Giant Cell Arteritis Presenting with Superior Oblique Palsy

First author: Sarah Lopez, O.D.
Second author: Mariya Gurvich, O.D.

Abstract
An 83-year old white male presents with acute intermittent diplopia, decreased vision OD, and symptoms of headache, scalp tenderness, and jaw claudication. Examination reveals right superior oblique palsy. Temporal artery biopsy confirms giant cell arteritis.

I. Case History

- Chief Complaint
  - An 83-year old white male presents with sudden decreased vision OD and diplopia.
- Personal Ocular History
  - Cataracts OU
- Personal Medical History
  - Head trauma from fall one month ago
  - Hypertension
  - Hyperlipidemia
  - Congestive heart failure
  - Abdominal aortic aneurysm
  - Chronic low back pain
- Medications
  - Amlodipine besylate 10 mg
  - Aspirin 81 mg
  - Atorvastatin calcium 10 mg
  - Furosemide 40 mg
  - Isoniazid 300 mg
  - Metoprolol succinate 100 mg
  - Quetiapine fumarate 50 mg
  - Ranitine HCL 150 mg
  - Valsartan 80 mg
  - Prednisone 100 mg

II. Pertinent Findings

- Best-corrected Visual Acuity
  - OD: 20/40+
  - OS: 20/40
- EOM's: Full OU, right hypertropia in primary gaze, improved with left head tilt
- Pupils: PERRL, (-) APD
- Slit Lamp Exam
  - Anterior segment: 2+ NS OU
- Goldmann Tonometry:
  - OD: 17 mmHg
  - OS: 17 mmHg
  - Time: 9:00 am
- Dilated Fundus Exam
  - Optic Nerve: distinct margins, pink OU
• C/D: 0.25 h/v OU
  o Macula
    ▪ Mild ERM OD, clear OS
  o Vessels:
    ▪ Normal caliber OU, (-) emboli OU
  o Periphery:
    ▪ No holes, tears, breaks 360 OU
• Laboratory Testing and Imaging
  o Erythrocyte sedimentation rate: 58 mm/hr (0 - 22 mm/hr)
  o C-reactive protein: 10.1 mg/L (<10 mg/L)
  o Platelet count: 393,000 cmm (150,000 - 400,000 cmm)
  o Fibrinogen: 632 mg/dL (200 - 400 mg/dL)
  o Lipid profile: Normal
  o Temporal artery biopsy: Positive
  o MRI/MRA Brain: Possible focal narrowing of both M1 segments of the middle cerebral arteries. Smooth narrowing of proximal cervical internal carotid artery resulting in less than 50% stenosis.

III. Differential Diagnosis
• Giant cell arteritis
• Orbital fracture (trauma)
• Myasthenia gravis
• Microvascular ischemia
• Posterior communicating artery aneurysm
• Neoplasm

IV. Diagnosis and Discussion
• Giant cell arteritis is a vasculitis of medium and large size arteries.
• Most common presenting signs are headaches, temporal scalp tenderness, jaw claudication and weight loss.
• Most common ocular symptoms are vision loss and less commonly diplopia.
• Diplopia as a presenting sign of GCA is associated with a higher risk of ensuing vision loss.
• Involvement of contralateral eye during or after treatment is very low.

V. Treatment
• Hospitalized with IV steroids for three days then released on oral steroids.
• Patient presented with NLP vision OS one week after initial presentation.
  o Pale optic nerve edema OS
• Re-hospitalized for IV steroids and released on oral steroids.
• ESR levels began to climb again one week after release. Methotrexate considered for treatment.

VI. Conclusion
• Superior oblique palsies are rare but substantive presenting signs of giant cell arteritis. Correct and early diagnosis is critical as the disease can progress quickly.

