with no thrombus seen.

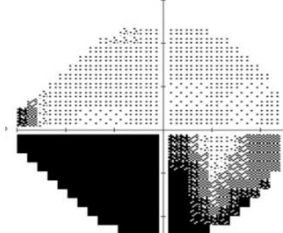


Figure 2: Right Humphrey Visual Field showing altitudinal visual field loss.

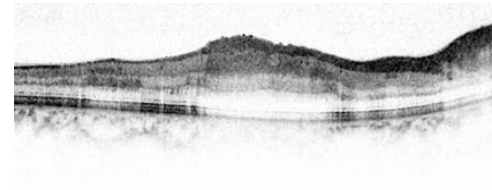


Figure 3: Optical Coherence Tomography showing edematous superior retina.

DISCUSSION

BRAO represents 38% of all acute retinal artery obstructions [5]. Embolism is the most common cause of BRAO. The major source of embolism in the carotid artery is an atherosclerotic plaque (66%), whereas a significant (>50%) carotid artery stenosis accounts for only 30% of cases [6].

Prevalence of internal carotid artery stenosis among general population is low as 2.7% in women [7]. The prevalence of moderate and severe asymptomatic carotid stenosis for women < 50 years old is 0.2% only [8]. This shows the prevalence of carotid stenosis is very low especially in young women and BRAO is an important ophthalmic sign to rule out carotid stenosis.

One of the management is clot busting tissue plasminogen activator (tPA) which is not recommended because of significant symptomatic intracranial hemorrhage without evidence of visual benefit [9]. Systemic management is aimed at reducing morbidity and mortality associated with predisposing factors.

The stroke occurred in retinal artery occlusive disease is 15.0% and increased risk of stroke occurrence with hazard ratio 1.78 [10]. The magnitude of the BRAO effect for stroke was larger among younger adults aged <65 years (hazard ratio, 3.11) [10].

Measures recommended in all cases include cessation of smoking, appropriate dietary advice, managing blood pressure, oral aspirin therapy and specialist referral as per this case.

CONCLUSION

This report is to highlight the rare case of branch retinal artery occlusion caused by carotid artery occlusive disease in young woman.

Urgent identification of the underlying causes is important to reduce morbidity and mortality rate.

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