CPDO Examination - Sample Patient Case 1

Demographics
21-year-old black male; college student

Chief complaint
red, painful eye

History of present illness
  Character/signs/symptoms: hyperemia; pain
  Location: OS
  Severity: severe
  Nature of onset: gradual, worsening
  Duration: 2 days
  Frequency: constant
  Exacerbations/remissions: none
  Relationship to activity or function: none
  Accompanying signs/symptoms: blurred vision; light sensitivity

Secondary complaints/symptoms
none

Patient ocular history
extended SCL wear x 5 years without a disinfecting system; sleeps in the lenses; replaces them every 3 months

Family ocular history
father: uses glasses when reading

Patient medical history
migraine headaches

Medications used by patient
Aleve®; Imitrex®

Patient allergy history
NKMA

Family medical history
father: sickle cell trait

Review of systems
  Constitutional/general health: excellent
  Ear/nose/throat: deniers
  Cardiovascular: denies
  Pulmonary: denies
  Endocrine: denies
  Dermatological: denies
  Gastrointestinal: denies
  Genitourinary: denies
  Musculoskeletal: denies
  Neurologic: denies
  Psychiatric: denies
  Immunologic: denies
  Hematologic: denies

Mental status
  Orientation: oriented to time, place, and person
  Mood: appropriate
  Affect: appropriate
Clinical findings

BVA:          Distance
OD:           20/25
OS:           20/40

Pupils:       PERRL, negative RAPD
EOMs:         full, no restrictions OD, OS
Confrontation fields: FTFC OD, OS

Slit lamp:
  lids/lashes/adnexa: unremarkable OD, mild lid swelling OS
  conjunctiva: normal OD, 3+ diffuse injection OS
  cornea: clear OD; see Image 1 OS, 4 mm area of dense fluorescein staining OS
  anterior chamber: deep and quiet OD, see Image 2 OS
  iris: normal OD, OS
  lens: clear OD, OS
  vitreous: clear OD, OS

IOPs:          15 mmHg OD, 10 mmHg OS @ 10:40 a.m. by non-contact tonometry

Fundus OD:
  C/D, macula, posterior pole: see Image 3
  periphery: unremarkable

Fundus OS:
  C/D, macula, posterior pole: see Image 4
  periphery: unremarkable

Blood pressure: 122/76 mmHg, right arm, sitting
Pulse:          82 bpm, regular
Body mass index: 20.6

Reference ranges
  < 18.5  underweight
  18.5 - 24.9  normal
  25.0 - 29.9  overweight
  > 30.0  obese

Laboratory tests:

<table>
<thead>
<tr>
<th>Test</th>
<th>Results</th>
<th>Reference ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>74 mg/dL</td>
<td>65 - 115 (fasting)</td>
</tr>
<tr>
<td>Urea nitrogen</td>
<td>7 mg/dL</td>
<td>5 - 24</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.9 mg/dL</td>
<td>0.7 - 1.4</td>
</tr>
<tr>
<td>Sodium</td>
<td>140 meq/L</td>
<td>136 - 146</td>
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<tr>
<td>Potassium</td>
<td>4.4 meq/L</td>
<td>3.7 - 5.3</td>
</tr>
<tr>
<td>Chloride</td>
<td>105 meq/L</td>
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<td>25 meq/L</td>
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<td>Calcium</td>
<td>9.1 mg/dL</td>
<td>8.5 - 10.2</td>
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<tr>
<td>RBC</td>
<td>5.3 M/μL</td>
<td>4.5 - 5.9 (male)</td>
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<tr>
<td>Hgb</td>
<td>16.2 g/dL</td>
<td>13.5 - 17.5 (male)</td>
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<tr>
<td>Hct</td>
<td>48%</td>
<td>42 - 54 (male)</td>
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<tr>
<td>MCV</td>
<td>91 fL</td>
<td>80 - 103</td>
</tr>
<tr>
<td>MCH</td>
<td>31 pg</td>
<td>26 - 34</td>
</tr>
<tr>
<td>MCHC</td>
<td>34 g/dL</td>
<td>30 - 37</td>
</tr>
<tr>
<td>RDW-CV</td>
<td>12.2%</td>
<td>11.5 - 14.5</td>
</tr>
<tr>
<td>Parameter</td>
<td>Value</td>
<td>Normal Range</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WBC</td>
<td>5.5 K/µL</td>
<td>3.9 - 11.0</td>
</tr>
<tr>
<td>Neutrophil</td>
<td>60%</td>
<td>49 - 78</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>33%</td>
<td>20 - 45</td>
</tr>
<tr>
<td>Monocyte</td>
<td>4.2%</td>
<td>3.0 - 9.5</td>
</tr>
<tr>
<td>Eosinophil</td>
<td>2.2%</td>
<td>0.0 - 4.0</td>
</tr>
<tr>
<td>Basophil</td>
<td>0.6%</td>
<td>0.0 - 3.0</td>
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<tr>
<td>Platelet</td>
<td>156 K/µL</td>
<td>130 - 400</td>
</tr>
<tr>
<td>MPV</td>
<td>8.9 fL</td>
<td>7.4 - 12.0</td>
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Image 1: OS

