OBJECTIVES TO DIRECT THE TRAINING OF EMERGENCY MEDICINE RESIDENTS ON OFF-SERVICE ROTATIONS: OPHTHALMOLOGY

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Abstract — This is the ninth article in a continuing series for emergency medicine education. Ophthalmology is the topic. Since ophthalmologic problems are common in the emergency department and have obvious importance in clinical care, the time spent on an ophthalmology rotation can be very valuable in emergency medicine training. This experience is often limited to a 2-week rotation. Therefore, clear goals and objectives take on a greater significance for the resident-in-training.

Keywords — objectives; training; ophthalmology; emergency medicine

INTRODUCTION

This is the ninth article in a continuing series of defined objectives for off-service training of emergency medicine residents. Ophthalmology is an important and specialized content area in emergency medicine. Information gained on an ophthalmology rotation is particularly valuable in the emergency setting. This rotation is often combined with another experience, for example, otolaryngology. This arrangement places even greater emphasis on the need for a clear set of objectives. If the resident does not know the key points and procedures to learn, it is unlikely he will be taught in this short time frame.

In the residency training program at Wright State University School of Medicine, Department of Emergency Medicine, these objectives are combined with those for the Otolaryngology rotation and placed in a briefcase. This information covers the two 2-week rotations. The Otolaryngology objectives were given as the eighth article in the series, JEM Volume 9, pp 75–80, 1991.

The continuing goal of this series is to provide objectives to allow greater control and coordination of a resident’s experience on an off-service rotation.

The fourth reference, Ophthalmology Study Guide, 5th ed, American Academy of Ophthalmology, is to be read in its entirety at the beginning of the rotation. It is not specifically referenced in these objectives.

10.2 OPHTHALMOLOGY ROTATION GOALS AND OBJECTIVES

CONTENT LISTING

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10.2.1.1. Eye examination — Specialized
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10.2.2.3. Dacryocystitis/Adenitis
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10.2.2.5. Iritis (Uveitis)
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10.2.2.7. Periorbital/Orbital Cellulitis  
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10.2.4.3. Hemorrhage  
10.2.4.4. Papilledema  
10.2.5. Glaucoma  
10.2.6. Eye in systemic disease  
10.2.7. Trauma: inclusive of  
   a. Conjunctiva  
   b. Cornea/Anterior chamber/Sclera  
   c. Iris/Lens  
   d. Vitreous/Retina  
   e. Optic nerve  
   f. Orbit/Retroorbital space  
   g. Periorbital bones  

PROCEDURAL OBJECTIVES

10.2.8. Tonometry  
10.2.9. Slit lamp examination  
10.2.10. Lid flip for foreign bodies  
10.2.11. Eye patching  
10.2.12. Ophthalmoscopic examination  
10.2.13. Contact lens removal  
10.2.14. Anesthetic/antibiotic use  
10.2.15. Visual activity testing  

10.2. EYE ROTATION GOALS AND OBJECTIVES

EVALUATIVE OBJECTIVES

10.2.1. Presentation/Considerations  
10.2.1.1. Eye examination — Specialized  
   a. In response to written questions, be able to demonstrate understanding of pupillary reflexes, optic anatomy, the neuroanatomy of the eye, and the assessment of visual acuity and visual fields. Given drawings, pictures, or actual specimens, the resident shall be able to identify the following structures:  
      a. conjunctiva  
      b. sclera  
      c. medial — lateral canthus  
      d. lacrimal punctum  
      e. meibomian glands  
      f. limbus  
      g. anterior chamber  
      h. ciliary muscle  
   c. For each presenting complaint of dysopia (altered visual acuity), red eye, or diplopia, an evaluation plan can be written, and 4 diagnoses of serious and common etiologies can be given.  
   e. COGNITIVE OBJECTIVES  
   f. PROCEDURAL OBJECTIVES  
   g. EVALUATIVE OBJECTIVES  

