

Oculi Sinistra Anterior Uveitis in A 35 Years-Old Man

Halika Irza Ramadhanti^{1*}, Ida Nugrahani²

¹ Faculty of Medicine, Universitas Muhammadiyah Surakarta, Jalan Ahmad Yani, Sukoharjo, 57169, Central Java, Indonesia

² Ophthalmology Department, Karanganyar Regional Hospital, Central Java

Abstract

Purpose: This case study aims to describe the clinical presentation, diagnosis, and management of a 35-year-old male patient with Oculi Sinistra Anterior Uveitis. It highlights the importance of early intervention in preventing complications, particularly vision impairment.

Methodology: The study is based on a case report of a patient presenting with acute unilateral anterior uveitis at the Eye Polyclinic of Karanganyar Hospital. The diagnosis was established through a detailed clinical history, ophthalmologic examination, and symptom analysis. The patient was treated with a combination of topical corticosteroids and antibacterial eye drops, along with oral corticosteroids, to reduce inflammation and prevent infection.

Results: The patient presented with symptoms of unilateral eye pain, redness, tearing, and blurred vision. The ophthalmologic examination revealed hyperemic conjunctiva, a cloudy anterior chamber, and a slightly delayed light reflex. Treatment with topical and oral corticosteroids successfully reduced inflammation and improved symptoms. The patient's prognosis was favorable, with expectations of full visual recovery if treatment adherence was maintained.

Applications: This case emphasizes the significance of early diagnosis and appropriate treatment of anterior uveitis to prevent severe complications such as glaucoma and cataracts. It also provides insights into the clinical presentation and management strategies that can be applied in similar cases, particularly in regions where epidemiological data on uveitis are limited.

Introduction Section

Uveitis refers to the inflammation of the uvea, which comprises the iris, ciliary body, and choroid. Anterior uveitis specifically involves inflammation of the iris, known as iritis, and the ciliary body tissue, referred to as iridocyclitis. This condition typically presents unilaterally and has an acute onset. In developing nations, uveitis is responsible for 10-15% of cases of blindness. Globally, there are approximately 15 new cases of uveitis diagnosed annually per 100,000 individuals, translating to around 38,000 new cases each year, with a balanced distribution between males and females. Causes of anterior uveitis include: idiopathic (idiopathic iridocyclitis), vasculitis/arthritis related diseases (HLA-B27 iridocyclitis, juvenile rheumatoid arthritis, ankylosing spondylitis, Reiter syndrome, inflammatory bowel disease), infectious diseases (Herpes simplex keratouveitis, Herpes zoster keratouveitis), neoplasm (leukemia/lymphoma) and pneumonia, Streptococcus ginosa, and 2 other causes (Fuchs heterochromic iridocyclitis, traumatic iridocyclitis, glaucomatocyclitis crisis). This patient had symptoms of eye pain since 2 days ago after waking up. Complaints accompanied by red, watery eyes, and blurred vision. Then, the diagnosis obtained for this patient is anterior uveitis. Early treatment is necessary to prevent blindness. The goals of treating anterior uveitis are to improve visual acuity, relieve ocular pain, eliminate ocular inflammation or identify the origin of the inflammation, prevent synechiae, and regulate intraocular pressure.

Case Description

Mr.N, 35 years old, came to the Eye Polyclinic of Karanganyar Hospital on August 2, 2024 with a chief complaint of left eye pain after waking up since 2 days ago. Complaints accompanied by redness, watery eyes, and blurred vision. The patient has used eye drops containing tetrahydrozoline HCl and benzalkonium chloride but it did not improve. The patient denied any history of diabetes mellitus, hypertension, and previous use of glasses.

At the time of the visit, the patient's general condition was good and the patient's consciousness was compos mentis. An ophthalmologic physical examination of the patient revealed the following results: VOD: 6/6, VOS:6/6 On anterior segment examination the superior et inferior palpebra were calm, conjunctiva bulbi OS hyperemic (+), COA OS cloudy and deep (+) light reflex OS D+/ID+ (slightly slow). On palpation examination no tenderness was found in the left eye,

* Corresponding author: alika.ramadhanti1@gmail.com

Eyeball pressure 18-15 mmHg. The treatment given included eye drops containing a combination of Dexamethasone, Polymyxin B, and Neomycin sulfate ED md/2 hours 1 drop, and methylprednisolone 4 mg 2-2-0 tablets after meals. The administration of these two drugs is expected to suppress the anti-inflammatory reaction and prevent further infection.



