

Collegiate Volleyball Player Experiencing Unilateral Blindness with Strenuous Activity

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Abstract

In this case report, the athlete suffered two blunt traumas to her head. No symptoms were reported until one week later, when the athlete lost vision in her left eye. After a negative CT scan, the athlete was treated conservatively for post concussion syndrome with pain and anti-inflammatories. After two years of minimal relief, athlete saw a neuro-ophthalmologist who diagnosed her with a traumatic optic neuropathy.

Purpose

One domain of athletic training is concussion diagnosis. This case validates the importance of educating athletes, coaches and parents about concussion symptoms. Although concussions are not preventable, education can assist with the proper healing and limit further damage. Further, this case demonstrates the possibility of damage caused by head traumas, but are not classified or treated like concussions.

Background

- 20-year old female
- Collegiate volleyball player
- No previous head injuries besides the two blunt traumas

Differential Diagnosis

- Macular Degeneration
- Retinal Detachment
- Post-Concussion Syndrome
- Traumatic Optic Neuropathy

Clinical Presentation

Athlete has an increase in symptoms with strenuous mental and physical activity. Daily symptoms included headaches, nausea and loss of vision.

Treatment

- Ophthalmologists treated for post concussion syndrome.
- Prescribed various pain and anti-inflammatory medications that were not reducing symptoms.
- Completed conservative treatment for almost two years with minimal relief.
- Athlete was seen by a neuro-ophthalmologist who determined diagnosis.

Diagnosis

Athlete was diagnosed with shearing of the optic nerve sheath within the optic canal with an increase in body temperature. The shearing is disrupting blood supply, creating an ischemic nerve. This leads to an optic nerve neuropathy associated with strenuous activity, causing her to lose vision in her left eye.

Uniqueness

Traumatic optic neuropathies only occur in .7 - 2.5% of recorded head injuries.¹ In this case, the symptom of impaired vision did not present until one week after the second blunt trauma. Also, there was a team of health care providers working towards a diagnosis for over two years. Lastly, the anti-inflammatory medications did not decrease symptoms due to the cause of vision loss resulting from a limited blood supply with an increase in body temperature.

Conclusion

This case highlights the long term diagnosis and attempted treatment of an athlete suffering from a traumatic optic neuropathy. The neuro-ophthalmologist suggested there is no surgical intervention to relieve symptoms due to the optic nerve dural sheath being tethered to the optic canal. Athlete is currently engaged with the athletic training staff to minimize symptoms during physical activity. This case may be used to help differentiate signs and symptoms of optic neuropathies from concussions.

References

1. Yu-Wai-Man, P. (2015). Traumatic optic neuropathy—Clinical features and management issues. *Taiwan J Ophthalmol.* 5:1 (3-8).