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## Fever and an abnormal chest X-ray during the COVID-19 pandemic

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## ABSTRACT

During the COVID-19 pandemic, a 56-year-old man presented at our emergency department with fever and shortness of breath; Diffuse pulmonary nodular vascular spread lesions were found. Detailed history taking showed a four-week history of fever and night sweats. The man had been under treatment for 2 years with Adalimumab, a tumor-necrosis-factor (TNF) inhibitor, for ulcerative colitis. Before start, screening by tuberculin skin test was negative. Cultures en PCR on BAL and urine were positive for mycobacterium tuberculosis also ocular findings were present. The diagnosis of military tuberculosis was made.

During the COVID-19 pandemic, a 56-year-old man presented at our emergency department with fever and shortness of breath. Based on his complaints and the presence of diffuse bronchovascular accentuation on chest X-ray, he was triaged as suspicious for COVID-19 pneumonia. As the screening was negative for COVID-19, computed tomography of the thorax was made (Fig. 1). Diffuse pulmonary nodules with a pattern of vascular spread were found. Detailed history taking showed a four-week history of fever and night sweats. Further workup showed HIV-negative status and presence of *Mycobacterium tuberculosis* complex in bronchoalveolar lavage (PCR and culture), blood and urine (culture). The man had been under treatment for 2 years with Adalimumab, a tumor-necrosis-factor (TNF) inhibitor, for ulcerative colitis. Screening for latent tuberculosis infection (LTBI) was negative. The diagnosis of military tuberculosis was based upon these findings. The patient was

started on Isoniazid, Rifampicin, Ethambutol and Pyrazinamide. Fundoscopy revealed multifocal small choroidal Bouchut's tubercles, the most frequent manifestation of posterior uveitis due to tuberculosis (Fig. 2a/b, nr 1) [1]. They are small, yellow-greyish lesions and vary from one-fourth to one-disc area in size, named by Eugène Bouchut [2]. Fluorescein Angiography (Fig. 2a, nr 2) of the choroidal lesions and late hyperfluorescence (Fig. 2b, nr3) beginning at the edge of the lesions and pooling of dye into the subretinal space, is reported.

Ocular tuberculosis has traditionally been considered uncommon or anecdotal. However, the increase in extrapulmonary manifestations of tuberculosis during the AIDS era has established the presence of ocular manifestations of tuberculosis [1]. Intraocular tuberculosis is a rare event, 1%, due to the hematogenous spread of mycobacterial organisms. They represent caseating granulomas characterized by stromal

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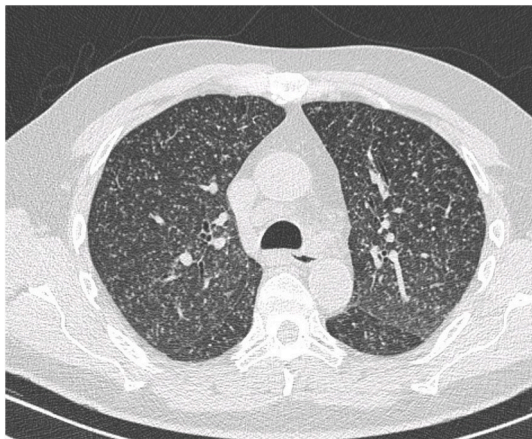


Fig. 1. Computed tomography of the chest revealed diffuse pulmonary lesions, suspect for miliary tuberculosis.

destruction, swelling of the adjacent choroid, and infiltration with

tuberculosis since ocular involvement frequently is asymptomatic [1]. Systemic antituberculosis treatment with a multidrug regimen is recommended. Systemic therapy is successful in the majority of patients. Additional topical treatment with Isoniazid and intravitreal injections are useful to reach therapeutic intraocular levels [4]. Steroids are considered when lesions are involving or threatening the macula [5].

Our case illustrates the multifocal and severe disease course of tuberculosis under anti-TNF. Moreover, during COVID-19 epidemic, not everybody with fever and abnormal chest X-ray can be tarred with the same brush.

