Scientific Research Publishing

Journal of Tuberculosis Research, 2025, 13(3), 95-99
https://www.scirp.org/journal/jtr
ISSN Online: 2329-8448
ISSN Print: 2329-843X

Orbital Tuberculosis at Iota Chu: About a Case

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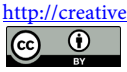
How to cite this paper: Sangaré, R.D., Guirou, N., Sissoko, M., Sidibé, F.T., Konipo, A., Ba, K., Coulibaly, B. and Touré, A.I. (2025) Orbital Tuberculosis at Iota Chu: About a Case. *Journal of Tuberculosis Research*, **13**, 95-99.
https://doi.org/10.4236/jtr.2025.133009

Received: June 18, 2025
Accepted: July 15, 2025
Published: July 18, 2025



Abstract

Introduction: Tuberculosis is an infectious, contagious disease caused by a bacterium called *Mycobacterium tuberculosis*. Pulmonary disease is the most common form. Ocular involvement of tuberculosis is rare. In fact, only 0.3% of patients with tuberculosis develop orbital involvement. The aim of our work is to describe the diagnostic and curative aspects through a case. **Observation:** We report a case of orbital tuberculosis. The clinical examination revealed unilateral exophthalmos, and the CT scan showed intra- and extra-conical orbital swelling at the expense of soft tissues with grade II exophthalmos. The biopsy was performed. Pathological examination of the surgical specimen revealed giant Langhans cells and caseous necrosis, suggesting orbital tuberculosis. Anti-tuberculosis treatment under the 2RHZE/4RH protocol was initiated by fellow pulmonologists, accompanied by clinical monitoring for 6 months. At the end of the treatment, the remission was complete. **Conclusion:** Orbital tuberculosis, although rare, was diagnosed in our case by anatomopathological means. The anti-tuberculosis treatment was effective.

Keywords

Anti-Tuberculosis, Exophthalmos, Caseous Necrosis, Orbit, Tuberculosis

1. Introduction

Tuberculosis is a contagious disease caused by the Koch bacillus. This infectious agent is transmitted through the air [1]. It is estimated that 10.6 million people developed tuberculosis worldwide in 2022, including 1.3 million deaths in 2022 [1]. According to the WHO, tuberculosis is the second leading cause of death from an infectious disease worldwide, behind COVID-19, in 2022.

Pulmonary disease is the most common form. Tuberculous ocular involvement is rare. It can occur in the context of primary tuberculosis infection or secondary lesions of systemic tuberculosis. Indeed, only 0.3% of patients with tuberculosis de-

velop orbital involvement [2] [3].

The aim of our study is to describe the diagnostic and curative aspects through a case discovered during an exophthalmos assessment. We obtained the patient's informed consent.

2. Observation

This is a 62-year-old patient, a farmer with no particular medical history. This patient consulted for unilateral exophthalmos of the right eye that had been developing for approximately 6 months. The protrusion of the eyeball appeared gradually. The patient's visual acuity was 4/10 in the right eye and 6/10 in the left eye. We observed non-axial, irreducible, non-painful exophthalmos with the eye deviating downward. Biomicroscopic examination revealed an opacified lens and a normal fundus. CT (Figure 1) concluded to intra- and extra-conical orbital swelling in the soft tissues with grade II exophthalmos (Lymphoma? Inflammatory pseudotumor).

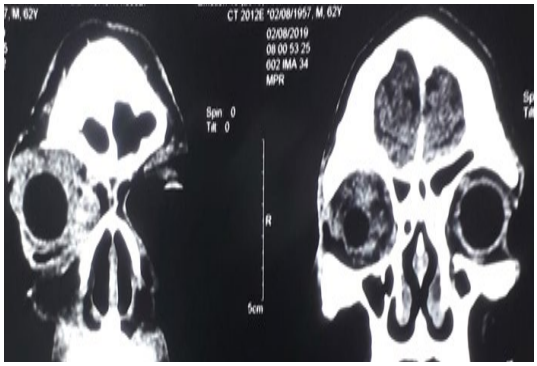


Figure 1. CT image.

We performed a biopsy via the superior transeyelid route under general anesthesia (Figure 2). The anatomopathological examination of the surgical specimen found Langhans giant cells and caseous necrosis, suggesting tuberculosis (Figure 3, Figure 4).

Figure 2. Image after biopsy before anti-tuberculosis treatment.

