



## Through the Patient's Eyes: Unmasking Ocular Tuberculosis and the Urgent Need for Specialized Care

Amit Sachdeva<sup>1\*</sup> and Rahul Rao<sup>2</sup>

<sup>1</sup>Department of Community Medicine, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India

<sup>2</sup>Department of Hospital Administration, Indira Gandhi Medical College, Shimla, Himachal Pradesh Cum Senior Medical Superintendent, India

Author Designation: <sup>1</sup>Assistant Professor, <sup>2</sup>Associate Professor

\*Corresponding author: Amit Sachdeva (e-mail: [dramitsachdeva2410@gmail.com](mailto:dramitsachdeva2410@gmail.com)).

©2025 the Author(s). This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>)

**Abstract** This case report describes the diagnostic odyssey of a 41-year-old woman with recurrent uveitis, ultimately diagnosed with presumed ocular tuberculosis. Initial consultations at a secondary care facility failed to identify the underlying cause, leading to delays in appropriate treatment and the development of complications, including cataracts and posterior synechiae. Referral to a specialized eye institute resulted in a positive interferon-gamma release assay (IGRA) and initiation of anti-tubercular therapy. This case highlights the challenges in diagnosing and managing uveitis, the importance of access to specialized care, and the need for increased awareness among healthcare providers regarding ocular tuberculosis. The patient's perspective, obtained through a semi-structured interview, emphasizes the need for a patient-centered approach in healthcare. This report serves as a valuable resource for clinicians, researchers, and public health professionals, advocating for improved patient care and outcomes in uveitis management.

**Key Words** Ocular tuberculosis, recurrent uveitis, diagnostic delays, corticosteroid complications, patient-centered approach

### INTRODUCTION

Uveitis is a potentially sight-threatening inflammatory condition of the eye with a broad spectrum of underlying etiologies, making timely diagnosis and management particularly challenging. If left untreated or inadequately managed, recurrent uveitis can lead to severe complications, including cataract formation, posterior synechiae, glaucoma, and even permanent vision loss [1-4]. The complexity of its diagnosis is further compounded by the diverse range of systemic and infectious diseases that can manifest as ocular inflammation, necessitating a multidisciplinary approach for effective treatment [3-5].

This case report presents the diagnostic and therapeutic journey of a 41-year-old woman with recurrent uveitis, ultimately diagnosed with presumed ocular tuberculosis (OTB). Her experience highlights the significant delays in diagnosis and treatment, particularly at the primary and secondary care levels, which led to progressive ocular damage. Despite multiple consultations at various healthcare facilities, her condition remained unresolved until she was

referred to a specialized ophthalmic institute, where a positive interferon-gamma release assay (IGRA) finally pointed to an underlying tubercular etiology.

Through a detailed timeline of clinical encounters, diagnostic investigations, and treatment interventions, this report underscores the critical role of specialized care in managing complex uveitis cases. It also examines the impact of prolonged corticosteroid use on ocular health and emphasizes the need for a more systematic approach in recognizing and addressing uveitis of infectious origin. Furthermore, the patient's perspective, gathered through a semi-structured interview, provides valuable insight into the emotional and psychological burden of navigating an uncertain diagnosis and delayed treatment.

By shedding light on the intricacies of uveitis management, this report aims to stimulate discussion on optimizing healthcare pathways to minimize diagnostic delays, enhance physician awareness of ocular tuberculosis, and ultimately improve patient outcomes. It serves as an important resource for clinicians, researchers, and public

health professionals striving to refine the standard of care in uveitis management, particularly in tuberculosis-endemic regions.

### CASE DESCRIPTION

Our patient was a 39-year-old female from Shimla, Himachal Pradesh, embarked on a complex medical journey marked by diagnostic delays, persistent inflammation, and the eventual diagnosis of presumed ocular tuberculosis. Her case underscores the challenges in navigating healthcare systems and the critical need for timely access to specialized care.

#### Initial Encounters and Missed Opportunities at District Hospital

Patient's first encounter with the healthcare system occurred in March 2022 when she presented to the Eye OPD at District Hospital, with complaints of floaters in both eyes. This initial presentation, while seemingly benign, represented a crucial opportunity for early detection and intervention. However, the medical records indicate that no specific diagnosis was made, and she was prescribed moxifloxacin eye drops, typically used for bacterial conjunctivitis.

Over the following year, she revisited the same hospital on multiple occasions with persistent complaints of floaters and "TPHAE," which likely refers to an error in refraction. These repeated presentations with unresolved symptoms should have prompted a more thorough investigation, including a detailed history, assessment of visual acuity, and examination of the anterior chamber and vitreous. However, the opportunity for early diagnosis and treatment of uveitis was missed, and she was prescribed "vitreous" eye drops, which are not a standard treatment for uveitis.