Figure 1. The patient's sinistra oculi and ciliary injection were found

Discussion

A 35-year-old male patient with a chief complaint of left eye pain after waking up since 2 days ago. This patient was diagnosed with anterior uveitis based on history and examination. Based on anamnesis, the symptoms of eye pain were found since 2 days ago after waking up. Complaints are accompanied by red, watery eyes and blurred vision.

The visual examination obtained the visus oculus dextra 6/6, while the visus oculus sinistra 6/6. On examination of the anterior segment, the superior and inferior palpebra were calm, the bulbous conjunctiva OS was hyperemic (+), ciliary injection was found in OS, the COA was cloudy and deep, the light reflex OS D + / ID + (slightly slow).

Diagnosis of anterior uveitis can be made because of the presence of blurred vision and eye twitching. On examination of the anterior segment, the bulbous conjunctiva is hieratic and the COA is cloudy.

Treatment included a formulation of eye drops that includes a blend of Dexamethasone, Polymyxin B, and Neomycin sulfate ED MD/2 hours 1 drop, and methylprednisolone 4mg 2-2-0 tabs after meals. In an effort to prevent bacterial infection and reduce local inflammation such as pain and redness, antibacterial eye drops and corticosteroids were given. In addition, oral corticosteroids were given to prevent the expansion of inflammation and suppress inflammatory reactions.

There is no accurate data on the incidence of uveitis in Indonesia. Its prevalence varies depending on geographic location, age of the population, place and time of the study. However, in the United States, uveitis accounts for 10% of blindness, with an incidence of 15 new cases per 100,000 people each year. The incidence is lowest in the pediatric group (prevalence 30/100,000) and highest in those over 65 years of age (prevalence 151.3/100,000). Female patients are slightly higher than male patients (Budiono et al., 2019).

Acute anterior uveitis and recurrent acute anterior uveitis represent the predominant forms of uveitis encountered in clinical practice. The leading contributors to moderate vision impairment in cases of acute anterior uveitis include corneal scarring, uveitic glaucoma, and chronic cystic macular edema. For patients predisposed to uveitic glaucoma, gonioscopy is employed to assess the progression of peripheral anterior synechiae (PAS). An infectious origin is a notable risk factor for the onset of uveitic glaucoma, accounting for 13.9% of anterior uveitis cases, with the majority attributed to viral causes (Al-Ani et al., 2020).

Symptoms of anterior uveitis are generally mild to moderate and may resolve on their own. However, severe uveitis can lead to vision loss. Clinical symptoms include eye redness, pain, photophobia and decreased vision. Anterior uveitis causes spasm of the ciliary muscle and pupillary sphincter muscle, causing dull/pulsing pain and photophobia. If the pain is severe, you should suspect an increase in intraocular pressure. Spasm of the pupillary sphincter causes miosis and leads to posterior fusion. Vision loss is mainly due to aqueous humor opacification and corneal edema, but uveitis does not always cause corneal edema (Sitompul, 2016).

According to Sitompul (2016), the sign of acute anterior uveitis is ciliary injection due to vasodilation of the posterior longus ciliary artery and anterior ciliary artery that bleeds the iris and ciliary body. In the anterior chamber, there is a release of inflammatory cells, release of proteins (cells and flares), and deposition of inflammatory cells onto the corneal endothelium (corneal deposits). Fine keratin deposits are generally caused by non-granulomatous inflammation, whereas coarse keratin deposits are associated with granulomatous inflammation. This result is similar to the symptoms we found in this patient, namely throbbing pain in the eye, decreased visual acuity and ciliary injection.

According to research by Accorinti et al. (2020) symptoms of acute anterior uveitis include corneal edema, abnormal corneal sensation, previous history of keratitis and iris atrophy, unilateral involvement and an increase in IOP ≥ 24 mmHg without the use of corticosteroids. This is different in our patient, where there is unilateral involvement, no increase in intraocular pressure and a history of keratitis. So viral uveitis can be used as a differential diagnosis for this case.

Topical corticosteroids are primarily employed to address inflammation in the anterior segment, as they exhibit limited penetration into the posterior segment. Their key benefit lies in their capacity to attain therapeutic concentrations within the anterior chamber (Steroid options for treatment of uveitis, 2024).

From many studies, it is found that many cases occur acutely and unilaterally with complications. The most common is uveitis affecting the anterior segment followed by panuveitis, intermediate uveitis and finally posterior uveitis. Idiopathic causes were the most common cause of anterior uveitis, while infectious causes were the most common cause of posterior uveitis (Budiono et al., 2019).

Uveitis can recur, and patients with recurrent anterior uveitis are more likely to develop cataracts. Undergoing cataract surgery will also increase the likelihood of anterior uveitis recurrence due to the surgery (Williams et al., 2017).

