CASE REPORT
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Multifocal serpiginous-like choroiditis revealing mediastinal lymph node tuberculosis

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ABSTRACT

Serpiginous-like choroiditis is a rare manifestation of intraocular tuberculosis. It most often occurs in the context of suspected or latent tuberculosis. The diagnostic confirmation remains a real challenge. We report a case of a young patient presented with rapid bilateral visual acuity decrease. The diagnosis of tuberculous serpiginous-like choroiditis associated with mediastinal lymph node tuberculosis was established based on anamnestic, clinical, radiographic, and histological arguments. Anti-tuberculosis drugs have been recommended in combination with corticotherapy. The evolution was marked by significant stabilization of choroidal lesions with an improvement in visual acuity. Given its great clinical polymorphism, ocular tuberculosis should be suspected in any ocular inflammation, even atypical, in order to start early and appropriate treatment and improve the visual prognosis.

KEY WORDS: tuberculosis; multifocal serpiginous-like choroiditis; uveitis; anti-tuberculosis drugs; prognosis

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INTRODUCTION

Tuberculosis is a systemic infectious disease caused by Mycobacterium Tuberculosis, which is mainly transmitted by air [1]. It is the first cause of infectious morbidity in endemic underdeveloped countries. A remarkable resurgence of this disease was observed in industrialized countries in parallel with HIV infection prevalence increase [2]. Tuberculosis mainly affects the lungs. However, ocular involvement is not uncommon [3]. There are various intraocular manifestations of tuberculosis, which include: choroiditis, anterior or intermediate uveitis, retinal vasculitis, panuveitis, and endophthalmitis [4]. Serpiginous-like choroiditis represents a rare clinical form of this disease. We report an observation of serpiginous-like choroiditis of tuberculous origin, with extraocular localization. In this paper, we analyzed the clinical, therapeutic, and prognostic characteristics of this disease.

CASE REPORT

We present a case report of a 40-year-old male, complaining of a bilateral visual acuity decrease, rapidly progressive, and more marked in the left eye. The interrogation reveals a history of tuberculosis contagion and chronic smoking. On admission, the best-corrected visual acuity was 8/10 in the right eye and 6/10 in the left eye. The ophthalmological examination found a correct anterior segment, bilaterally. The eye fundus examination (Fig. 1) found a moderate bilateral vitreous Tyndall. In the left eye, we noted the presence of multiple choroiditis foci with geographical distribution, located in the nasal region of the optic disc and extending centrifugally, but sparing the macular center. These lesions were yellowish active with fuzzy limits and with a retinal vasculitis opposite. In the right eye, we noted yellowish foci arranged around the macula with papillary hyperemia.

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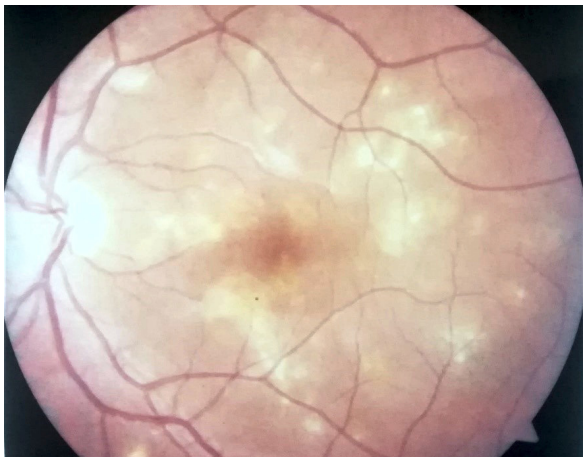

FIGURE 1. Color fundus photography of the left eye showing multiple yellowish lesions with fuzzy limits and geographical distribution, corresponding to choroiditis foci

