

# A Clinical Odyssey: A Case of Chronic Kidney Disease (CKD) with Underlying Disseminated Tuberculosis Unmasked Through Ocular Examination

ISSN : 2578-0360



**Alisha Ranga\*, Miloni Shah and Nayana Potdar**

Maharashtra University of Health Sciences, India

## Abstract

This report outlines the case of a 31/F with uncontrolled hypertension and chronic kidney disease necessitating hemodialysis. Her presentation featured abdominal pain, anemia, portal-vein-thrombosis, hepato-splenomegaly, ascites, and retroperitoneal lymph node enlargement. Remarkably, her vision, at 6/6 BCVA in both eyes, belied disseminated tuberculosis found through a fundus examination, revealing infiltrative disc edema, anemic retinopathy, and choroidal granulomas. Suspecting ocular tuberculosis, an HRCT thorax confirmed miliary tuberculosis, ultimately leading to the diagnosis of disseminated tuberculosis. This case underscores the vital role of ocular examinations in promptly identifying systemic diseases, urging early screening for enhanced therapeutic efficacy and potential life-saving interventions.

**Keywords:** Ocular-Tuberculosis; Kidney-disease; Disseminated TB; Miliary TB

**\*Corresponding author:** Alisha Ranga, Maharashtra University of Health Sciences, India

**Submission:**  January 24, 2024

**Published:**  February 29, 2024

Volume 3 - Issue 4

**How to cite this article:** Alisha Ranga\*, Miloni Shah and Nayana Potdar. A Clinical Odyssey: A Case of Chronic Kidney Disease (CKD) with Underlying Disseminated Tuberculosis Unmasked Through Ocular Examination. *Med Surg Ophthal Res.* 3(4). MSOR. 000567. 2024.  
DOI: [10.31031/MSOR.2024.03.000567](https://doi.org/10.31031/MSOR.2024.03.000567)

**Copyright@** Alisha Ranga, This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use and redistribution provided that the original author and source are credited.

## Introduction

Ocular tuberculosis, a clinical ailment initiated by Mycobacterium Tuberculosis (TB), can be contracted through diverse means and has the capacity to invade virtually any ocular structure [1]. Similar to syphilis, which can masquerade as various skin conditions, TB is often termed “the great imitator” in the context of ocular disorders. The presence of choroidal tubercles was initially described anatomically back in 1855 and subsequently observed using an ophthalmoscope in 1867 [2]. Just one year after the discovery of the TB-causing organism, TB was identified within the eye in 1883. Interestingly, an autopsy study on miliary TB in 1950 even revealed that eye examinations surpassed chest radiography in terms of diagnostic sensitivity [3]. We present a case with various systemic involvements and co-morbidities, and the diagnosis was clinched after an eye examination.

## Case

A 31-year-old woman with uncontrolled hypertension and chronic kidney disease on hemodialysis presented with abdominal pain. She had an 8gm% hemoglobin at the time of presentation and was discovered to have portal vein thrombosis with hepato- splenomegaly, moderate ascites, and enlargement of retroperitoneal lymph nodes under assessment for a diagnosis. In light of her uncontrolled hypertension, she was sent to our services for fundus screening for hypertensive retinopathy. Her BCVA was 6/6 in both eyes, and a fundus examination revealed infiltrative disc edema in both eyes, in the presence of background anemic retinopathy with choroidal granulomas and tubercles (Figure 1). We made a diagnosis of presumed ocular tuberculosis and asked for an HRCT thorax, which revealed miliary tuberculosis, mild pleural and pericardial effusion, mediastinal lymphadenopathy, and pre-existing portal vein thrombosis and ascites (Figure 2). A final diagnosis of disseminated miliary tuberculosis was made. She was started on AKT-4 along with posterior sub tenons triamcinolone acetonide injection. Within 2 weeks her disc edema had started to resolve along with the tubercles and granuloma decreasing in size (Figure 3).