#### Progression to Decreased Vision and Cataract Formation

In July 2023, her condition worsened, and she reported decreased vision, a significant escalation of her symptoms. Examination findings on slit-lamp examination revealed absence of cells and flare in the anterior chamber and non-contact tonometry revealed with normal intraocular pressure. While these findings may be seen in some cases of uveitis, the absence of overt inflammatory signs in the anterior chamber could have contributed to a misdiagnosis or delayed diagnosis.

By December 2023, she experienced a recurrent episode of uveitis with "whitish reflexes" in the left eye, possibly indicating the development of cataracts. She was prescribed Loteprednol and Moxifloxacin eye drops, which are appropriate for treating uveitis and preventing infection, respectively. However, the underlying cause of the recurrent uveitis remained unidentified.

#### Referral to tertiary care Hospital and Surgical Management

In March 2024, she was referred to a tertiary care center, where she was finally diagnosed with complicated cataracts

in both eyes and posterior synechiae in the left eye. Posterior synechiae, adhesions between the iris and the lens, are a common complication of chronic uveitis. The development of complicated cataracts further suggests a history of prolonged or recurrent inflammation.

She underwent phacoemulsification with intraocular lens (IOL) implantation in her left eye at Private Eye Centre, Chandigarh. This surgical intervention aimed to restore vision and address the cataract, but the underlying uveitis remained a concern.

#### Post-operative Course, Persistent Uveitis, and Intravitreal Injections

Following surgery, she continued to experience recurrent episodes of uveitis, highlighting the chronic and relapsing nature of this condition. She was prescribed a variety of eye drops, including Prednisolone Acetate, Tropicamide-Phenylephrine, and Myticom, to control inflammation and manage post-operative complications.

In August 2024, she underwent YAG laser capsulotomy for posterior capsule opacification in her left eye, a common complication after cataract surgery. However, the inflammation persisted, and she received an intravitreal injection of Ozurdex (dexamethasone) in December 2024 to further suppress the inflammation.

#### Extensive Investigations and Diagnostic Delay at IGMC

Throughout this period, numerous investigations were conducted at tertiary care hospital to determine the etiology of the recurrent uveitis. These included blood tests (complete blood count, renal function tests, liver function tests, blood sugar, C-reactive protein, erythrocyte sedimentation rate, HLA-B27), serological tests (antinuclear antibody, syphilis serology, HBsAg), and imaging (chest X-ray, CECT chest).

An interferon-gamma release assay (IGRA) for tuberculosis was also performed in October 2024, which initially yielded a negative result. However, given the persistent and recurrent nature of the uveitis, a repeat IGRA was conducted, which was positive. This delay in obtaining a positive IGRA result contributed to the overall delay in diagnosing the presumed ocular tuberculosis.

#### Final Diagnosis and Initiation of Anti-tubercular Treatment at Private Eye Institute

Despite extensive investigations at IGMC, the underlying cause of patient's recurrent uveitis remained elusive. It was not until she sought consultation at Private Eye hospital in Chandigarh, that a diagnosis of presumed ocular tuberculosis was made based on a positive interferon-gamma release assay (IGRA) result. Anti-tubercular treatment (ATT) was subsequently initiated at private Eye Institute in November 2024. The ATT regimen included Isoniazid, Rifampicin, Pyrazinamide, Ethambutol, and Pyridoxine"

### **The Pursuit of a Diagnosis: A Turning Point at Private Eye Institute**

Despite the extensive investigations conducted at tertiary care Hospital, Shimla, the root cause of patient's relentless uveitis remained a mystery. Frustrated and seeking answers, she turned to Private ophthalmology center in Chandigarh known for its expertise in complex ocular conditions. Here, her case was reevaluated with a fresh perspective.

### **A Breakthrough with Renewed Testing**

The ophthalmologists at private Eye Institute meticulously reviewed patient's medical history and conducted a comprehensive eye examination. While her previous IGRA test at tertiary care Hospital, Shimla had been negative, the persistent nature of her uveitis prompted the team to repeat the test. This time, the IGRA result came back positive, indicating exposure to Mycobacterium tuberculosis, the bacteria that causes tuberculosis (TB).

### **Presumed Ocular Tuberculosis: Connecting the Dots**

Although patient did not exhibit any systemic symptoms of TB, such as cough, fever, or weight loss, the positive IGRA result, coupled with her persistent uveitis, led to a diagnosis of presumed ocular tuberculosis. Ocular TB, while less common than pulmonary TB, can occur when the TB bacteria spread to the eye, often causing inflammation of the uvea.