56-year-old man with ulcerative colitis, under treatment with Adalimumab, presented with a 4 week history of fever and night sweats. CT thorax and fundoscopy showed nodules. What is the most likely diagnosis?

- a. Toxoplasmosis
- b. Lymphoma
- c. Tuberculosis
- d. Syphilis

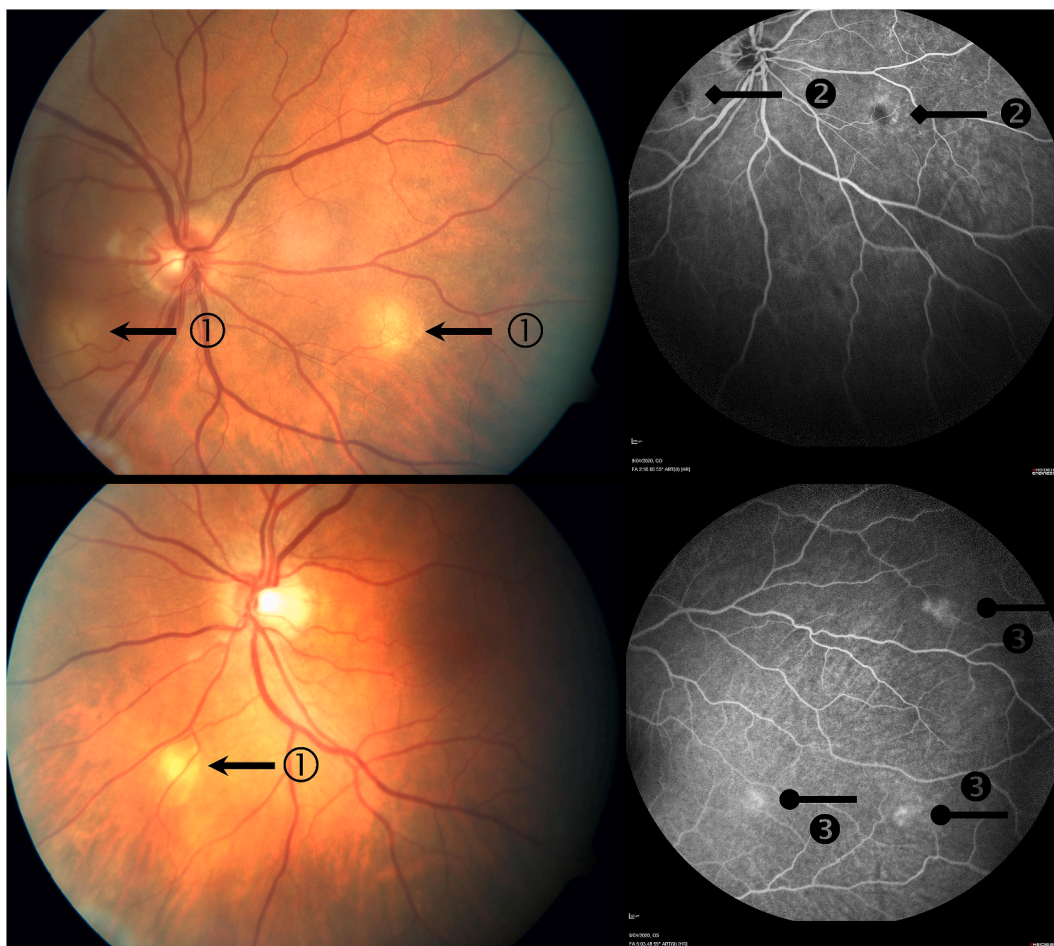


Fig. 2. a/b: Fundoscopy and fluorescein angiogram of right and left eye revealed multiple choroidal tubercles, also called Bouchut tubercles (arrows).

epithelioid and giant cells [3]. Ocular manifestations are variable, posterior uveitis being the most common presentation [4]. Ophthalmologic evaluation should be considered in every patient with miliary

**Declaration of competing interest**

None of the Authors has anything to declare (no conflict of interest).

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