Case #31921379

Summary: Repeated episodes of transient visual loss (black outs) of the right eye, lasting for 5-10 minutes while either standing or sitting with plaque present in internal carotid artery, which is the presumed source of repeated emboli to the eye.

History

Presentation:
72-year-old with 4 episodes of vision loss.

Inquiry: Bilateral vs
Unilateral unilateral

Inquiry: Duration
5 - 10 minutes apart.

Inquiry: Episode
Characteristics Complete
black out of vision

Inquiry: Activity during the episode
Episodes occur during both sitting and standing.

Inquiry: Pattern of visual loss
4 episodes, 2 episodes involved the lower half of vision, the other 2 involved the central visual field blacking out

Inquiry: Other
Symptoms None

Inquiry: Current Medication
History is significant for a history of coronary artery disease, for which he received stents earlier in the last year.

Exam Results

Laboratory testing: echocardiogram revealed normal heart ventricular size and motion, normal heart valves and normal contrast study.
Carotid Duplex ultrasound revealed 0-40% narrowing of both carotid arteries with calcified plaque, but normal flow on each side.

Commentary:

Because all of the episodes occurred in the right eye, there is suspicion for pathology in the vascular supply to the right eye, such as the internal carotid artery which may be a source of emboli. Since these episodes of transient visual loss in the right eye occur whether the patient was sitting or standing and not related to orthostatic changes, the possibility of a source of emboli as the cause is higher on the list. In this case a source of plaque was found using carotid Duplex ultrasound. Frequently, labs may only give the flow characteristics, but one should insist that they also report the presence of plaque, if found, on the exam.

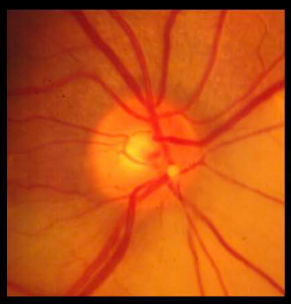
Sometimes a carotid dissection can result in both arterial lumenal narrowing but also platelet emboli originating from the site of dissection and give unilateral amaurotic episodes. One would expect to also observe signs of an ipsilateral Horner's syndrome and ipsilateral facial pain (eye, ear and/or, jaw pain). Carotid dissections with emboli may also cause neurologic symptoms of TIA and are also the most common cause of stroke in young people.

If there were a flow significant stenosis in the right carotid artery, but no emboli, then sudden drops in blood pressure could also produce right sided transient visual loss, but one might also expect that an orthostatic drop in blood pressure going from sitting to standing position would be a more frequent associated precipitating event.

Other causes of drops in blood pressure not associated with positional change, such as a heart dysrhythmia, would be expected to affect both eyes at the same time, but could give symptoms in only one eye if there were a superimposed flow significant stenosis in the carotid artery.

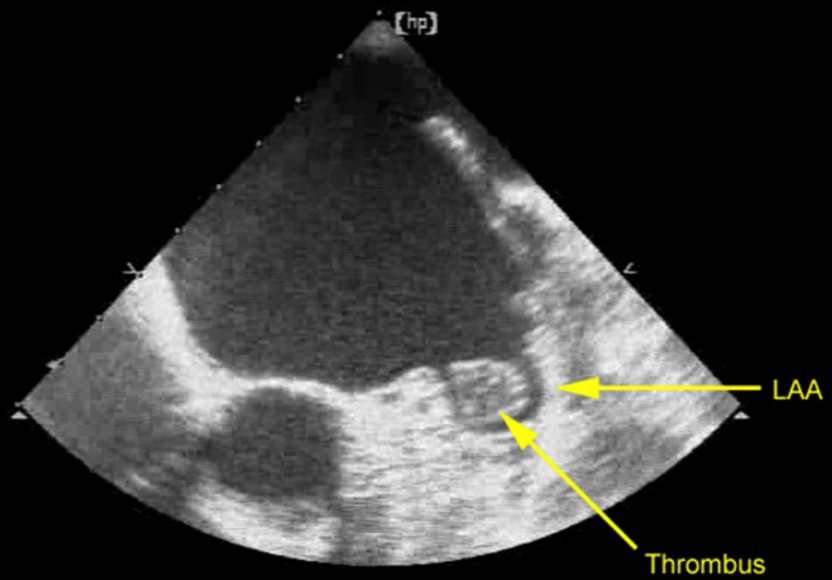
Unilateral decrease in ocular perfusion pressure could also be precipitated by spikes in intraocular pressure, but these usually last longer than 5-10 minutes, unless more transient, briefer elevations of IOP occurred, due to, for example, eye rubbing in the presence of ipsilateral carotid stenosis.

Common types of retinal emboli

Cholesterol	Platelet-fibrin	Calcium
		
• Flat, planar-shape refractile crystals • Usually arise from plaques, lodge at bifurcations • May or may not cause occlusion	• Long thin platelet-fibrin aggregates • Usually arise from ulcerating plaques, lodge along course of vessel • Cause occlusion	• Large globular dull white fragments • Usually arise from calcified valves, lodge in larger arteries at disc • Cause occlusion

Intramural thrombus

Echocardiogram



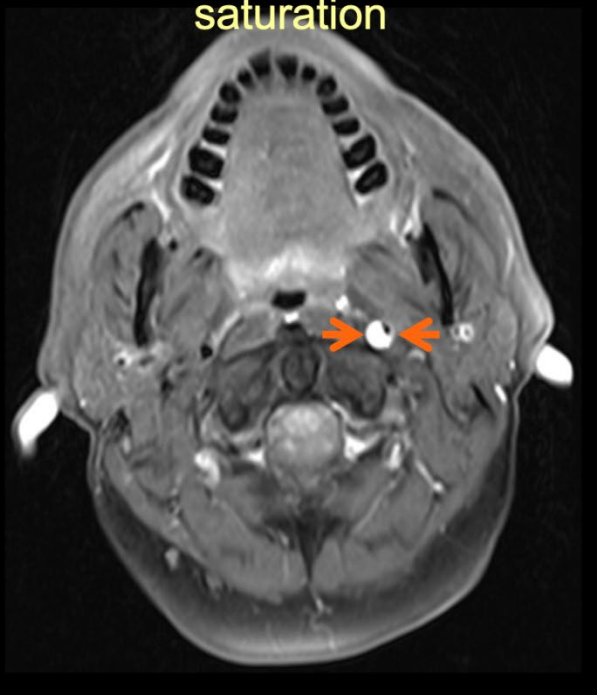
Causes:

- Arrhythmias (e.g., atrial fibrillation)
- Valvular disease (e.g., mitral stenosis)
- Heart failure
- Cardiomyopathy
- Septal defects
- Atrial myxoma

Internal carotid artery dissection

MR angiogram

T1-weighted + fat-saturation



Internal carotid artery dissection

Fat-Saturated T1-Weighted Image