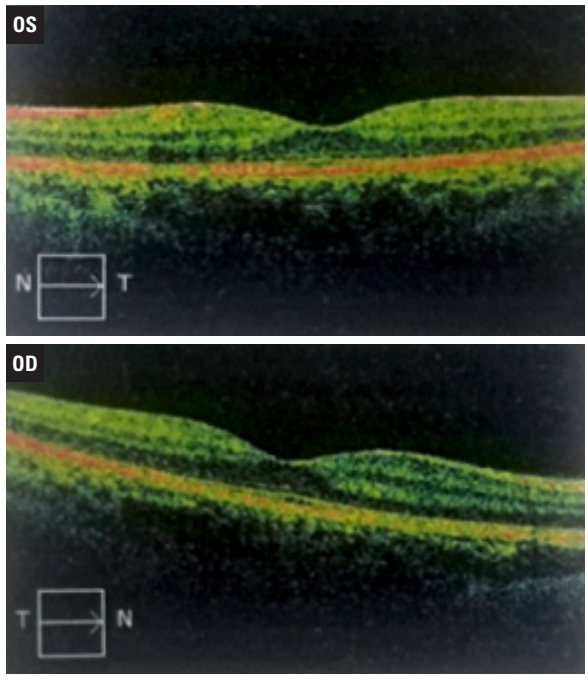

FIGURE 3. Macular OCT shows choriocapillaris hyperreflectivity compatible with choroiditis foci, very marked in the left eye, with thickening of the retinal pigment epithelium

Fluorescein angiography (Fig. 2AB) showed in both eyes an hyperfluorescent character of these foci in early times gradually increasing to become intense in late times with papillary retention in favor of papillitis. Macular OCT revealed a choroidal hyperreflectivity compatible with the choroiditis. It was very marked in the left eye, with retinal pigment epithelium thickening (Fig. 3).

The results of routine blood tests, including full blood count and C-reactive proteins, were in the normal range. The results of serologic tests excluded toxoplasmosis, syphilis, and Lyme disease. The tuberculin intradermal reaction and QuantiFERON test were positive. Chest X-ray showed a mediastinal enlargement. Thoracic CT scan (Fig. 4) revealed multiple mediastinal lymphadenopathies: the largest one contained central necrosis. CT-guided transparietal biopsy revealed a tuberculoid granuloma with caseous necrosis. The diagnosis of mediastinal lymph node tuberculosis with tuberculous choroiditis was thus established. In collaboration with the Pulmonology Department, our patient received anti-tuberculosis treatment based on two-phased chemotherapy; an initial intensive phase, combining four drugs for two months: isoniazid 5 m/kg/d,

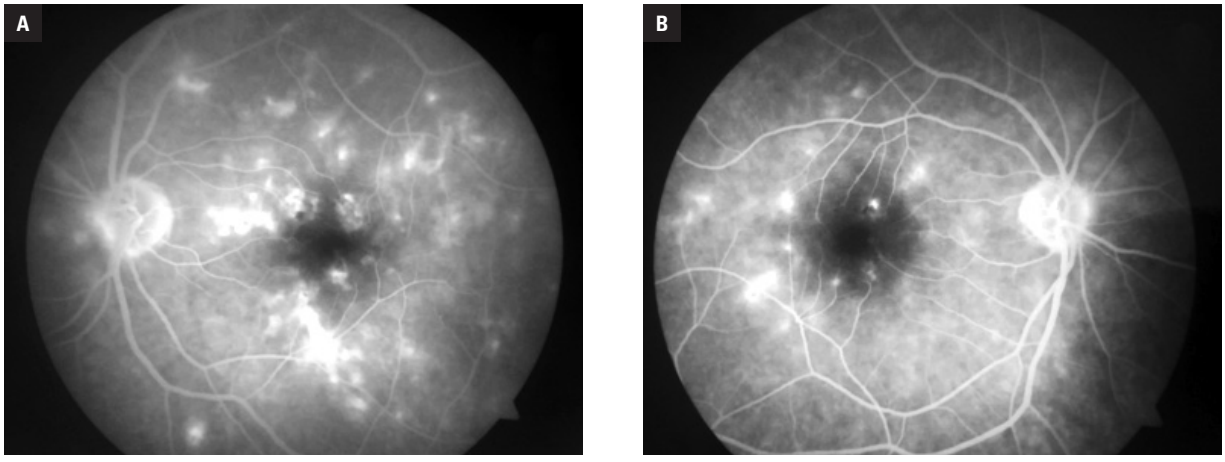

FIGURE 2. Fluorescein angiography of the left (**A**) and the right (**B**) eye, showing hyperfluorescent lesions in early times gradually increasing to become intense in late times with papillary impregnation

