Ocular Emergencies

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KEYWORDS

• Ophthalmologic emergencies • Retinal tear • Glaucoma • Ruptured globe
• Acute vision loss • Red eye

KEY POINTS

- Visual acuity should be obtained in all patients with an ocular complaint.
- Central retinal artery occlusion presents with the acute onset of painless monocular vision loss.
- Acute angle closure glaucoma is an ocular emergency and should be considered in the patient with a painful red eye and an intraocular pressure greater than 20 mm Hg.
- The erythrocyte sedimentation rate can be normal in up to 10% of patients with giant cell arteritis.
- Endophthalmitis is an infection emergency of the eye and requires emergent ophthalmology consultation.

INTRODUCTION

Ophthalmologic complaints account for approximately 2 million emergency department (ED) visits per year.[1] These complaints can encompass conditions due to primary ophthalmologic abnormality, infections, or traumatic injuries. Eye injuries account for 3.5% of all occupational injuries in the United States, and about 2000 US workers injure their eyes each day.[2] Eye complaints can be minor to life- or vision-threatening. In this article, the authors cover the common ED presentations for ocular emergencies. Specifically, the article focuses on the historical and physical examination findings that will help readers recognize the red flags in eye and vision complaints.

INITIAL EMERGENCY DEPARTMENT EVALUATION

The history of present illness for ocular complaints should focus on the presence of itching, discharge, pain, blurry vision, light sensitivity, or headache. The location of

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pain, how vision is affected, and the onset and duration of symptoms are additional key elements of the history. Monocular versus binocular symptoms can help formulate the differential diagnosis. Additional important historical features include whether the discharge occurs throughout the day or just in the morning, any recent ocular surgery, or antecedent trauma. Identifying whether the patient wears contact lenses is imperative. Contact lenses complicate all eye complaints. The presence of any associated symptoms should also be asked.

The physical examination should be performed in an organized manner. **Fig. 1** depicts the pertinent ocular anatomy. Visual acuity is the "vital sign" of the eye. Visual acuity should be checked before instillation of any drops when possible and should be done with vision correction. If glasses are not available for correction, looking through a pin hole can help correct the refraction error and compensate for the missing glasses.[3] The visual acuity should be done using a Snellen chart, and the distance should be recorded. Charts with pictures for children or illiterate patients can be used, if unable to read a chart. Documentation of counting fingers, light perception, or lack thereof should also be documented.

A fluorescein stain of the eye should be performed as part of the evaluation of all patients with eye trauma and concern for infection. It is a quick and easy technique that is crucial for the proper diagnosis and management of common eye emergencies. View the fluorescein-stained cornea and conjunctiva under a cobalt light and ideally in conjunction with magnification.[4] Sodium fluorescein is a water-soluble chemical that fluoresces. Contact lenses should be removed before instillation, because it can stain soft lenses. The Seidel test uses fluorescein to detect perforation of the eye. To

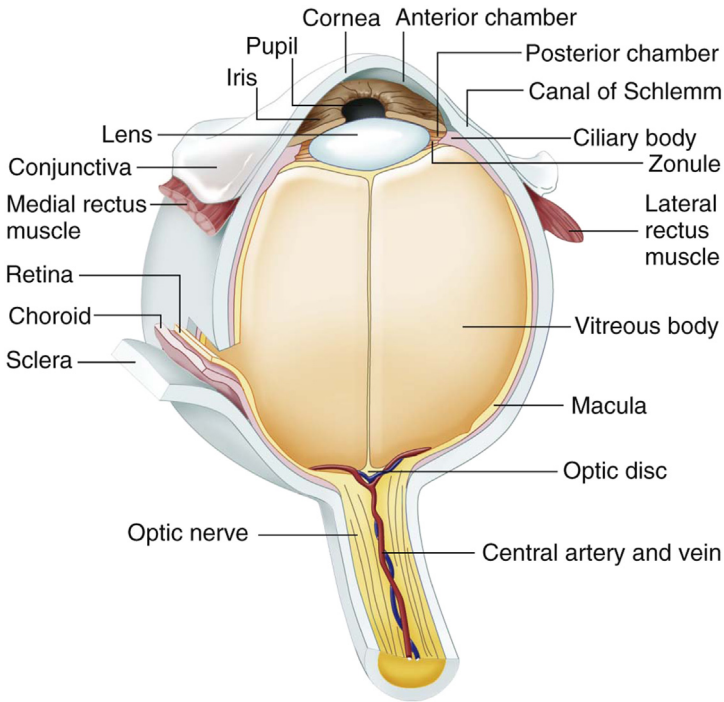

Fig. 1. Essential anatomy of the eye. (*From* Goldman L. Cecil medicine. Mosby's Paramedic Textbook. 23rd edition. Philadelphia: Saunders; 2008.)