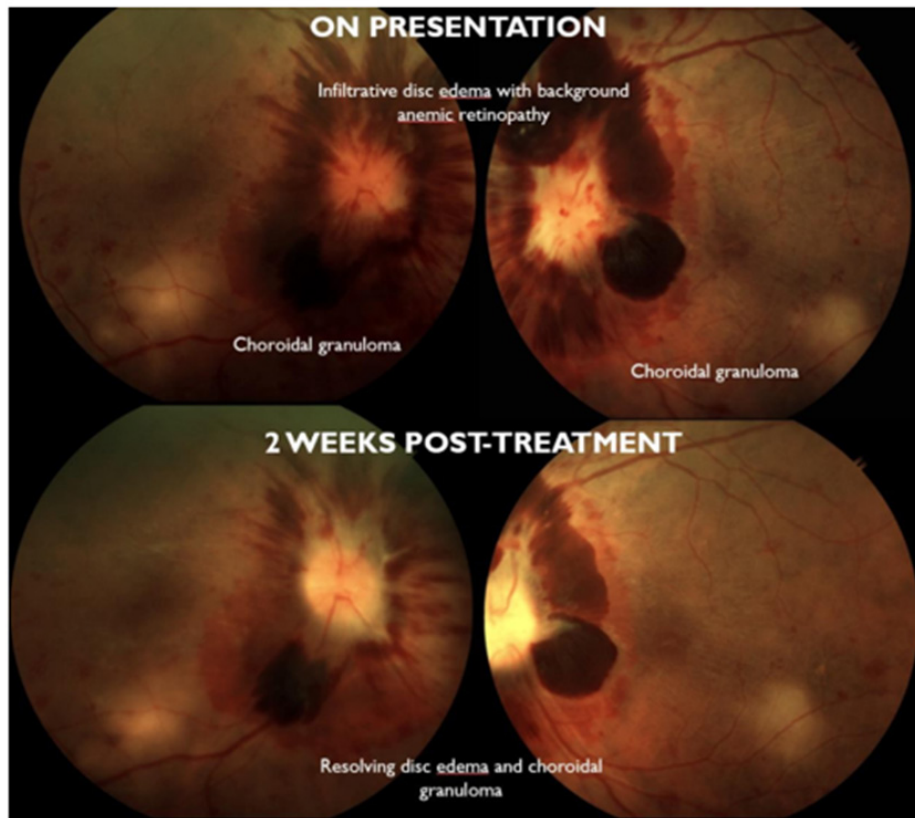


Figure 1:

