

OPHTHALMIC HOSPITALIST INTEREST GROUP

NEWSLETTER

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Announcements

Join the Community!

Read about consult trends, hospital health equity measures, ocular monkeypox, and more!

[AAO/OHIG Online Community!](#)

OHIG Topic Wishlist

Have a topic or clinical case that you'd like to feature in a future OHIG newsletter? We welcome your ideas and expertise. Feel free to email ohig@ohig.org

Welcome New Members!

Thanks for joining OHIG! Please verify your information on the [OHIG website](#).

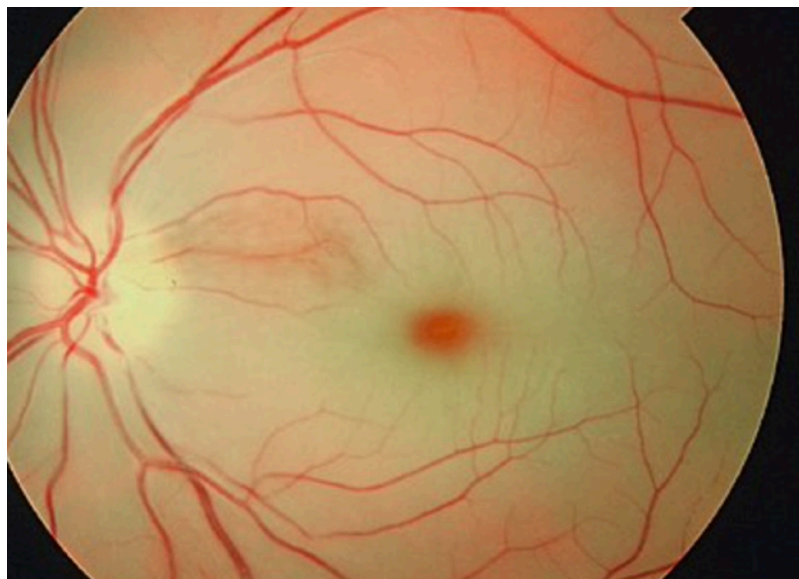


Image Source

Articles

[Management of CRAO: A Scientific Statement from the American Heart Association, Stroke, Mar 2021](#)

A joint subspecialty statement sponsored by the American Heart Association regarding considerations for CRAO management including TPA.

[IV Fibrinolysis for CRAO, A Cohort Study and Updated Patient Level Meta-Analysis, Stroke, Jun 2020](#)

A prospective cohort study showing favorable CRAO visual outcomes with IV alteplase when used within 4.5 hours of visual symptom onset.

[Improving the Telemedicine Evaluation of Patients with Acute Vision Loss, Neurology, Jun 2022](#)

Benefits of tele-ophthalmology to expedite the diagnosis of urgent ocular conditions such as CRAO.

PEARLS



Update on TPA for CRAO



OHIG's first video interview featuring **Dr. Brian Mac Grory**, an Assistant Professor of Neurology, Stroke, and Vascular Neurology and Ophthalmology at Duke University.

He is considered a leader in the field of thrombolytics for the treatment of CRAO and discusses important considerations for this therapy.

[Click here to view](#)

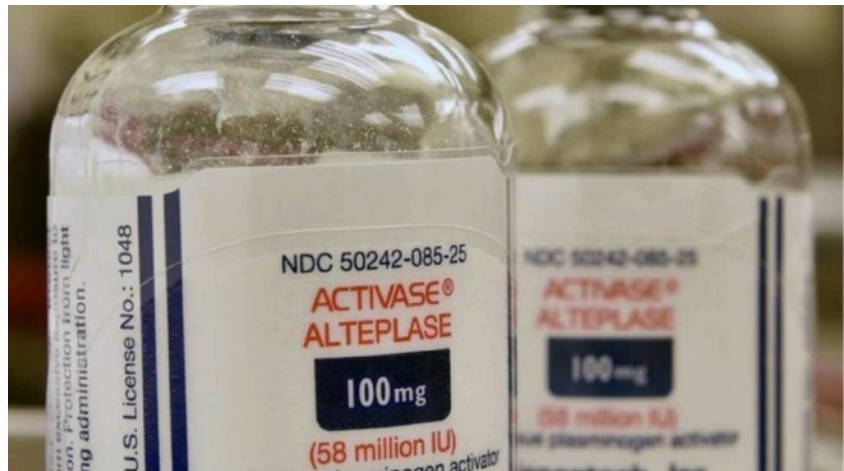
Duke University CRAO Protocol

A helpful institutional guideline which is designed to expedite triage and management for patients with suspected CRAO.

Early dilation is a key way to reduce the amount of time required for diagnostic confirmation and consideration for TPA.