Image 2: OS
1. Which of the following is the most likely diagnosis?  
(Item type - Diagnosis)

a. Bacterial keratitis  
b. Epidemic keratoconjunctivitis  
c. Fungal keratitis  
d. Herpes simplex keratitis  
e. Syphilitic interstitial keratitis  
f. Herpes zoster keratitis
2. Given this patient's history, which of the following is most commonly associated with this condition? (Item type - Clinical Correlation of Basic Science Principles)
   a. Herpes simplex virus
   b. Herpes zoster virus
   c. Treponema pallidum
   d. Fusarium species
   e. Pseudomonas aeruginosa
   f. Adenovirus

3. Which of the following is the most appropriate initial management for this patient? (Item type - Treatment/Management)
   a. Ganciclovir gel
   b. Acyclovir po
   c. Loteprednol 0.5% ophth susp
   d. Natamycin gtt
   e. Besifloxacin ophth susp
   f. Penicillin po

4. Which 3 of the following would serve as the best indicators that the treatment for this condition is effective? (Select 3 answer options) (Item type - Related to Treatment/Management)
   a. Reduced intraocular pressure
   b. Diminished corneal neovascularization
   c. Diminished branching lesions
   d. Decreased density of stromal infiltrate
   e. Decreased anterior chamber depth
   f. Decreased anterior chamber reaction
   g. Decreased severity of pain
Demographics
66-year-old Hispanic male; electrician

Chief complaint
blurry vision

History of present illness
Character/signs/symptoms: blurred vision with shadows
Location: OS
Severity: moderate
Nature of onset: sudden
Duration: 5 days
Frequency: constant
Exacerbations/remissions: worse in the morning
Relationship to activity or function: worsens in prone position
Accompanying signs/symptoms: dark spot in superior vision

Secondary complaints/symptoms
fluctuating vision x 1 year in both eyes

Patient ocular history
metallic foreign body OS 10 years ago

Family ocular history
mother: macular degeneration
father: glaucoma

Patient medical history
type 2 DM x 28 years; HTN; erectile dysfunction; alcohol abuse; arrhythmia; smoker (half pack/day x 30 years)

Medications used by patient
metformin; Novolin® 70/30; metoprolol; vitamin D3 supplement; sildenafil citrate; aspirin

Patient allergy history
amoxicillin

Family medical history
mother: diabetes; osteoporosis; hypothyroidism; antiphospholipid syndrome
father: liver cancer; hypertension; alcoholism; congestive heart failure

Review of systems
Constitutional/general health: poor
Ear/nose/throat: denies
Cardiovascular: occasional palpitations
Pulmonary: coughing
Endocrine: denies
Dermatological: denies
Gastrointestinal: excessively hungry and thirsty
Genitourinary: frequent urination
Musculoskeletal: denies
Neurologic: denies
Psychiatric: denies
Immunologic: denies
Hematologic: leg bruises

Mental status
Orientation: oriented to time, place, and person
Mood: sad
Affect: flat
Clinical findings

BVA:  Distance
OD:  20/30
OS:  20/60

Pupils:  PERRL, negative RAPD
EOMs:  full, no restrictions
Confrontation fields:  FTFC OD, superior constriction OS

Slit lamp:
- lids/lashes/adnexa: unremarkable OD, OS
- conjunctiva: normal OD, OS
- cornea: arcus OD, OS
- anterior chamber: deep and quiet OD, OS
- iris: normal OD, OS
- lens: see Image 1 OD, see Image 2 OS
- vitreous: clear OD, OS

IOPs: 18 mmHg OD, 19 mmHg OS @ 12:45 p.m. by applanation tonometry

Fundus OD:
- C/D, macula, posterior pole: see Image 3
- periphery: unremarkable

Fundus OS:
- C/D, macula, posterior pole: see Image 4
- periphery: unremarkable

Blood pressure: 140/85 mmHg, right arm, sitting
Pulse:  80 bpm, regular

Body mass index:  30.3

Reference ranges
- < 18.5  underweight
- 18.5 - 24.9  normal
- 25.0 - 29.9  overweight
- > 30.0  obese