### **Initiating Anti-tubercular Treatment**

With a diagnosis finally established, patient's treatment could be targeted effectively. In November 2024, she began anti-tubercular treatment (ATT) at private Eye Institute. The ATT regimen consisted of a combination of medications, including Isoniazid, Rifampicin, Pyrazinamide, Ethambutol, and Pyridoxine, aimed at eradicating the TB bacteria and controlling the ocular inflammation.

### **The Importance of Specialized Care and Persistence**

This case highlights the critical role of specialized ophthalmology centers in diagnosing and managing complex ocular conditions like uveitis. It also underscores the importance of persistence in seeking answers and the value of a fresh perspective. The team at Private Eye Institute, with their expertise in uveitis and access to advanced diagnostic tools, was able to connect the dots and finally provide patient with a diagnosis and targeted treatment.

This turning point in her medical journey emphasizes the need for improved access to specialized ophthalmic care, even in resource-limited settings. It also serves as a reminder of the importance of considering ocular TB as a potential cause of uveitis, particularly in endemic areas.

### **Patient Experience and Perspectives**

To gain further insight into patient's experience, a semi-structured interview was conducted. The interview explored

her perceptions of her illness, the impact on her daily life, and her experience navigating the healthcare system.

Patient described her initial symptoms as "disturbing," but she did not feel they were severe enough to warrant immediate medical attention. She expressed frustration with the lack of a clear diagnosis during her initial consultations at District Hospital. She felt that her concerns were not fully addressed, and she was left with a sense of uncertainty about her condition.

The subsequent diagnosis of complicated cataracts and the need for surgery caused her significant anxiety. However, she was determined to regain her vision and underwent the procedure with hope. The persistence of uveitis after surgery was disheartening, and she described feeling "discouraged" and "fearful" of losing her sight.

Patient expressed relief and gratitude upon finally receiving a diagnosis of presumed ocular tuberculosis at Private Eye Institute. She felt that the doctors listened to her concerns and conducted thorough investigations. She was optimistic about the anti-tubercular treatment and hopeful for a positive outcome.

Throughout her journey, patient maintained a positive attitude and did not experience any stigma associated with tuberculosis. Her family was supportive and understanding, which helped her cope with the challenges of her illness.

### **Reflections on the Patient's Experience**

Patient's experience highlights the emotional and psychological impact of living with a chronic and sight-threatening condition like uveitis. Her journey also underscores the importance of effective communication between healthcare providers and patients. A patient-centered approach, where concerns are acknowledged and addressed, can significantly improve the patient's experience and foster trust in the healthcare system.

Furthermore, Patient's case emphasizes the need for greater awareness and education about ocular tuberculosis, particularly among healthcare providers in endemic areas. Early diagnosis and prompt treatment can prevent vision loss and improve patient outcomes.

## **DISCUSSION**

This case report meticulously chronicles Patient's arduous journey through the healthcare system, revealing the intricate challenges associated with diagnosing and managing recurrent uveitis, especially in regions with limited resources and access to specialized ophthalmic care.

### **Diagnostic Delays and Missed Opportunities**

This case underscores the paramount importance of prompt and accurate diagnosis in uveitis management. The initial consultations at District Hospital, Shimla, failed to identify the underlying uveitis, leading to a significant delay in appropriate treatment. This delay may have contributed to the

development of complications such as complicated cataracts and posterior synechiae, ultimately necessitating surgical intervention.

Several factors likely contributed to the diagnostic delays in this case. The initial presentation with floaters, a relatively common and often benign symptom, may have led to a lower index of suspicion for uveitis. Additionally, the absence of overt inflammatory signs in the anterior chamber during some examinations may have further confounded the diagnostic process. Furthermore, limited access to specialized ophthalmic care and diagnostic tools at the initial healthcare facility may have hindered timely diagnosis.

### **The Crucial Role of Specialized Care**

The eventual diagnosis of presumed ocular tuberculosis at Private Eye hospital in Chandigarh, emphasizes the indispensable role of specialized centers in managing complex uveitis cases. These centers often possess greater expertise in uveitis diagnosis and management, along with access to advanced diagnostic tools and treatments, such as IGRA testing, which was crucial in identifying the underlying cause of Patient's uveitis.

### **The Double-Edged Sword of Prolonged Corticosteroid Use**

Another pivotal aspect of this case is the prolonged use of corticosteroids in managing Patient's uveitis. While corticosteroids are indispensable in controlling inflammation and preventing vision loss in uveitis, their long-term use can lead to significant ocular side effects, including cataract formation, glaucoma, and increased susceptibility to infections. In this case, it is plausible that the extended use of corticosteroids contributed to the development of complicated cataracts, necessitating surgery.