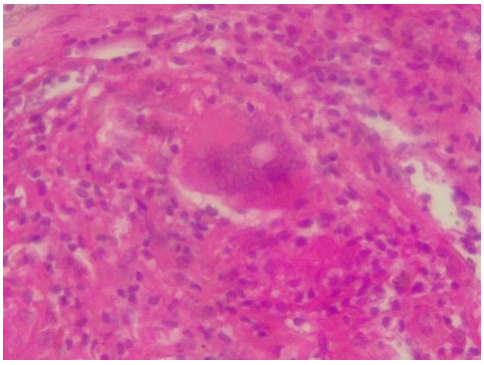


Figure 3. Tuberculous granuloma showing lymphocytes, epitheloid cells, and giant cells.

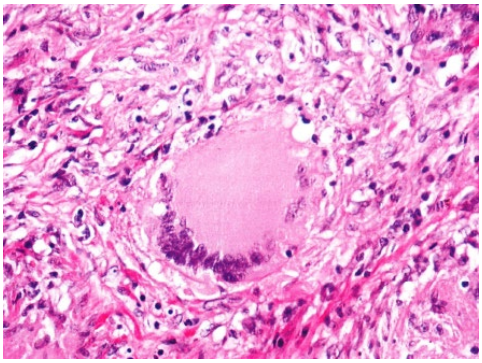


Figure 4. Tuberculous granuloma showing lymphocytes and a Langhans giant cell.

The Baar sputum (acid-fast bacillus) and the tuberculin intradermal reaction were negative, the chest X-ray was normal, the angiotensin converting enzyme dosage was 68 UECA VN: 20 - 70 UECA. This allowed us to eliminate sarcoidosis. The diagnosis of orbital tuberculosis was retained. The patient was referred to the pulmonology department of the Point G University Hospital, where he was put on a therapeutic protocol of 2RHZE/4RH (2 months of rifampicin, isoniazid, pyrazinamide and ethambutol; followed by 4 months of rifampicin and isoniazid). After 2 months of treatment, the exophthalmos had significantly regressed (**Figure 5**). During the 6th month of treatment, we achieved complete remission.

Figure 5. Image of the patient during anti-tuberculosis treatment.

3. Discussion

Tuberculosis is an infectious disease caused by the tubercle bacillus. It represents a major public health problem in Morocco and worldwide [2] [3]. In HIV-positive adults, the incidence of ocular tuberculosis is high, ranging from 50% to 90%, while orbital tuberculosis remains extremely rare [4]. All age groups can be affected.

Orbital tuberculosis occurs in the presence or absence of systemic involvement. It can affect the lacrimal gland, oculomotor muscles, orbital tissues and orbital walls. Clinical manifestations can include exophthalmos, oculomotor disorders (paralysis or limitation of motility due to mass effect), osteoperiostitis or tuberculoma of the lacrimal gland [5]. The diagnosis is based on tuberculin IDR, bacteriological study (culture and PCR). The histological diagnosis found the appearance of epitheloid and giant cell granuloma with caseous necrosis [6]. In our case, the diagnosis of tuberculosis was made in view of the histological proof of epitheloid granuloma (without macrophages) and giant cell granuloma with caseous necrosis. The value of the angiotensin-converting enzyme (which rules out granulomatous inflammation such as sarcoidosis) was normal.

The treatment recommended by many authors is 6 months of anti-biotic therapy. There is an intensive phase of 2 months (Isoniazid 5 mg/kg/day Rifampicin 10 mg/kg/day Ethambutol 20 mg/kg/day Pyrazinamide 25 mg/kg/day) and a maintenance phase of 4 months: (Isoniazid 5 mg/kg/day Rifampicin 10 mg/kg/day) [6]. This is the protocol that was chosen to treat our patient. After 6 months of treatment, remission was complete in our patient. There was no recurrence 1 year after treatment.

According to Aymen Mahjoub *et al.*, a 56-year-old female patient was consulted for right exophthalmos that had been progressing for 2 months. Examination showed diffuse edema of the right upper eyelid and mechanical ptosis. Palpation revealed a firm mass molding the superior orbital rim. Oculomotricity was normal. Anterior segment and fundus examination were normal. A tuberculin TST was positive at 20 mm, and a chest CT scan was normal. A biopsy of the lesion revealed an epitheloid and giant cell granuloma with caseous necrosis [6].

4. Conclusion

Orbital localization of tuberculosis is rare. It was diagnosed in this case during an exophthalmos assessment. Anti-tuberculosis treatment, combined with 6 months of clinical monitoring, resulted in complete remission.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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