The cilioretinal circulation in giant cell arteritis

Michelle Kasimov BSc(C)[1]; Marko M. Popovic, MD MPH(C)[2]; Jonathan A. Micieli, MD, CM, FRCSC[2,3,4]

1. Faculty of Health, York University, Toronto, Ontario, Canada 2. Department of Ophthalmology and Vision Sciences, University of Toronto, Toronto, Ontario, Canada

3. Kensington Vision and Research Centre, Toronto, Ontario, Canada 4. Department of Ophthalmology, St. Michael's Hospital/Unity Health Toronto, Toronto, Ontario, Canada

INTRODUCTION

- The blood supply to the optic nerve head is from the posterior ciliary arteries and peripapillary choroid
- The cilioretinal artery is an anatomic variant that arises from this system
- Giant cell arteritis (GCA) most commonly causes vision loss as a result of an anterior ischemic optic neuropathy (AION)[1]
- The cilioretinal artery may also be involved in isolation or in combination with AION
- Here, we describe two unique cases involving the cilioretinal circulation:
  1. AION with cilioretinal artery occlusion and paracentral acute middle maculopathy (PAMM)
  2. Central retinal artery occlusion (CRAO) with cilioretinal sparing

METHODS

- Consecutive patients with a diagnosis of GCA seen at St. Michael's Hospital and Kensington Eye Institute were retrospectively reviewed
- Those patients with biopsy-proven GCA and involvement or selective sparing of the cilioretinal circulation were included
- Clinical characteristics including fundus photos and optical coherence tomography (OCT) were reviewed

RESULTS

- Two patients met the inclusion criteria and were included in the study
- Both patients had temporal artery biopsies that confirmed the diagnosis of GCA and were treated with oral corticosteroids

Patient 1:

- A 73-year-old woman with painless vision loss in her left eye for one day
- This was preceded by transient vision loss 10 days prior in the same eye
- Examination revealed a visual acuity of 20/20 OD and CF@1ft OS with a left RAPD. Dilated examination showed a right cotton wool spot, left pallid optic disc edema and retinal edema in the distribution of the cilioretinal artery (**Figure 1**)
- OCT demonstrated hyperreflective band at the level of the inner nuclear layer, compatible with PAMM (**Figure 2**).
- This is the second reported case of a patient with GCA and PAMM in the same eye[2]
- In a patient with GCA, this is the first case that demonstrates PAMM secondary to cilioretinal artery occlusion

Patient 2:

- A 93-year-old woman with new headaches, jaw claudication and fatigue. She presented with a 1-day history of painless vision loss in her right eye
- Examination revealed a visual acuity of HM OD and 20/30 OS with a right RAPD
- Dilated fundus examination showed diffuse retinal edema with selective sparing of the retina in the distribution of the cilioretinal artery (**Figure 1**)

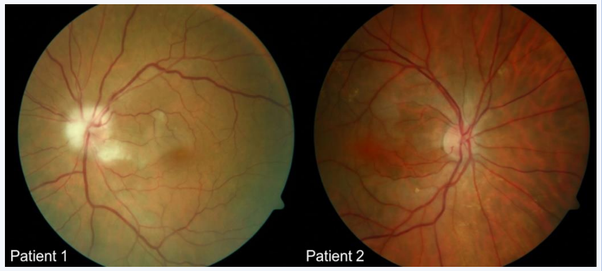

Figure 1. Dilated fundus examinations of Patient 1 OS (73F with AION, cilioretinal artery occlusion, and PAMM) and Patient 2 OD (CRAO with cilioretinal sparing).

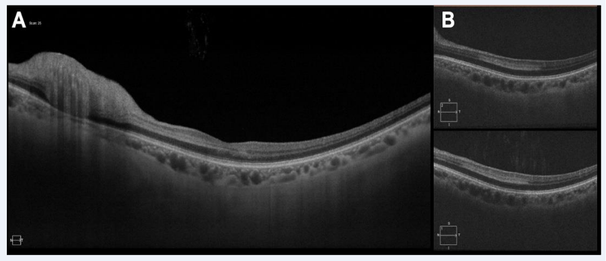

Figure 2A. OCT of Patient 1 OS demonstrating a hyperreflectivity in the retinal nerve fiber later and a band at the level of the inner nuclear layer, compatible with PAMM. 2B. Superior (top panel) and inferior (bottom panel) to the cilioretinal artery occlusion there was isolated hyperreflectivity of the inner nuclear layer due to PAMM.

CONCLUSION

- Vision loss from GCA may selectively involve or selectively spare the cilioretinal circulation
- We report two unique clinical presentations including AION with cilioretinal artery occlusion and PAMM, as well as cilioretinal sparing CRAO
- PAMM itself is a relatively new diagnostic finding and the former case represents one of two cases in literature of GCA and PAMM reported in the same eye

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CONTACT

Jonathan A Micieli, MD
University of Toronto
Toronto, Ontario CANADA
jonathan.micieli@unityhealth.to