10.2.2. Infection/Inflammation  
10.2.2.1. Blepharitis  
   a. Given 3 case descriptions of blepharitis, can identify each etiology by selecting the correct treatment for each.  
10.2.2.2. and 3. Chalazion/Hordeolum/Dacryocystitis/Adenitis  
   a. Match the definition of the above four problems with the appropriate treatment.  
10.2.2.4. Conjunctivitis  
   a. Given 3 clinical descriptions, match the correct diagnosis of viral, bacterial, and allergic conjunctivitis.  
   b. Identify the correct therapy for viral, bacterial, and allergic conjunctivitis.  
10.2.2.5. Iritis  
   a. Given a list of historical, physical, and laboratory or bedside test findings, choose the 4 best findings for iritis.  
   c. Select 3 possible causes of iritis/iridocyclitis, and identify the correct therapy for each.  
10.2.2.6. Keratitis  
   a. Identify the correct slit lamp examination finding and therapy for a patient with a UV light keratitis.  
   b. Identify a picture of herpetic keratitis.  
   c. Identify 3 causes of keratitis, and match the correct therapy for each.  
   d. Explain why steroids are not given for keratitis or other corneal problems without prior consultation with an ophthalmologist.  
10.2.2.7. Periorbital/Orbital cellulitis  
   a. Choose the correct definitions of periorbital and or-
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10.2.2.8. Optic neuritis
1. In a patient with altered visual activity, select the Hx, PEx findings that are most consistent with optic neuritis.


10.2.4.4. Papilledema
1. Select the correct descriptions of papilledema versus papillitis.
2. Choose the correct number of hours post increased intracranial pressure that usually passes before papilledema is seen.
3. List 4 causes of papilledema.


10.2.5. Glaucoma

1. Define the difference between narrow- and wide-angle glaucoma.
2. List 3 mechanisms for early or late posttraumatic glaucoma.
3. Given a patient with headache or eye pain, select the Hx/PEx that are most consistent with glaucoma.
4. Given 4 tonometry readings, choose the intraocular pressure above which glaucoma is considered.
5. Identify a glaucomatous disk from a set of photographs of disk diseases.
6. Write the correct orders for aggressive, but defensible therapy of severe symptomatic glaucoma.


10.2.6. Eye in systemic disease

1. Given a series of photographs, identify the eye findings of:
   a. sickle cell disease
   b. hyperthyroidism
   c. melanoma

2. Identify and describe clinical importance of the following diabetic eye findings:
   a. background retinopathy
   b. proliferative retinopathy
   c. rubeosis iritis
   d. “blot and dot” hemorrhages
   e. Hollenhorst plaque
   f. s/p laser therapy
   g. end-stage diabetic retina
   h. hard exudates

3. Identify from photos and describe the clinical importance of the following hypertensive eye findings:
   a. flame hemorrhage
   b. cotton wool spots
   c. copper/silver wiring
   d. malignant hypertension


10.2.7. Trauma

1. An understanding of the full range of eye trauma is essential to this rotation, using the following ana-
tomic approach:
- a. sclera/conjunctiva
- b. cornea/anterior chamber
- c. iris/lens
- d. vitreous/retina
- e. optic nerve/retroorbital space
- f. periorbit, including bony orbit

Read the following material carefully in an effort to understand the evaluation, identification, and treatment of blunt, penetrating, and chemical injuries to the eye. All major principles are available for evaluation.

References: Wilensky & Read (1), Chapters 5, 6, and 7. All of Deutsch & Feller (2); Mathews & Zun (3), pp 73-167.

PROCEDURAL OBJECTIVES

Each is to be understood and testable in terms of indications, contraindications, and technical performance.

10.2.8. Tonometry
10.2.9. Slit lamp examination
10.2.10. Lid flip for foreign bodies
10.2.11. Eye patching
10.2.12. Ophthalmoscopic examination
10.2.13. Contact lens removal
10.2.14. Anesthetic/Antibiotic use
10.2.15. Visual activity testing

References: Barr & Hedges (5), Chapter 11; Wilesky & Read (1), Chapter 14.

REFERENCES

4. Berson FG. Ophthalmology study guide. 5th ed. San Francisco: American Academy of Ophthalmology; 1987. (To be read in its entirety at the beginning of the rotation.)*

*Enclosed in briefcase.