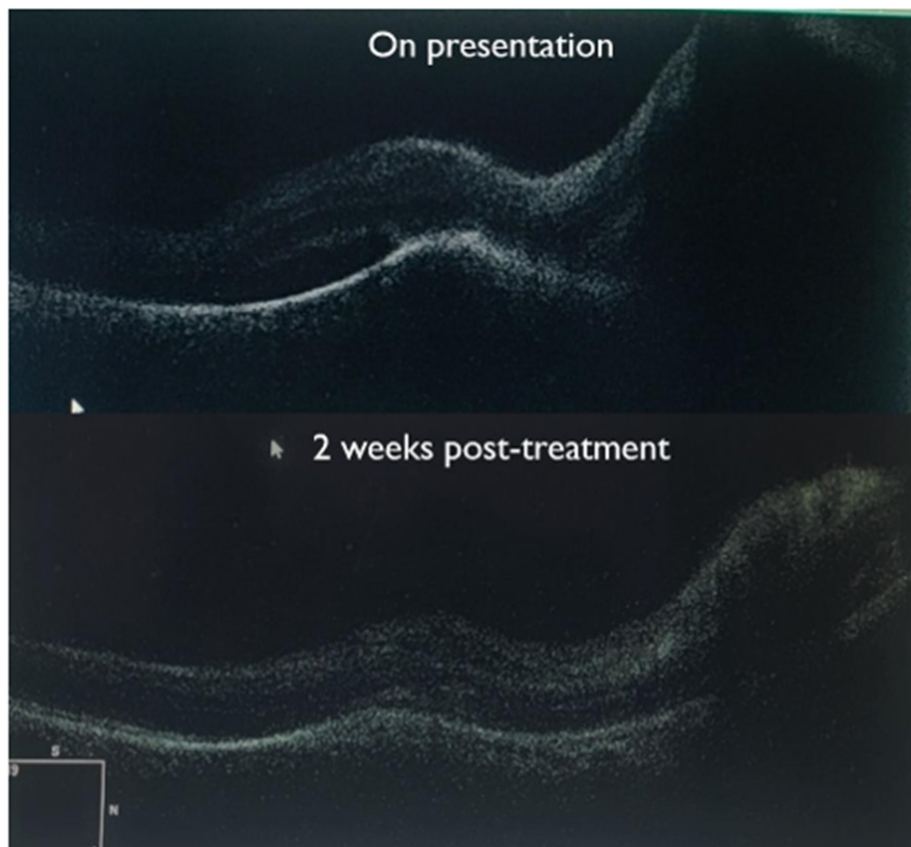
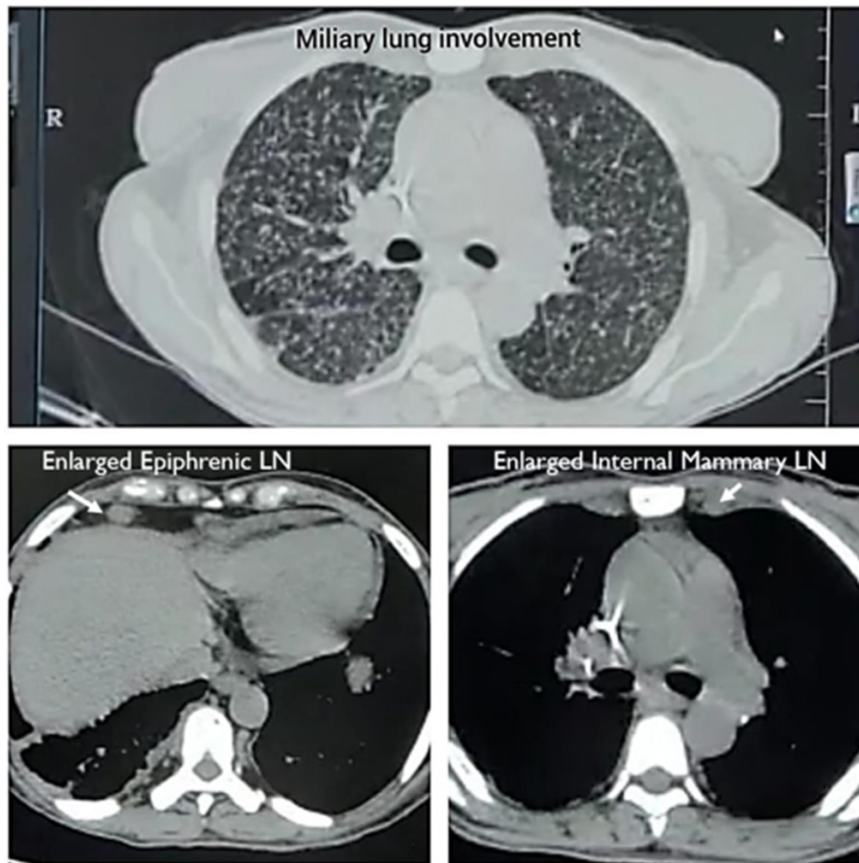


Figure 2:



**Figure 3:**

**Discussion**

The ocular manifestation of extrapulmonary TB is significant and can occasionally manifest as the initial symptom [4]. Numerous researchers have endeavored to identify predictive or associated factors for diagnosis but have encountered challenges, primarily due to the diverse clinical presentation, limited patient numbers, varying durations of follow-up, and the absence of a definitive diagnostic test. With conventional bacteriological diagnostic methods often yielding negative results in such cases, our report underscores the necessity for early clinical suspicion and advocates for a standardized diagnostic evaluation, including a comprehensive assessment of possible TB exposure and concurrent screening tests

to diagnose other forms of TB [5].

- A. Nearly one-third of the world’s population is latently infected with TB, and more than 9 million new cases are diagnosed each year, 95% in developing countries.
- B. Ocular TB may not be associated with clinical evidence of pulmonary TB; up to 60% of patients with evidence of extrapulmonary TB may not have diagnosed pulmonary TB [6].

In 1890, Terson reported two cases of tuberculous iritis in a population of 30,000 patients with ocular disease. In patients with known systemic tuberculosis, the incidence of ocular involvement is, as expected, much higher [7] (Table 1).