According to research by Gueudry & Muraine (2017), the development of chronic uveitis or anterior uveitis can lead to potentially blinding complications. Complications to the posterior segment include the occurrence of optic disc or macular swelling. The development of chronic ocular hypertension and then secondary glaucoma is a major complication of anterior uveitis. Local or systemic steroid treatment often encourages cataract, which often complicates anterior uveitis.

The prognosis in this case is *ad vitam: bonam* because it does not threaten death, *ad visam: dubia ad bonam* because the vision is likely to return to normal because it is treated with the right medicine and on time, *ad fungsionam: dubia ad bonam* because of course when vision has recovered it will not interfere with the patient's work activities, *ad cosmeticam: dubia ad bonam* because it does not interfere with the function of aesthetics.

Inflammation of the posterior segment is more likely to be sight-threatening than anterior uveitis, but inadequately treated anterior uveitis can lead to vision loss. The visual morbidity of both anterior uveitis and posterior uveitis imposes a significant burden on patients' livelihoods and quality of life, as well as on economic productivity and the use of healthcare resources (Xie et al., 2024).

The risk of vision loss is considerably reduced in cases of anterior uveitis when compared to intermediate and posterior uveitis. In contrast to posterior uveitis, vision loss associated with anterior uveitis is less often linked to retinal issues and is more frequently related to glaucoma. This distinction can be explained by the differing anatomical locations of inflammation in each uveitis type and the resulting ocular anatomical alterations that occur (Al-Ani et al., 2020).

The objective of treating uveitis is to attain a prolonged remission without the use of corticosteroids. During the acute phase, it is crucial to swiftly manage inflammation to minimize structural damage that could lead to visual impairment. Corticosteroids are the primary treatment option in this phase due to their potent anti-inflammatory properties; they should be initiated at elevated doses and then gradually reduced according to the patient's clinical response. Typically, hourly topical administration is adequate for managing anterior uveitis. Following this, a gradual tapering schedule, generally involving a reduction of one drop per day each week, should be adopted to mitigate the risk of flare ups and rebound effects. (Xie et al., 2024).

Conclusion

Anterior uveitis is an inflammation that occurs in the front of the eye, specifically in the iris and ciliary body. Uveitis is a complex disease and can be associated with systemic disease. Although the inflammation is intraocular and affects only the eye, it can also be associated with systemic conditions. Ocular inflammation is often unrelated to inflammatory activity elsewhere in the body, however it is important for the clinician to take a thorough history. It can be caused by infection, autoimmune disease or eye injury. Symptoms include eye pain, redness, blurred vision and sensitivity to light. Treatment of anterior uveitis usually involves the use of anti-inflammatory medications, and medication to address the underlying cause. If left untreated, anterior uveitis can lead to serious complications, such as glaucoma or cataracts. Early diagnosis and treatment is essential to prevent further complications.

Acknowledgement

I would like to express my sincere gratitude to my supervisor for his advice and support while writing this work. It is thanks to his help and support that I was able to complete this journal.

References

- Accorinti, M., et al. (2020). Viral acute anterior uveitis: Clinical signs useful for differential diagnosis. *Ocular Immunology and Inflammation*, 29(7–8), 1355–1362. <https://doi.org/10.1080/09273948.2020.1751213>
- Al-Ani, H. H., et al. (2020). Vision loss in anterior uveitis. *British Journal of Ophthalmology*, 104(12), 1652–1657. <https://doi.org/10.1136/bjophthalmol-2019-315551>
- Budiono, Saleh, Moestidjab, & Eddyanto (Eds.). (2019). *Buku ajar ilmu kesehatan mata*. Surabaya: Airlangga University Press.
- Chan, N. S., Chee, S. P., Caspers, L., & Bodaghi, B. (2018). Clinical features of CMV-associated anterior uveitis. *Ocular Immunology and Inflammation*, 26(1), 107–115. <https://doi.org/10.1080/09273948.2017.1394471>
- De Parisot, A., Kodjikian, L., Errera, M.-H., Sedira, N., Heron, E., Pérard, L., et al. (2017). Randomized controlled trial evaluating a standardized strategy for uveitis etiologic diagnosis (ULISSE). *American Journal of Ophthalmology*, 178, 176–185.
- Dick, A. D., Tundia, N., Sorg, R., Zhao, C., Chao, J., Joshi, A., et al. (2016). Risk of ocular complications in patients with noninfectious intermediate uveitis, posterior uveitis, or panuveitis. *Ophthalmology*, 123, 655–662.

