

# High resolution chest computerised tomography in the diagnosis of ocular tuberculosis: Clinical profile and tuberculin skin test results

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## Background:

Tuberculosis is the leading infectious cause of morbidity and mortality worldwide. According to the WHO, one-third of the world population is infected with TB bacilli. It is not known whether ocular tuberculosis (OTB) is a direct infection or a hypersensitivity reaction to TB bacilli.

Diagnosis of tuberculous uveitis is challenging due to:

1. Protean clinical presentations, → **Diagnosis is mostly based on clinical signs and supportive investigation**
2. Lack of sensitive diagnostic tests,
3. Lack of a uniform diagnostic criteria.

**We present the role of high resolution computerised tomography (HRCT) of thorax as a supportive diagnostic modality in patients with clinical signs of OTB.**

## Patients & Methods:

This is an observational case series. Forty patients with clinical signs of OTB and evidence of systemic tuberculosis on HRCT thorax were reviewed. Their clinical profile and tuberculin skin test (TST) results were studied.

## Results:

62 eyes of 40 patients: 16 males, 24 females, 22 bilateral, 18 unilateral, mean age 39.6 years (14-67 years)

Clinical profile	No. of eyes/ no. of patients	No. of patients with negative TST/ no. of patients
Panuveitis	18/10 (29.0%)	0/10
Retinal vasculitis	15/9 (24.2%)	4/9
Intermediate uveitis	14/11 (22.6%)	5/11
Multifocal choroiditis	9/5 (14.5%)	3/5
Serpiginous-like choroiditis	3/2 (4.8%)	0/2
Choroidal granuloma	1/1 (1.6%)	1/1
Anterior scleritis	1/1 (1.6%)	0/1
Optic neuritis with multifocal choroiditis	1/1 (1.6%)	0/1

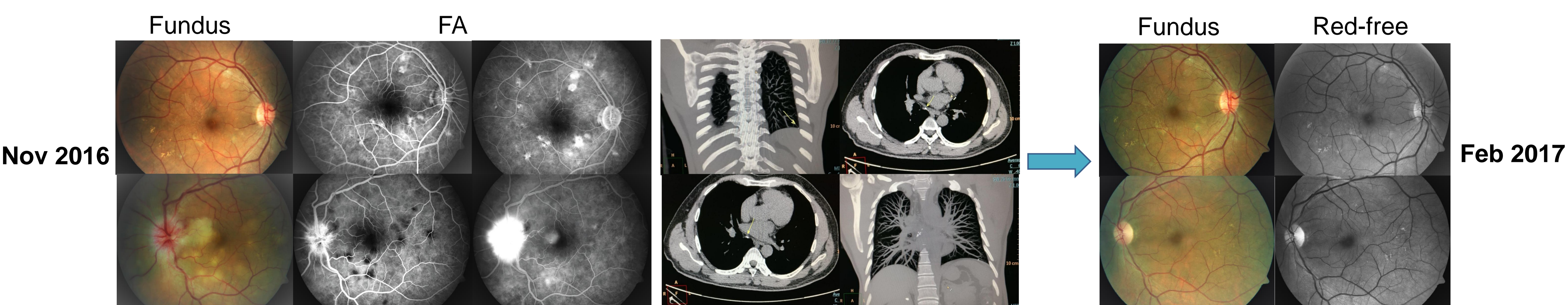
**Table 1**

All patients included in the study had systemic signs of tuberculosis on HRCT thorax

Primary HRCT finding	No. of patients
Calcified granuloma	26
Calcified mediastinal lymphadenopathy	10
fibrosis with or without atelectasis and enlarged lymph nodes	4

**Table 2**

Mantoux test (with 5 TU) was negative (<10mm induration) in 13 (32.5%) out of 40 patients (Table 1)



**Figure 1(a):**Fundus and FA pictures of a patient at presentation. RE chorioretinal scars, LE showing optic neuritis with multifocal choroiditis.

**Figure 1(b):**HRCT thorax of the same patient showing calcified granulomas in both lungs

**Figure 2:**Fundus pictures three months after initiation of anti-TB and oral steroid therapy.

## Comments:

Chest imaging techniques are the mainstay in the diagnosis of systemic tuberculosis as lungs are the primary site of infection. Although HRCT is a more sensitive test than chest x-ray, its use as a primary screening tool is precluded due to high cost and radiation hazard. However, since steroids and immunosuppressive agents used in the treatment of uveitis can reactivate systemic TB, an accurate diagnosis of tuberculous uveitis is of paramount importance. In our study, **Mantoux test was negative in 13 (32.5%) out of 40 patients who had clinical signs of ocular tuberculosis and HRCT evidence of systemic disease.** Hence, in the absence of sensitive tests, HRCT is a useful aid in the etiological diagnosis of tuberculous uveitis. The cost and risk of radiation exposure must be weighed against the potential benefit of correct treatment to the patient.

## Conclusions:

This study highlights the role of HRCT in the accurate diagnosis of ocular tuberculosis. Correct diagnosis of this treatable condition is essential for the prevention of blindness from recurrent uveitis. This is also important to obviate the risk of reactivation of systemic tuberculosis from the use of steroid only therapy in this group of patients.