

Case Report *Retina and Uvea*

## Hemi central retinal artery occlusion post-coronary angioplasty

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Received : 14 February 2023

Accepted : 08 March 2023

Published : 17 June 2023

**DOI**

10.25259/JORP\_1\_2023

**Quick Response Code:**



### ABSTRACT

A 56-year-old male underwent cardiac balloon angioplasty for coronary artery stenosis and after 1 week presented with sudden painless diminution of vision in the left eye. On examination, the best-corrected visual acuity was 6/6, and hand movement was close to the face in right and left eye, respectively. The detailed evaluation revealed hemicentral retinal artery occlusion in the left eye, whereas the right was within normal limits. The patient was treated with anti-glaucoma medication and referred to a cardiologist for further evaluation and treatment. The patient underwent left internal carotid artery balloon angioplasty and stenting. At 2 weeks follow-up, reperfusion was noted in the left eye.

**Keywords:** Central retinal artery occlusion, Cardiac balloon angioplasty, Internal carotid artery balloon angioplasty

### INTRODUCTION

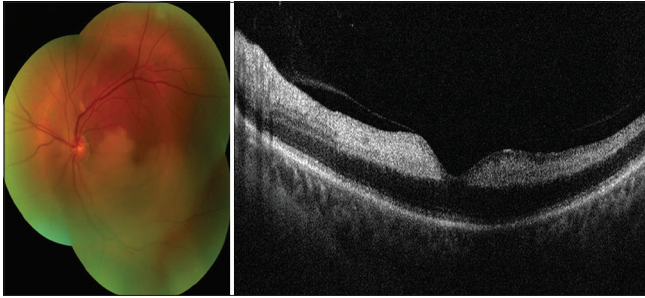
Central retinal artery occlusion (CRAO) is an ophthalmic emergency with an incidence of 1 in 100000. In patients undergoing non-ocular surgeries such as cardiac or spine surgeries, CRAO has been reported previously with incidence ranging from 0.013% to 0.2%.<sup>[1-3]</sup> Here, we report a case of hemi CRAO post-angioplasty.

### CASE REPORT

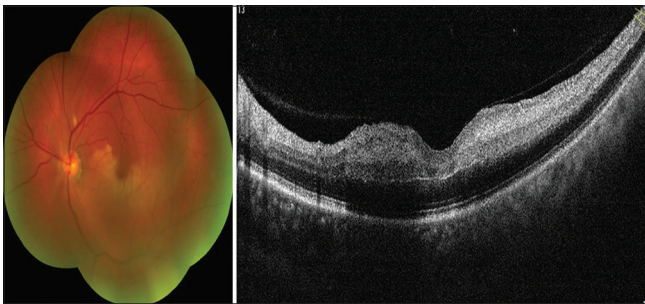
A 56-year-old male patient came to the outpatient department with the chief complaint of sudden painless loss of vision in the left eye since 4 days. He had undergone cardiac balloon angioplasty 1 week prior for coronary artery stenosis. On examination, the best-corrected visual acuity was 6/6, and hand movement was close to the face in the right and left eye, respectively. IOP was within normal limits. Fundus examination revealed hemi CRAO in the left eye whereas the right was within normal limits. Optical coherence tomography in the left eye revealed a hyperreflective inner retinal layer suggestive of acute ischemia [Figure 1]. The ocular massage was done followed by anterior chamber paracentesis. Antiglaucoma medication in the form of tablet acetazolamide 250 mg stat and brimonidine tartrate 0.2% and timolol maleate 0.5% eye drop twice was prescribed for 15 days. The patient was advised to undergo carotid Doppler and 2D echocardiography. Carotid Doppler showed a chronic plaque in a distal bulb of both right and left carotid artery of 58% and 47 %, respectively, extending into the origin of internal carotid artery. The patient underwent left internal carotid artery balloon angioplasty and stenting using XACT™ carotid stent system. At 2 weeks follow-up, reperfusion was noted in the left eye [Figure 2]. The

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**Figure 1:** Fundus photo and optical coherence tomography image showing hemi central retinal artery occlusion post-coronary angioplasty.



**Figure 2:** Fundus photo and optical coherence tomography image showing reperfusion post-left internal carotid artery angioplasty and stenting.

patient was also advised of balloon angioplasty and stent in the right carotid artery.

## DISCUSSION

The ophthalmic artery is the first branch of internal carotid artery and any occlusion due to emboli in the carotid artery would decrease the blood flow subsequently resulting in retinal vascular occlusion. The hemicentral retinal artery (CRA) is characterized by early branching of the CRA before its entry through the lamina cribrosa.<sup>[4]</sup> Thus, hemi CRAO could be attributed to the proximal, pre lamina cribrosal branching pattern of CRA. Hemi CRAO prevalence in coronary artery cases is unknown. In the present case, the patient encountered hemi CRAO post-cardiac angioplasty.

During cardiac angioplasty, the CRA is commonly occluded by cholesterol emboli which are thought to be caused by disruption of vascular plaque by catheter manipulation. The size of emboli as well as the diameters of cerebral and central

retinal blood vessels play a crucial role in determining the final destination of the embolus.

The treatment for CRAO is usually conservative and includes ocular massage, ocular anterior chamber paracentesis, and antiglaucoma medications. Carotid Doppler is usually performed to rule out atherosclerotic plaques in cases of CRAO. In our case, the patient had a chronic plaque in a distal bulb of both the right and left carotid artery, for which he underwent carotid stenting following which retinal reperfusion was noted.

## CONCLUSION

Hence, the cardiologist should be made aware of such incidents and detailed ophthalmology evaluation must be considered post-angioplasty procedure.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

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**How to cite this article:** Patel MB, Nene AS, Pirdankar OH, Shenoy P, Badole P, Shah S. Hemi central retinal artery occlusion post-coronary angioplasty. *J Ophthalmic Res Pract* 2023;1:26-7.