The challenge lies in balancing the benefits of corticosteroids in controlling inflammation with the potential for long-term adverse effects. This underscores the need for careful monitoring and individualized treatment strategies that minimize corticosteroid exposure while effectively managing uveitis.

### **The Importance of Patient Perspectives**

Patient's experience, as revealed through the patient interview, highlights the profound emotional and psychological impact of living with a chronic and sight-threatening condition like uveitis. Her frustration with the diagnostic delays, anxiety surrounding the surgery, and eventual relief at receiving a diagnosis and targeted treatment underscore the importance of effective communication, empathy, and a patient-centered approach in healthcare.

### **Public Health Implications and Future Directions**

This case report has broader public health implications, particularly in regions where tuberculosis is endemic. It emphasizes the need for heightened awareness and education

about ocular tuberculosis among healthcare providers, especially in primary care settings. Early diagnosis and prompt treatment can prevent vision loss and improve patient outcomes.

Furthermore, this case highlights the urgent need for improved access to specialized ophthalmic care in resource-limited settings. This could involve strengthening referral pathways, establishing specialized uveitis clinics in district hospitals, and increasing the availability of diagnostic tools such as IGRA testing.

Future research should focus on developing more effective and targeted therapies for uveitis, with the goal of minimizing corticosteroid use and preventing long-term complications. Additionally, studies exploring the prevalence and risk factors for ocular tuberculosis in different populations could inform public health interventions and improve disease surveillance.

This case serves as a poignant reminder of the multifaceted challenges associated with uveitis management. It underscores the critical importance of early diagnosis, access to specialized care, judicious use of corticosteroids, and a patient-centered approach in healthcare. By learning from such cases and investing in research and public health initiatives, we can strive to enhance the quality of care for uveitis patients and ultimately preserve their vision.

### **CONCLUSION**

In conclusion, present case encapsulates the myriad challenges inherent in uveitis management, from diagnostic delays and limited access to specialized care to the complexities of long-term corticosteroid use and the profound patient experience. Her journey, originating with missed opportunities at the primary care level and culminating in the diagnosis of presumed ocular tuberculosis at a specialized eye institute, underscores the urgent need for greater awareness among healthcare providers, improved healthcare pathways, and more targeted therapies. This case report serves as a clarion call for a multifaceted approach to uveitis management, one that prioritizes early diagnosis, patient-centric care, and collaborative efforts among clinicians, researchers, and public health professionals to improve patient outcomes and prevent vision loss.

### **Acknowledgments**

We express our gratitude to the patient for sharing her experiences and consenting to the publication of this case report. We also acknowledge the healthcare professionals involved in her diagnosis and management for their valuable contributions.

### **Conflict of Interest**

The authors declare no conflict of interest related to this case report. There were no financial, personal, or professional influences that could have affected the interpretation or presentation of the findings.

### Ethical Considerations

Informed consent was obtained from the patient for the publication of her medical case and related details. Patient confidentiality has been strictly maintained, and all identifying information has been anonymized.

### Funding

No external funding was received for this study. The research, writing, and publication of this case report were conducted independently without financial support from any organization or institution.

### REFERENCES

1. Paez-Escamilla, Manuel, *et al.* "Challenges in posterior uveitis—tips and tricks for the retina specialist." *Journal of Ophthalmic Inflammation and Infection*, vol. 13, no. 1, August 2023,. <http://dx.doi.org/10.1186/s12348-023-00342-5>.
2. Agrawal, RupeshV, *et al.* "Current approach in diagnosis and management of anterior uveitis." *Indian Journal of Ophthalmology*, vol. 58, no. 1, January-February 2010. <http://dx.doi.org/10.4103/0301-4738.58468>.
3. Mayo Clinic. *Uveitis: symptoms & causes* [Internet]. [cited 2025 Feb 2]. <https://www.mayoclinic.org/diseases-conditions/uveitis/symptoms-causes/syc-20378734>.
4. Cleveland Clinic. *Uveitis* [Internet]. 2025. <https://my.clevelandclinic.org/health/diseases/14414-uveitis>.
5. Kumar, Sunil, *et al.* "Ocular manifestations of systemic diseases: implications for comprehensive patient care." *Journal of Pharmacy and Bioallied Sciences*, vol. 16, no. 3, July 2024, pp. S2854-S2856. [http://dx.doi.org/10.4103/jpbs.jpbs\\_317\\_24](http://dx.doi.org/10.4103/jpbs.jpbs_317_24)