



UNC
PEMBROKE

MAYNOR
HONORS COLLEGE

Cage
AS
36
.N6
P458
2018
no. 13

A Ophthalmic Case Report Examining Diagnostic Errors

Senior Project

In partial fulfillment of the requirements for
The Esther G. Maynor Honors College
University of North Carolina at Pembroke

By

Travis Walters
Biology
5/2/18

Travis Walters
Travis Walters
Honors College Scholar

5/3/2018
Date

Conner I. Sandefur
Dr. Conner Sandefur
Faculty Mentor

5/2/2018
Date

Teagan Decker
Teagan Decker, Ph.D.
Senior Project Coordinator

5-4-18
Date

Acknowledgements

I would like to thank Dr. Arghavan Almony for her expert advise and Carolina Eye Associates in Southern Pines for providing me with case details and pictures. I would also like to thank my mentor Dr. Conner Sandefur for his guidance and support throughout my project. Finally, I would like to thank Dr. Mary Ann Masters for helping connect me with Dr. Almony.

Abstract

Purpose: To report on a case of ocular syphilis in which the patient's eye drops were determined to be partially responsible for symptoms of keratic precipitates and cystoid macular edema.

Methods: An 88-year-old female patient was found to have keratic precipitates, cystoid macular edema, and her erythrocyte sedimentation rate was elevated. The patient was diagnosed and treated for ocular syphilis. After treatment, the keratic precipitates and cystoid macular edema were still present. It was determined that the patient's glaucoma medication, Alphagan, was the cause of these symptoms.

Results: The patient received penicillin and was taken off her glaucoma medication and her symptoms were resolved.

Conclusion: It is important to consider all possible sources of symptoms when treating eye diseases. Symptoms could be the result of multiple underlying issues and not directly related to the primary diagnosis.

A Ophthalmic Case Report Examining Diagnostic Errors

Introduction

An ophthalmic case report is a detailed report on a patient's interaction with an eye care professional. Case reports of interesting or unique cases are often published for educational purposes. These reports look at all aspects of the diagnosis of a condition and treatment of the patient. Case reports are often published and shared with other doctors to help them be better prepared to recognize and deal with a similar case. I chose to do my Honors thesis on an ophthalmic case because I plan to work in the field of Optometry which involves caring for patient's eyes and diagnosing eye disease. I began my project by meeting with Dr. Arghavan Almony who is an Ophthalmologist with Carolina Eye Associates in Southern Pines. My project is based on details from an actual case that were provided to me by Dr. Almony. I will begin my studies at the Pennsylvania College of Optometry Doctor of Optometry program in the fall and feel that I will use the insights that I gained by doing this project throughout my future career as an Optometrist.

This case report looks at a patient who is being treated for ocular syphilis and was previously diagnosed with glaucoma. In this case, all patient symptoms were initially attributed to her ocular syphilis diagnosis. Ocular syphilis is an sexually transmitted disease (STD) that affects the eye. The most common

symptoms of ocular syphilis are inflammation of the eye and reduced visual acuity, where the latter refers to sharpness of vision. Visual acuity is measured by an individual's ability to discern letters and/or numbers on a chart at a fixed distance.. Left untreated, ocular syphilis can lead to permanent blindness. In this case, it was found that some of the patient's symptoms were not due to ocular syphilis but were actually side effects from her glaucoma medication: Brimonidine.

Case report

An 88-year-old African-American female reported blurry vision in both eyes. The patient's visual acuity was found to be 20/400 in both eyes ("OU"). The patient had previously been treated for primary open angle glaucoma. A slit lamp examination, which allows examination of the anterior and posterior segments of the eye, revealed the patient had keratic precipitates in both eyes (Figure 1). Fundus examination (pupil dilation) showed the patient had cystoid macular edema. Rapid plasma reagin and FTA-abs test for antibodies to syphilis were both reactive. Erythrocyte sedimentation rate was found to be slightly elevated, suggesting inflammation. Given these symptoms and test results, it was determined that the patient had ocular syphilis. The patient was referred to Office of Infectious Disease and treated with penicillin. After treatment did not resolve the patients keratic precipitates and cystoid macular edema, the patient was referred back to the Office of Infectious Disease, where it was determined that the patient no longer had ocular syphilis. The patient was taken off of her glaucoma medication after it was discovered that these symptoms could be side effects of the medication. Keratic precipitates and cystoid macular edema are rare side effects of Brimonidine.

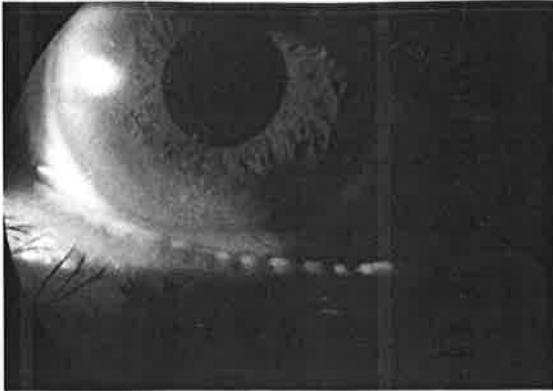


Figure (1): Patient's keratic precipitates.

Discussion

When it was determined that the patient had contracted ocular syphilis, it was expected that after treatment, the related symptoms would dissipate. Ocular syphilis is a STD that can cause uveitis (inflammation of the uvea), loss of visual acuity, cloudiness, and keratic precipitates. Uveitis caused by ocular syphilis is often mistaken for other types of uveitis.³

After treatment, the patient was still experiencing inflammation. The Office of Infectious Disease confirmed that the patient's syphilis was resolved and a more comprehensive investigation was conducted into the cause of the symptoms. It was determined that the patient's uveitis was not related to her diagnosis of ocular syphilis but was caused by another source. The patient's glaucoma medication, Brimonidine, has been found to cause similar symptoms.¹

Brimonidine is an eye drop sold under the brand names Alphagan and Alphagan-P. Brimonidine is commonly used to treat patients with glaucoma, reducing pressure to the eye through alpha 2 adrenergic agonist activity.² However, Brimonidine does have known side effects and has been shown to cause uveitis and

keratic precipitates.¹ Due to the similarity of the side effects to the symptoms of the disease being treated, it was possible to believe that the patient's ocular syphilis was responsible for all of her symptoms.

Conclusion

This case study is important because it emphasizes the need to consider all possible causes of symptoms when diagnosing patients. The patient in this case was correctly diagnosed with ocular syphilis but it was incorrectly assumed that all of the symptoms that she was experiencing were from her original diagnosis. Instead, it was found that her her subsequent symptoms following diagnosis were actually being caused by her medication. It is vital that doctors take a complete medical history and consider all possible sources of symptoms.

References

1. Beltz J, Zamir E. Brimonidine Induced Anterior Uveitis. *Ocular Immunology and Inflammation*. 2015;24(2):128-133.
2. Mohamed JA, Abo-Elkhei OI. The Role of Brimonidine Eye Drops as an Adjunctive Therapy for Optic Nerve Protection in Patients with Controlled Open Angle Glaucoma. *The Egyptian Journal of Hospital Medicine*. 2017;68(3):1418-1424.
3. Nguyen A, Bergard SC, Lopez JP, Jenkins TC. A Case of Ocular Syphilis in a 36-Year-Old HIV-Positive Male. *Case Reports in Infectious Diseases*. 2014;2014:1-4.