Laboratory tests:

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<tr>
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<td>37 mg/dL (H)</td>
<td>5 - 24</td>
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<td>Creatinine</td>
<td>1.6 mg/dL (H)</td>
<td>0.7 - 1.4</td>
</tr>
<tr>
<td>Sodium</td>
<td>145 meq/L</td>
<td>136 - 146</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.9 meq/L</td>
<td>3.7 - 5.3</td>
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<tr>
<td>Chloride</td>
<td>109 meq/L</td>
<td>101 - 111</td>
</tr>
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<td>CO2</td>
<td>32 meq/L (H)</td>
<td>21 - 31</td>
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<tr>
<td>Calcium</td>
<td>8.7 mg/dL</td>
<td>8.5 - 10.2</td>
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<tr>
<td>Cholesterol</td>
<td>334 mg/dL (H)</td>
<td>&lt; 199</td>
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<td>Triglyceride</td>
<td>228 mg/dL (H)</td>
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<tr>
<td>HDL</td>
<td>35 mg/dL (L)</td>
<td>&gt; 40</td>
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<tr>
<td>LDL</td>
<td>253 mg/dL (H)</td>
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<td>HgbA1c</td>
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<td>Microalbumin</td>
<td>42 mg/L (H)</td>
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<td>Parameter</td>
<td>Value</td>
<td>Reference Range for Male</td>
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<tr>
<td>-----------</td>
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<td>14.1 g/dL</td>
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<td>Hct</td>
<td>43%</td>
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<td>MCV</td>
<td>88 fL</td>
<td>80 - 103</td>
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<td>240 K/µL</td>
<td>130 - 400</td>
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<td>10.2 fL</td>
<td>7.4 - 12.0</td>
</tr>
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</table>
1. Which of the following is the most likely diagnosis for this patient's ocular condition?
   (Item type - Diagnosis)
   a. Sickle cell retinopathy
   b. Severe hypertensive retinopathy
   c. Ocular ischemic syndrome
   d. Proliferative diabetic retinopathy
   e. Ischemic central retinal vein occlusion
   f. Terson syndrome

2. Which of the following best describes the pathophysiology of this patient’s ocular condition?
   (Item type - Clinical Correlation of Basic Science Principles)
   a. Sudden rise in intracranial pressure
   b. Arterial wall thickening
   c. Blockage of venous circulation
   d. Hypoxia-induced vascular endothelial growth factor
   e. Vaso-occlusion of peripheral vessels
   f. Atherosclerotic disease of the internal carotid artery

3. This patient's vision in the left eye is worse in the morning primarily due to:
   (Item type - Clinical Correlation of Basic Science Principles)
   a. hypoglycemia.
   b. nocturnal hypotension.
   c. gravitational pooling of the hemorrhage.
   d. lagophthalmos.
   e. subluxation of the lens.
   f. low ocular perfusion pressure.
   g. medications taken in the morning.

4. Which 2 of the following are most appropriate in the management for this patient's condition in the left eye? (Select 2 answer options)
   (Item type - Treatment/Management)
   a. Improved blood pressure control
   b. Increase in aspirin dose
   c. Endarterectomy
   d. Vitrectomy
   e. Intravitreal pegaptanib injection
   f. Panretinal photocoagulation
   g. Folic acid supplementation
   h. Observation
Demographics
44-year-old white female; veterinary assistant

Chief complaint
blurry vision

History of present illness
Character/signs/symptoms: hazy, cloudy vision
Location: OD
Severity: moderate
Nature of onset: gradual
Duration: 1 week
Frequency: constant
Exacerbations/remissions: none
Relationship to activity or function: none
Accompanying signs/symptoms: floaters; mild pain; photophobia

Secondary complaints/symptoms
none

Patient ocular history
myopia

Family ocular history
mother: retinal detachment
father: cataract

Patient medical history
rheumatoid arthritis x 10 years

Medications used by patient
loratidine; flurbiprofen

Patient allergy history
seasonal allergies; NKDA

Family medical history
mother: thyroid disease; rheumatoid arthritis
father: heart disease

Review of systems
Constitutional/general health: good
Ear/nose/throat: denies
Cardiovascular: denies
Pulmonary: denies
Endocrine: denies
Dermatological: denies
Gastrointestinal: denies
Genitourinary: denies
Musculoskeletal: minor joint pain
Neurologic: denies
Psychiatric: denies
Immunologic: denies
Hematologic: denies

Mental status
Orientation: oriented to time, place, and person
Mood: appropriate
Affect: appropriate
Clinical findings