- García-Aparicio, A., García de Yébenes, M. J., Oton, T., & Muñoz-Fernández, S. (2021). Prevalence and incidence of uveitis: A systematic review and meta-analysis. *Ophthalmic Epidemiology*, 28, 461–468.
- Guedry, J., & Muraine, M. (2017). Anterior uveitis. *Journal Français D'Ophthalmologie*, 41(1), e11–e21. <https://doi.org/10.1016/j.jfo.2017.11.003>
- Hwang, D. K., Hung, J. H., Chang, Y. C., et al. (2022). Step-wise diagnostic approach for patients with uveitis—Experts consensus in Taiwan. *Journal of Microbiology, Immunology and Infection*, 55, 573–580.
- Jaffe, G. J., Dick, A. D., Brezin, A. P., Nguyen, Q. D., Thorne, J. E., Kestelyn, P., et al. (2016). Adalimumab in patients with active noninfectious uveitis. *New England Journal of Medicine*, 375, 932–943.
- Krishna, U., Ajanaku, D., Denniston, A. K., & Gkika, T. (2017). Uveitis: A sight-threatening disease which can impact all systems. *Postgraduate Medical Journal*, 93, 766–773.
- Lee, C. S., Randhawa, S., Lee, A. Y., Lam, D. L., & Van Gelder, R. N. (2016). Patterns of laboratory testing utilization among uveitis specialists. *American Journal of Ophthalmology*, 170, 161–167.
- Niederer, R. L., Sharief, L., Bar, A., et al. (2017). Predictors of long-term visual outcome in intermediate uveitis. *Ophthalmology*, 124, 393–398. <https://doi.org/10.1016/j.ophtha.2016.11.013>
- Pathanapitoon, K., Dodds, E. M., Cunningham, Jr, E. T., & Rothova, A. (2017). Clinical spectrum of HLA-B27-associated ocular inflammation. *Ocular Immunology and Inflammation*, 25, 569–576.
- Reddy, A., Liu, S. H., Brady, C. J., Sieving, P. C., & Palestine, A. G. (2023). Corticosteroid implants for chronic non-infectious uveitis. *Cochrane Database of Systematic Reviews*, (1). <https://doi.org/10.1002/14651858.CD010469.pub3>
- Relvas, L. J., Caspers, L., Chee, S. P., Zierhut, M., & Willermain, F. (2018). Differential diagnosis of viral-induced anterior uveitis. *Ocular Immunology and Inflammation*, 26, 726–731.
- Sève, P., Cacoub, P., Bodaghi, B., Trad, S., Sellam, J., Bellocq, D., et al. (2017). Uveitis: Diagnostic work-up. A literature review and recommendations from an expert committee. *Autoimmunity Reviews*, 16(12), 1254–1264. <https://doi.org/10.1016/j.autrev.2017.10.010>
- Sitompul, R. (2016). Diagnosis dan penatalaksanaan uveitis dalam upaya mencegah kebutaan. *eJournal Kedokteran Indonesia*, 4(1). <https://doi.org/10.23886/ejki.4.5913.60-70>
- Steroid options for treatment of uveitis. (2024, March 12). *PentaVision*. <https://retinalphysician.com/issues/2023/june/steroid-options-for-treatment-of-uveitis/>
- Sulaiman, R. S., Kadmiel, M., & Cidlowski, J. A. (2018). Glucocorticoid receptor signaling in the eye. *Steroids*, 133, 60–66. <https://doi.org/10.1016/j.steroids.2017.11.002>
- Thorne, J. E., Suhler, E., Skup, M., Tari, S., Macaulay, D., Chao, J., et al. (2016). Prevalence of noninfectious uveitis in the United States: A claims-based analysis. *JAMA Ophthalmology*, 134, 1237–1245.
- Tsirouki, T., Dastiridou, A., Symeonidis, C., et al. (2018). A focus on the epidemiology of uveitis. *Ocular Immunology and Inflammation*, 26(1), 2–16. <https://doi.org/10.1080/09273948.2016.1196713>
- Valdes, L. M., & Sobrin, L. (2020). Uveitis therapy: The corticosteroid options. *Drugs*, 80(8), 765–773. <https://doi.org/10.1007/s40265-020-01314-y>
- Xie, J. S., Ocampo, V., & Kaplan, A. J. (2024). Anterior uveitis for the comprehensive ophthalmologist. *Canadian Journal of Ophthalmology* [Preprint]. <https://doi.org/10.1016/j.jcjo.2024.07.013>
- Zierhut, M., Pavesio, C. E., & Goldstein, D. A. (2016). Anterior uveitis. In M. Zierhut, C. Pavesio, S. Ohno, F. Oréfice, & N. A. Rao (Eds.), *Intraocular inflammation* (pp. 503–516). Springer.