See pages 5 for algorithm diagram

CONSULT ROUNDS



Case 1

64 year old male with a history of HTN and prior left BRAO develops painless vision loss OS at 11:00am while playing golf. He describes his vision as "reading through black plexiglass". He drives straight off the golf course and goes to the ED by 11:30 am and is evaluated by Ophthalmology by 12:00pm.

His left eye vision is CF with a 2+ APD OS. Dilated funduscopy exam is notable for a hollenhorst plaque at the bifurcation of the superior and inferior retinal arteriole branches. No retinal edema is seen.

A stroke protocol is initiated and Neurology consents the patient for IV alteplase which is subsequently given at 12:36 pm. Ocular massage and aqueous suppressant drops are also used to reduced IOP from 12 to 8 mmHg. AC tap is discussed but not performed.

At 1:00pm, the patient's left eye vision improves to 20/40 with resolution of his APD but eventually regresses back to CF OS. The patient is admitted to the ICU per stroke protocol. 8 hours later his vision improves back to 20/40 OS.

OCT imaging is obtained 4 days after hospital discharge and shows a focal patch of mild inner nuclear layer hyper-reflectivity consistent with paracentral acute middle maculopathy (PAMM) of the inferior nasal parafoveal area and inner retinal atrophy

along the superior macula consistent with past BRAO. The patient's vision has remained stable at 20/40 for 3 months.

Case 2

75 year old female with a history of CAD s/p stenting on anti-platelet therapy, dyslipidemia, HTN, migraines, and prior stroke develops painless vision loss OD at 9:30am. She sees a local ophthalmologist who diagnoses her with an acute CRAO and urgently sends her to the ER for stroke evaluation.

She is seen by the Stroke neurologist who is also a neuro-ophthalmologist. Visual acuity is found to be 20/400 OD and 20/20 OS. An APD could not be assessed since the patient was still pharmacologically dilated. Residually dilated exam confirmed pallor in right lower temporal retina.

A stroke protocol is initiated and Neurology consents the patient for IV alteplase administration which is given at 12:52 pm. The patient is admitted to ICU per stroke protocol. By the next day her vision improves to 20/20 OD though her central visual field. Repeat dilated funduscopy exam shows retinal infarction with sparing of the cilioretinal artery area. The patient's vision has been stable for 8 months.

Case 3

82 year old male with a history of CAD s/p bypass, past smoker, and dementia takes a nap at 11:00 am and wakes up at 12:20 pm with newly noted painless vision OS.

Due to his short term memory loss, the patient repeatedly complains of left eye vision loss every 5 minutes to his wife which prompts her to seek urgent evaluation with their established ophthalmologist. The patient is diagnosed with an acute CRAO OS and instructed to go immediately to the ER for urgent stroke evaluation.

In the ER, the patient is evaluated by the neurology service and a stroke protocol is initiated. After contraindications are ruled out and the wife acknowledges treatment limitations and risks, she consents for the patient to receive IV alteplase which is given at 2:35pm which is within 4 hours of symptom onset.

At 3:10pm, the patient is evaluated by ophthalmology in the hospital. Visual acuity is noted to be 20/60 OD and NLP vision OS. Dilated funduscopy exam re-confirms a left CRAO with retinal whitening and a cherry red spot. Ocular massage and timolol and brimonidine drops were given to lower the IOP from 15 to 9 mm Hg.

At 3:35 pm the patient reports to ophthalmologist that his left eye vision has improved. Repeat visual acuity measurements are HM/bare CF OS. The patient is admitted to ICU per stroke protocol.

At 9:20pm the RN notes a change in the patient's neurologic status. The neurology team evaluates the patient and notes new left side weakness, R gaze preference with L side neglect. A STAT head CT shows a

new large bi-frontal intracranial hemorrhage with right-to-left shift and mass effect. Neurosurgery is consulted and TPA is fully reversed and IV mannitol was given. The patient began posturing and after consultation with family, comfort measures were put in place.

Case Comments: The use of TPA for the treatment of retinal artery occlusion is an exciting and controversial topic. These three cases demonstrate its potential for impressive visual outcomes along with its risks. Based on current literature, the ideal time frame for TPA consideration is within 4.5 hours of visual symptom onset. It is important for the ophthalmologist to be aware of this important treatment option and work with the neurology/stroke service to help identify appropriate clinical settings.

Special Thanks: We would like to sincerely thank Dr. Joanne Shen for sharing these important and highly thought provoking cases.



Joanne Shen, MD
Mayo Clinic
Phoenix, AZ

CRAO Survey Questions

- 1) Does your institutional stroke service offer TPA for patients with a diagnosis of an acute CRAO?
- 2) Do you provide stat eye exams for all patients with suspected CRAO who are potential candidates for TPA therapy?
- 3) Among your CRAO patients treated with TPA, have you noticed visual improvement following the procedure?

[Click here](#) to share your responses on Monkey Survey!
Results will be included in next month's OHIG newsletter.

Duke University CRAO Protocol