**BVA:**
- OD: 20/80, 20/80
- OS: 20/20, 20/20

**Pupils:** PERRL, negative RAPD

**EOMs:** full, no restrictions

**Confrontation fields:** FTFC OD, OS

**Slit lamp:**
- lids/lashes/adnexa: unremarkable OD, OS
- conjunctiva: mild injection OD, normal OS
- cornea: see *Image 1* OD, clear OS
- anterior chamber: 1+ cells and trace flare OD, clear OS
- iris: normal OD, OS
- lens: clear OD, OS
- vitreous: 2+ vitreous cell OD, clear OS

**IOPs:** 14 mmHg OD, 18 mmHg OS @ 3:00 p.m. by applanation tonometry

**Fundus OD:**
- C/D, macula, posterior pole: see *Image 2*
- periphery: see *Images 3 - 4*

**Fundus OS:**
- C/D, macula, posterior pole: see *Image 5*
- periphery: unremarkable

**Blood pressure:** 115/70 mmHg, right arm, sitting

**Pulse:** 65 bpm, regular

**Body mass index:** 21.7

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<tr>
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<th>Reference ranges</th>
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<tbody>
<tr>
<td>&lt; 18.5</td>
<td>underweight</td>
<td>65 - 115 (fasting)</td>
</tr>
<tr>
<td>18.5 - 24.9</td>
<td>normal</td>
<td>5 - 24</td>
</tr>
<tr>
<td>25.0 - 29.9</td>
<td>overweight</td>
<td>0.7 - 1.4</td>
</tr>
<tr>
<td>&gt; 30.0</td>
<td>obese</td>
<td>136 - 146</td>
</tr>
</tbody>
</table>

**Laboratory tests:**

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<th>Glucose</th>
<th>99 mg/dL</th>
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<tbody>
<tr>
<td>Urea nitrogen</td>
<td>18 mg/dL</td>
<td>5 - 24</td>
</tr>
<tr>
<td>Creatinine</td>
<td>1.1 mg/dL</td>
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<td>142 meq/L</td>
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<td>Cholesterol</td>
<td>182 mg/dL</td>
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<td>Triglyceride</td>
<td>86 mg/dL</td>
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<td>HDL</td>
<td>51 mg/dL</td>
<td>&gt; 40</td>
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<tr>
<td>LDL</td>
<td>114 mg/dL</td>
<td>&lt; 130</td>
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<tr>
<td>RBC</td>
<td>4.5 M/µL</td>
<td>4.0 - 5.2 (female)</td>
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<tr>
<td>Hgb</td>
<td>14.1 g/dL</td>
<td>12.0 - 16.0 (female)</td>
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<td>Hct</td>
<td>42%</td>
<td>37 - 47 (female)</td>
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<td>MCV</td>
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<td>Eosinophil</td>
<td>4.5% (H)</td>
<td>0.0 - 4.0</td>
</tr>
<tr>
<td>Basophil</td>
<td>1.7%</td>
<td>0.0 - 3.0</td>
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<td>Platelet</td>
<td>255 K/µL</td>
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Image 1

Image 2
1. The fundus findings OD are **most** suggestive of which of the following conditions?
   
   *Item type - Diagnosis*
   
   a. Sickle cell retinopathy
   b. Ocular toxoplasmosis
   c. Presumed ocular histoplasmosis syndrome
   d. Sarcoid retinopathy
   e. **Ocular toxocariasis**
   f. Familial exudative vitreoretinopathy

2. The finding visible in **Images 3 - 4** is **most** consistent with:

   *Item type - Related to Diagnosis*
   
   a. "sea-fan" neovascularization.
   b. chorioretinitis.
   c. **a peripheral vitreoretinal granuloma.**
   d. a chorioretinal scar.
   e. periphlebitis.
   f. the development of vascular exudative leakage.
3. This condition is best characterized by which of the following?  
(Item type - Clinical Correlation of Basic Science Principles)

a. Genetic mutation of the hemoglobin molecule  
b. Underdeveloped retinal blood supply  
c. Infection by an obligate intracellular protozoan  
d. Ingestion of embryonated nematode eggs  
e. Ingestion of dimorphic fungi  
f. Segmental inflammation of retinal blood vessels

4. Which 2 of the following are most commonly associated with this condition?  
(Select 2 answer options)  
(Item type - Clinical Correlation of Basic Science Principles)

a. Genetic defect  
b. Pica  
c. Sickling of red blood cells  
d. Transmission through the blood-placenta barrier  
e. Neovascularization  
f. Vasculopathy  
g. Consuming undercooked meat  
h. Living in endemic regions  
i. Exposure to bird droppings  
j. Exposure to dog feces