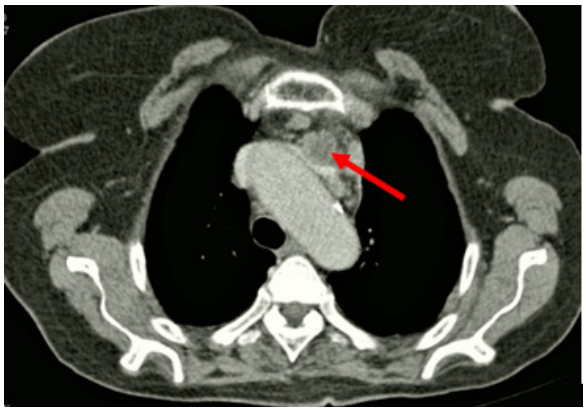

FIGURE 4. Thoracic CT scan showing multiple mediastinal lymphadenopathies, the largest one (arrow) contains central necrosis very suggestive of tuberculous origin

rifampicin 10 mg/kg/d, pyrazinamide 20 mg/kg/d, and ethambutol 15 mg/kg/d, followed by a continuation phase with two drugs: isoniazid and rifampicin at the same dosage for four months. A corticotherapy was administered 48 hours after anti-tuberculosis drugs: a methylprednisolone bolus 1 g/day for three successive days relayed by prednisone *per os* 1 mg/kg/day. The evolution was characterized by a stabilization of choroidal lesions with visual acuity improvement in both eyes reaching 9/10.

DISCUSSION

Bouchut tubercles are the most frequent intraocular manifestation of systemic tuberculosis [4]. Tuberculous uveitis can present as serpiginous-like choroiditis, also called tuberculous multifocal serpiginous choroiditis [5]. Its clinical appearance is similar to serpiginous choroiditis, a condition of undetermined idiopathic etiology. It corresponds to a rare, multifocal, chronic, and recurrent inflammatory disease. The lesions involve a retinal pigment epithelium, the choriocapillaris, and the choroid with irreversible photoreceptors damage, typically extending from the juxta papillary region and following a centrifugal path [4]. Macular forms have also been described. Both eyes are often affected asymmetrically. There is usually no inflammatory reaction of the anterior segment, but very moderate hyalitis may be present. These clinical elements are consistent with the presentation of our patient. The pathogenesis of intraocular tuberculosis remains a controversial subject [6], although many hypotheses have been discussed. In fact, the eye can be the entry route for mycobacteria (primary ocular tuberculosis), although it is very rare. In the majority of cases, the bacteria reach the eye by hematogenous dissemination (secondary ocular tuberculosis). A recent study showed a mycobacteria multiplication within the retinal pigment epithelium which would serve as its reservoir [7]. In addition, many authors consider that the intraocular inflammatory reaction secondary to tuberculosis infection is mainly due to a hypersensitivity reaction against mycobacterial antigens. Fluorescein angiography and indocyanine green angiography can be useful in evaluating the extent and activity of lesions [8]. Optical coherence tomography objectively determines whether or not macular edema is present. The association between serpiginous choroiditis and tuberculosis was reported in 1974 by Laatikainen and Erkkila [9]. In 2003, Gupta and et al. described seven cases of suspected ocular tuberculosis presenting with serpiginous choroiditis. They observed a clinical improvement under a combination of anti-tuberculosis drugs and corticotherapy [10]. Similarly, Mackensen et al. observed that 52% of patients presenting with serpiginous choroiditis had a positive QuantiFERON test result. In this study, the condition of 25% of patients improved after anti-tuberculosis treatment combined with corticotherapy [11]. The diagnosis of ocular tuberculosis is often based on the detection of latent or active systemic infection in patients from endemic regions or having a tuberculosis contagion. Chest X-ray shows mediastinal, pulmonary, and pleural lesions that can be better analyzed on thoracic CT scan.

In our case, the diagnosis was based on clinical and paraclinical arguments: the history of tuberculous contagion, positive tuberculin intradermal reaction, positive QuantiFERON test, mediastinal adenopathies on the CT scan, and finally — the biopsy confirming the histological diagnosis. The treatment of tuberculous choroiditis is based on the combination of anti-tuberculosis drugs and corticosteroids. This therapy considerably reduces recurrence risk. Patients' prognosis is favorable under treatment with stabilization or even improvement of final visual acuity, in the absence of macular involvement [12].

