Sudden loss of unilateral vision

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History
A 65-year-old shopkeeper presents for evaluation of a loss of vision in his left eye approximately 6 h previously. The visual loss lasted for approximately 5 min, and was followed by complete recovery. He described the event as though “a curtain came down from above and blocked out the light.” He had no other symptoms at the time of the vision loss.

A history of hypertension and type 2 diabetes mellitus was elicited. His current medications include metformin (850 mg qd) and perindopril (10 mg qd). He smokes 15 cigarettes a day, but does not drink alcohol.

His father died of a stroke at 67 years of age and his mother died of breast cancer at 69 years of age.

Questions
1. Based on this brief history, what is your provisional and differential diagnoses?
2. What are the relevant components of the physical examination?
3. What would be the most appropriate first-line investigations?

Answers
1. The provisional diagnosis is transient monocular blindness, also known as amaurosis fugax, which is a manifestation of a transient ischemic attack (TIA). The most likely cause is passage of an embolus through the retinal artery from embolization at the left carotid artery bifurcation. An embolus is often the first clinical evidence of carotid artery stenosis. Approximately 20% of all TIAs present as amaurosis fugax.

   The differential diagnoses include the following, although these serious eye or vascular conditions are not transient, and thus have more prolonged or even permanent loss of vision:
   • Retinal detachment
   • Retinal hemorrhage
   • Retinal vein thrombosis
   • Acute glaucoma
   • Temporal arteritis
   • Optic neuritis
   • Migraine (the aura of atypical migraine) and hypoglycemia should also be considered

2. The key components of the physical examination include the patient’s vision, a neurologic examination, and a cardiovascular examination, focusing on a search for a potential cause of retinal or cerebral embolization. The neurologic examination should include the following elements:
   • Visual acuity
   • Visual fields
   • Ophthalmoscopy

   The cardiovascular should include the following elements:
   • Pulse
   • Blood pressure (both arms)
   • Auscultation of the heart and carotid arteries

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3. The investigation, which should focus on finding the potential source of retinal embolization, includes the following:
   • Duplex ultrasound of carotid arteries
   • ECG to check for arrhythmias
   • Echocardiography to focus on valves and presence of thrombosis

   It is advisable to obtain a cerebral CT scan or magnetic resonance imaging (if available) to exclude an infarct, small hemorrhage, or mass-occupying lesion.

Question
Discuss the initial management.

Answer
This is a classic presentation of amaurosis fugax, and like all TIA, must be treated as a medical emergency because amaurosis fugax may be the precursor of a major stroke (cerebral infarct). Ideally, the patient should be admitted to a stroke unit in a major hospital. If the patient is not allergic to aspirin, aspirin (300 mg) should be administered immediately. If the patient is known to be allergic to aspirin, an alternative anti-platelet agent, such as clopidogrel, should be given. Anti-platelet therapy, especially for carotid ischemia, gives 30% protection from stroke or death after a TIA compared with no treatment. Depending on investigations and the expertise of the stroke unit, carotid endarterectomy or percutaneous transluminal angioplasty (stenting) may be undertaken. The patient should be strongly advised to cease smoking and his diabetic and hypertensive status re-evaluated. Investigations should also include a serum lipid profile.

Conflict of interest
The author declares no conflict of interest.

Additional reading