INTRODUCTION

Retinal artery occlusion (RAO) is a form of stroke characterized by painless monocular vision loss and pale retina.

RAO increases risk for future strokes and cardiovascular events. Extensive workup is indicated to identify treatable etiologies.

Causes of RAO include embolism, thrombosis, and vasculitis. Most common etiology of RAO is carotid artery embolism, but a cardiac source is found in a few cases.

This case describes the workup for branch retinal artery occlusion (BRAO) and findings of a rare cardiac etiology.

CASE DESCRIPTION

72-year-old female with HTN, HLD, DM type I, CKD stage 2, and GERD presenting from ophthalmology clinic after confirmed left eye BRAO on fundoscopic exam.

Visible intra-arteriolar plaque with persistent retinal whitening.

Acute onset “wavy curtain over the top” of her left eye just prior to dilated eye exam.

Right foot drop since a mechanical fall ~2 weeks ago.

GERD-like symptoms ongoing for past 2 weeks.

Vitals: HR 70, BP 193/84, RR 17, O2 sat 99% on RA, T 36.5 °C

General: appears well

Eye: no nystagmus, no visual field cuts, eyes dilated (from clinic)

Cardiac: RRR, no murmurs, no edema or JVD

Neurologic: A&Ox3, CN all intact, 5/5 strength, sensation intact, no ataxia, no dysdiadochokinesia, - Romberg, - Babinski

EXAM

ED COURSE

EKGs

- New 1mm ST segment elevations in II, III & aVF

LABS

- Troponin 325 ng/L
- WBC 9.2, Hgb/Hct 12/36, INR 1.0, PTT 29, Cr 1.07 (at baseline)

ECHO

- Mild regional wall motion abnormality
- No mass or thrombus
- Preserved EF

Figure 2. Echo report demonstrating hypokinesis in right coronary artery distribution

Neurology consult: NIH stroke scale 0
Cardiology consult: admission to CCU for management of STEMI
Given aspirin 325mg, clopidogrel load, & heparin drip

HOSPITAL COURSE

- Troponins: 434 → 419
- Cardiac catheterization: no culprit lesion, 30% stenosis of RCA
- Brain MRI: punctate infarcts, likely embolic, of right post central gyrus & left pons
- Cardiol artery duplex: no significant atherosclerosis
- Cardiac monitoring: normal sinus rhythm with intermittent PVCs but no other arrhythmia
- Discharged to home next day on aspirin, clopidogrel & metoprolol

DISCUSSION

This patient had an acute BRAO with concurrent STEMI and subclinical strokes.

Source of the original thrombus was not identified, but BRAO was most likely a complication from a coronary artery embolus.

Lack of culprit lesion suggests embolization
RAO has been a reported complication of PCI
Left ventricle thrombus formation more common in anterior STEMI

EKG and Echo help identify cardioembolic source of strokes.

Simultaneous stroke-STEMI treatment poses hemorrhage risk.

Obtain an EKG +/- Echo in stroke patients.

For ST elevations in contiguous leads, initiate catheterization lab. Cannot reliably distinguish STEMI, vasospasm, and Takotsubo.

CONCLUSIONS

Cardiac ischemia is often asymptomatic in elderly, diabetic females.

Initiate dual anti-platelet & heparin in STEMI to lower stroke risk.

Obtain an EKG +/- Echo in stroke patients.

REFERENCES