CONCLUSION

Serpiginous-like choroiditis is a rare manifestation of intraocular tuberculosis. It most often oc-

curs in the context of suspected or latent tuberculosis. The diagnostic confirmation remains a real challenge. Given its great clinical polymorphism, ocular tuberculosis should be considered in any ocular inflammation, even atypical, especially in countries with tuberculosis endemic, in order to start early and appropriate treatment and improve the visual prognosis.

Conflict of interest

The authors declare that they have no conflict of interest.

REFERENCES

1. Forrellad M, Klepp L, Gioffré A, et al. Virulence factors of the Mycobacterium tuberculosis complex. Virulence. 2013; 4: 3–66, doi: 10.4161/viru.22329, indexed in Pubmed: 23076359.
2. Martinson NA, Hoffmann CJ, Chaisson RE, et al. Epidemiology of tuberculosis and HIV: recent advances in understanding and responses. Proc Am Thorac Soc. 2011; 8(3): 288–293, doi: 10.1513/pats.201010-064WR, indexed in Pubmed: 21653530.
3. Shakarchi FI, Shakarchi FI, Shakarchi FI. Ocular tuberculosis: current perspectives. Clin Ophthalmol. 2015; 9: 2223–2227, doi: 10.2147/OPTH.S65254, indexed in Pubmed: 26648690.
4. Willermain F, Makhoul D, Caspers L, et al. Uvéites tuberculeuses. Les Uvéites. 2010: 121–128, doi: 10.1016/b978-2-294-71107-7.50008-1.
5. Nazari Khanamiri H, Rao NA, Nazari Khanamiri H, et al. Serpiginous choroiditis and infectious multifocal serpiginoid choroiditis. Surv Ophthalmol. 2013; 58(3): 203–232, doi: 10.1016/j.survophthal.2012.08.008, indexed in Pubmed: 23541041.
6. Lim WK, Buggage RR, Nussenblatt RB, et al. Serpiginous choroiditis. Surv Ophthalmol. 2005; 50(3): 231–244, doi: 10.1016/j.survophthal.2005.02.010, indexed in Pubmed: 15850812.
7. Rao NA, Saraswathy S, Smith RE, et al. Tuberculous uveitis: distribution of Mycobacterium tuberculosis in the retinal pigment epithelium. Arch Ophthalmol. 2006; 124(12): 1777–1779, doi: 10.1001/archopht.124.12.1777, indexed in Pubmed: 17159041.
8. Bouchenaki N, Cimino L, Auer C, et al. Assessment and classification of choroidal vasculitis in posterior uveitis using indocyanine green angiography. Klin Monbl Augenheilkd. 2002; 219(4): 243–249, doi: 10.1055/s-2002-30661, indexed in Pubmed: 12022010.
9. Laatikainen L, Erkkilä H, Erkkilä H, et al. Serpiginous choroiditis. Br J Ophthalmol. 1974; 58(9): 777–783, doi: 10.1136/bjo.58.9.777, indexed in Pubmed: 4433491.
10. Gupta V, Gupta A, Arora S, et al. Presumed tubercular serpiginouslike choroiditis: clinical presentations and management. Ophthalmology. 2003; 110(9): 1744–1749, doi: 10.1016/S0161-6420(03)00619-5, indexed in Pubmed: 13129872.
11. Mackensen F, Becker MD, Wiehler U, et al. QuantiFERON TB-Gold--a new test strengthening long-suspected tuberculous involvement in serpiginous-like choroiditis. Am J Ophthalmol. 2008; 146(5): 761–766, doi: 10.1016/j.ajo.2008.06.012, indexed in Pubmed: 18718569.
12. Gan WL, Jones NP, Gan WL, et al. Serpiginous-like choroiditis as a marker for tuberculosis in a non-endemic area. Br J Ophthalmol. 2013; 97(5): 644–647, doi: 10.1136/bjophthalmol-2012-302918, indexed in Pubmed: 23449344.