**Table 1:** Selected studies in which rates of ocular involvement were reported among patients with Tuberculosis.

Please note that the definition of tuberculosis and ocular tuberculosis varied between these studies.

\*We were interested in the average without data from the Donahue study because of the large number of patients in that study.

Year	Author	Percentage of TB Patients with Ocular TB	
		Number	Percentage
1964	Massaro et al	4/7	57.14
1967	Donahue	154/10,524	1.46
1996	Biswas and Badrinath	14/1005	1.39
1997	Bouza et al	18/100	18

2002	Beare et al	3/109	2.02
2004	Mehta	6/24	2.92
2005	Mehta and Gilada	4/17	23.5
Total		203/11,784=1.72%	
Total without Donahue*		49/1262=3.88%	

In a prospective investigation conducted by Bouza and colleagues in Spain, they assessed a cohort of 100 patients chosen randomly from a total population of 300 individuals with confirmed systemic tuberculosis. Within this group, 18 patients (18%) were identified as having ocular involvement. Choroidal involvement was observed in nearly all of these cases, with retinal involvement detected in six patients. Isolated instances of anterior segment, scleral, and orbital involvement were also noted [8]. In Saudi Arabia, tuberculosis was believed to be the underlying cause of uveitis in 17.8% of cases observed at a university-affiliated tertiary referral center [9]. In contrast, in patients with uveitis in Boston between 1982 and 1992, tuberculosis was responsible for this condition in 0.6% of cases [10]. These studies illustrate the considerable disparity in the documented prevalence of ocular tuberculosis within diverse populations and over different time periods. It also highlights the higher incidence of ocular manifestations in patients with disseminated tuberculosis-hence unmasking the need for screening these patients to prevent long term ocular manifestations such as uveitis and choroiditis.

## Conclusion

Miliary tuberculosis is an independent risk factor for the development of ocular tuberculosis. Systemic as well as ocular findings can be perplexing at times. This case highlights the critical importance of ocular examinations in promptly recognizing systemic illnesses, emphasizing the need for early screening to improve treatment outcomes and possibly prevent life-threatening complications.

## Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given

his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## References

1. Adam JN, A Sallam (2023) Ocular tuberculosis. StatPearls, St. Petersburg, Florida, USA.
2. Helm CJ, Holland GN (1993) Ocular tuberculosis. *Surv Ophthalmol* 38(3): 229-256.
3. Emery JL, Lorber J (1950) Radiological and pathological correlation of miliary tuberculosis of lungs in children, with special reference to choroidal tubercles. *Br Med J* 2(4681): 702-704.
4. Sudharshan S, Ganesh SK, Balu G, Mahalakshmi B, Therese LK, et al. (2012) Utility of @-TB gold test in diagnosis and management of suspected tubercular uveitis in India. *Int Ophthalmol* 32(3): 217-223.
5. B Kashyap, Nisha G, GK Das, NP Singh, IR Kaur (2018) Ophthalmic presentation of disseminated tuberculosis with relapse- immunological profile. *Indian J Clin Biochem* 33(4): 483-486.
6. Ocular Tuberculosis (TB), Asia Pacific, American Academy of Ophthalmology, San Francisco, California, USA.
7. Terson A (1890) Ocular tuberculosis: Excision of an iris tubercle followed by success. *Arch Ophthalmol* 1890: 7-14.
8. Bouza E, Merino P, Muñoz P, Sanchez-Carrillo C, Yáñez J, et al. (1997) Ocular tuberculosis. A prospective study in a general hospital. *Medicine (Baltimore)* 76(1): 53-61.
9. Al Dhahri H, Al Rubaie K, Hemachandran S, Mousa A, Gikandi PW, et al. (2014) Patterns of uveitis in a university-based tertiary referral center in Riyadh, Saudi Arabia. *Ocul Immunol Inflamm* 23(4): 311-319
10. Rodriguez A, Calonge M, Pedroza-Seres M, Akova YA, Messmer EM, et al. (1996) Referral patterns of uveitis in a tertiary eye care center. *Arch Ophthalmol* 114(5): 593-599.