Post-traumatic Blurry Vision in a Soccer Player

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Brief History

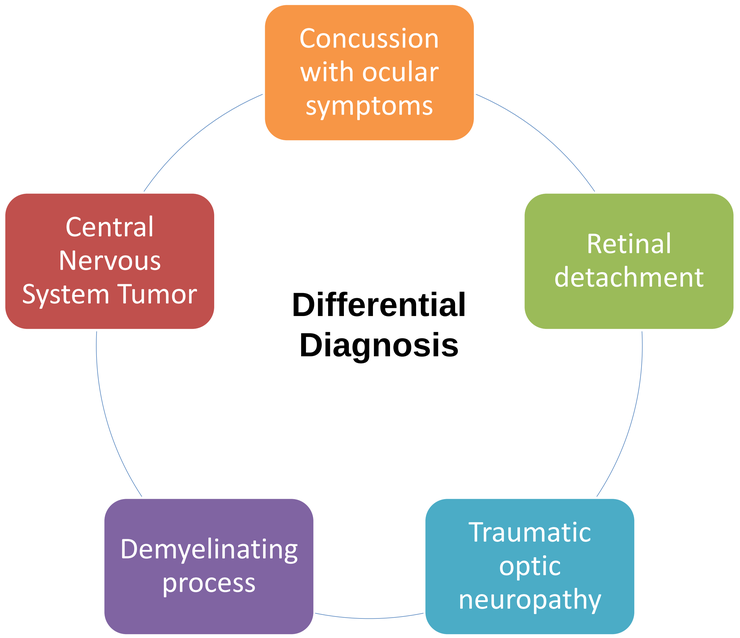
•14 year-old, M soccer player re-presents to the Emergency Department (ED) complaining of *blurry vision* and *headache* after a collision 12 days prior, when he had been diagnosed with a concussion in the same ED
- For two weeks: twice-daily occipital headaches associated with photophobia
- Returned to school, but not soccer due to dizziness with ambulation

•The morning of re-presentation:
- Blurry vision localized to the left visual field of both his left and right eye

Physical Exam

•Normal vital signs, alert and oriented
•Atraumatic skull without edema or bone step-off
•Monocular and binocular testing revealed blurriness in the left side of visual fields on both the left and the right
•Full, but painful range of eye motion
•Ophthalmology's dilated funduscopic exam:
- No afferent pupillary defect, papilledema, loss in visual acuity, or red desaturation

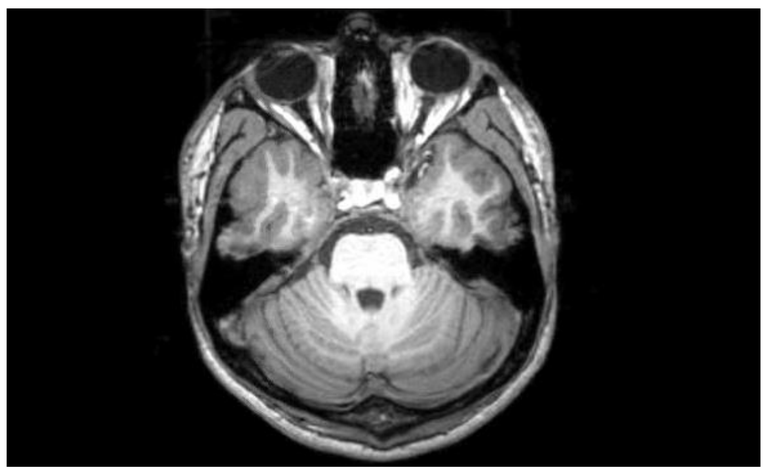
•The remainder of his neurologic exam was benign



Test Results

•Bedside orbital ultrasound: negative for hemorrhage, papilledema, or retinal detachment
•Brain and orbital MRI: patchy enhancement of the left optic nerve just prior to the optic disc, compared to the right optic nerve
- No mass effect, hemorrhage, hydrocephalus, or acute infarction

•Lumbar puncture: Cerebral spinal fluid sent for infectious and demyelinating studies



Final Diagnosis

•Optic Neuritis
- Blurry vision and painful ocular movement, combined with optic nerve enhancement on MRI are consistent with optic neuritis

•The cause was unknown as CSF studies were pending

Discussion

•Vision assessment is critical to the diagnosis of concussion both on the sideline and in a clinic setting
- Often neglected on initial evaluation or when provider has insufficient training on concussion evaluation and subsequent management

• Concussive symptoms are not specific to concussion
- symptoms of visual defects can herald other neurological disorders

•This patient's disabling, focal visual symptoms warranted further investigation for an alternative diagnosis and consultation with subspecialists in ophthalmology, neuro-ophthalmology, and neurology
•Did his concussive event uncover or predispose him to optic neuritis?
- A relationship between concussions and optic neuritis has not yet been reported in the medical literature.

Outcome

•This patient received three days of high dose intravenous steroids.
•His blurry vision, pain with ocular movement, and headaches improved and he was discharged home on a four week steroid taper

Return to activity and follow up

•Three weeks after discharge, remained asymptomatic
•CSF studies
- seropositive IgM Mycoplasma antibody level of 1,640 (negative <770)

•Isolated optic neuritis secondary to mycoplasma infection
•Cleared to return to play soccer on his three different teams