Abstract: A discussion of the evidence-based referral guidelines for patients presenting with amaurosis fugax and a review of the morbidity and mortality associated with this condition.

I. Case History
a. Patient demographics: 66 year-old Caucasian male
b. Chief complaint: Approximately ten incidences of transient dimming of vision lasting less than one minute in the left eye over the past 2 months, with the most recent episode occurring that morning he presented for his eye exam
c. Ocular history: Cataracts OU
d. Medical history: Hypercholesterolemia, Hypertension, Chronic back pain
e. Medications: Simvastatin 20 mg qhs, Atenolol 50 mg qd, Vicodin prn

II. Pertinent Findings
a. Clinical exam findings
   - Best corrected visual acuities: OD: 20/40 (pinhole acuity potential: 20/20), OS: 20/20
   - Remarkable anterior segment findings: Mild cortical cataracts OD>OS
   - Remarkable posterior segment findings: Embolus at an arteriole bifurcation in the inferior retinal arcade OS
   - Patient was immediately referred to the Emergency Department
b. Radiology studies
   - Computed Tomography Angiography of the head and neck report: Greater than 90% stenosis of the left carotid artery at the bifurcation caused by complex, calcified atherosclerotic plaque. Greater than 50% stenosis of the right carotid artery caused by calcified plaque.
   - Non-contrast Computed Tomography of the brain report: No acute intracranial hemorrhage, vascular infarct or ischemia, or mass.
c. Surgical intervention
   - The patient underwent an uncomplicated left carotid endarterectomy two days after his initial presentation to the eye clinic

III. Differential Diagnosis
a. Leading diagnosis: Amaurosis fugax OS
b. Other differential diagnoses: Branch retinal artery occlusion, migraine visual aura without headache

IV. Diagnosis and Discussion
a. Amaurosis fugax: Disease entity
   - Defined as transient monocular vision loss due to ischemia, lasting seconds to minutes, followed by recovery of normal vision
   - Incidence in the United States: 50,000 new cases per year¹
   - Considered a form of transient ischemic attack (TIA), accounting for 25% of all TIAs¹
b. Etiology
   - Amaurosis fugax is most commonly caused by emboli from the ipsilateral carotid artery entering the ophthalmic arterial circulation; less common are emboli of cardiac origin
   - Other causes: systemic vasculitis (giant cell arteritis), hemodynamic vascular insufficiency, hypercoagulable disorders
c. Systemic implications: Carotid stenosis and risk of stroke
   - 19% - 30% of patients with amaurosis fugax have severe ipsilateral carotid stenosis²
   - Levels of carotid stenosis have been defined by large randomized clinical trials such as the North American Symptomatic Carotid Endarterectomy Trial (NASCET), with “severe” defined as 70% - 99% stenosis³
   - The one-year risk of ischemic stroke is 1.8% – 2.2%, with the highest risk within the first 7 days after amaurosis fugax⁴
V. Treatment and Management

a. Ocular management
- No acute ocular management needed
- Optometrists’ most important role is facilitation of urgent referral for evaluation, preferably to a primary stroke center

b. Medical therapy
- Antiplatelet therapy (most commonly aspirin)
- Newer evidence strongly recommends initiating statin therapy as well

c. Carotid Endarterectomy
- This surgical procedure has been shown to be highly beneficial for patients with severe (70% - 99%) stenosis in reducing the risk of ipsilateral ischemic stroke
- Benefit of carotid endarterectomy is greatest within 14 days of the most recent transient ischemic attack, and diminishes rapidly thereafter

d. Future therapies
- Carotid angioplasty and stenting has recently emerged as an alternative, less-invasive, and non-inferior procedure to create revascularization of the carotid artery
- On-going clinical trials are also studying the use of statins as a surgical alternative

e. Evidence-based guidelines for referral for optometrists
1) Perform ocular health examination to seek ocular causes of transient vision loss
2) Inquire about symptoms of giant cell arteritis
3) Urgent referral to an emergency room or primary stroke center for patients with:
   - Presentation within 72 hours of symptoms
   - ABCD² score ≥ 3
   - Positive symptoms for giant cell arteritis
4) Referral for diagnostic work-up as an outpatient within 2 days for patients with:
   - ABCD² score < 3
   - Negative symptoms or low risk for giant cell arteritis

VI. Conclusion

a. Patients with a history of amaurosis fugax are at the highest risk for ischemic stroke within 7 days of their last episode of transient vision loss
b. Carotid stenting is increasing in popularity as an alternative to carotid endarterectomy, and improved medical therapy with statins alone may prove to decrease the initial quoted benefits of surgical intervention in certain patient groups by current on-going clinical trials
c. Patients with symptoms of amaurosis fugax often present to optometrists first, requiring not only awareness of the morbidity and mortality of this entity, but also the need for proper management and urgent referral of high-risk patients

VII. Bibliography