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Results of Investigations for Tuberculosis in Patients with Serpiginous Like Choroiditis in Comparison to Patients with Central Serous Retinopathy and Non-Serpiginous Uveitis

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Abstract

Background: To compare results of tuberculosis investigations in cases of serpiginous like choroiditis (SC), central serous retinopathy (CSR) and non serpiginous uveitis

Methods: 40 patients each of SC (Group 1), CSR (Group 2) and other non serpiginous uveitis (Group 3) were studied. Mantoux test and chest radiography results were compared. P values for the results were calculated by using a Pearson Chi-square test and Fisher exact test. P value ≤0.05 was considered significant.

Results: 56/120 patients (53.3%) were Mantoux positive. 23/40 were Mantoux positive in Group 1, 17/40 positive in Group 2 and 16/40 positive in Group 3. Difference between the groups was not statistically significant (p=0.237). On chest radiography four in Group 1, three in Group 2 and five in Group 3 had past evidence of extraocular tuberculosis (p=0.757).

Conclusions: Mantoux positivity was similar in SC, central serous retinopathy and non serpiginous uveitis patients. In a country like India where tuberculosis is endemic, Mantoux positivity alone cannot be considered as a major criterion for making a diagnosis of presumed ocular tuberculosis.

Keywords: Sepiginous choroiditis; Multifocal serpiginoid choroiditis; Central serous retinopathy; Mantoux test; Chest x-ray

Introduction

Serpiginous choroiditis is a descriptive term for an intraocular inflammatory disease characterized by a geographic pattern of choroiditis that typically extends from the peripapillary area and affects the overlying retinal pigment epithelium (RPE), choriocapillaris, large choroidal vessels and the outer retina. This recurrent and progressive choroidal inflammation usually involves both eyes and can cause irreversible damage to the photoreceptors with permanent vision loss if the process involves the fovea [1-3]. Serpiginous like choroiditis (SC) or Multifocal serpiginoid choroiditis (MSC) is a recently coined term for cases which resemble serpiginous choroiditis however the lesions may not be confluent to the optic disc [4]. The aetiology of SC has always been a subject of speculation. Tuberculosis has been proposed as a possible aetiology of SC [4-7]. We did a study to compare the results of common investigations of tuberculosis in cases of SC, central serous retinopathy (CSR) and non-serpiginous uveitis. Literature search on Pubmed did not reveal any similar comparative study.

Methods

An approval of the study was taken from the Ethics committee of All India Institute of Medical Sciences, New Delhi, India (Ref IESC/T-54/3/2/2012). Total number of patients in our study was 120. We recruited 40 patients each of serpiginous like choroiditis (Group 1), central serous chorioretinopathy (Group 2) and other specific forms of non serpiginous uveitis (Group 3). The patients included in Group 3 were cases of non serpiginous posterior uveitis, ankylosing spondylitis, Behcets disease, sarcoidosis, seronegative arthritis, rheumatoid arthritis, toxoplasmosis, Vogt Koyangi Harada syndrome and sympathetic ophthalmia (Table 1). All patients gave a history of BCG vaccination during infancy. None of the patients was seropositive for HIV. No patient was on corticosteroids during the administration of Mantoux test.

Non serpiginous posterior uveitis	17
Ankylosing spondylitis	5
Behcets	4
Sarcoidosis	4
Seronegative arthritis	3
Rheumatoid arthritis	3
Toxoplasmosis	2
Vogt Koyangi Harada syndrome	1
Sympathetic ophthalmia	1

Total number	40

Table 1: Specific diagnosis of cases of non-serpiginous uveitis (Group 3).

Results of Mantoux test and chest x ray findings were noted in all the patients. If Mantoux test had already not been performed, it was carried out at our institute using standard recommendations. In brief, the procedure for Mantoux test was that 0.1 ml or five tuberculin units were injected intradermally and if a wheal was raised after the injection, the intradermal injection was considered appropriate. The test was read after 72 hours and the diameter of the area of induration was recorded. The test was recorded as positive if the indurated area was ≥10 mm. Test was not repeated if it had already been recorded within the past year. None of the patients had received any immunosuppressive therapy prior to testing. All 120 patients underwent chest radiography. Quantiferon gold test for tuberculosis was not done. The test was not done as its routine use has been banned both by Indian National Tuberculosis Control Programme [8] and also by WHO [9], in developing countries like India, for the diagnosis of tuberculosis.

None of the patients had current history of cough and any reason for suspecting active pulmonary tuberculosis. Hence sputum evaluation for microscopy and culture was not considered.

Analyses were performed using IBM-SPSS Statistics v 17.0.0 software. P values for the results were calculated by using a Pearson Chi-square test and Fisher exact test. P value ≤0.05 was considered significant.

Results

The mean age (in years) of presentation for each group was 30 years in Group 1, 38 years in Group 2 and 37 years in Group 3. The mean age of presentation of patients with serpiginous like choroiditis was atleast a decade earlier compared to patients in the CSR and other forms of non serpiginous uveitis entities.

Out of the cases of serpiginous like choroiditis 12 had bilateral disease while the rest 28 had unilateral disease. Serpiginous like choroiditis lesions were multifocal, non-contiguous to the optic nerve and spared the fovea in all cases.

Out of the total 120 patients, fifty six (53.3%) were Mantoux positive. Amongst the groups, Mantoux test was found positive in 23/40 patients of Group 1, 17/40 patients of Group 2 and 16/40 patients of Group 3 (Figure 1). The difference was not found to be statistically significant (p=0.237).

No patient in any of the groups was found to have active tuberculosis on chest X-ray. Four patients of Group1, three of Group 2 and five of Group 3 had past history of extraocular tuberculosis with lesions on chest X-ray which could be compatible with past healed pulmonary tuberculosis (Figure 1). This difference between the three groups was also not statistically significant (p=0.757).

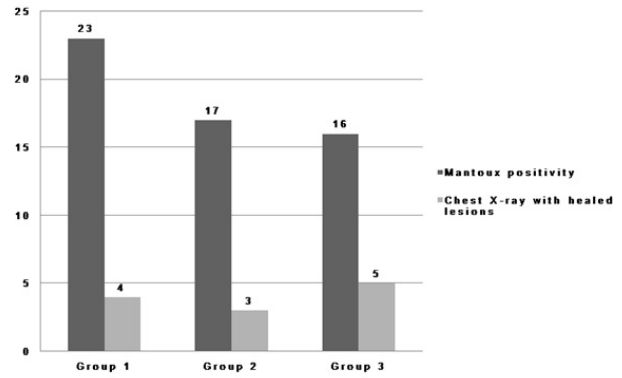

Figure 1: Graph showing comparison of number of Mantoux positive cases and cases which had healed lesions on a chest X-ray in the three groups.

Discussion

The mean age of patients of serpiginous like choroiditis in our study (29.5 years) is comparable to other studies. Biswas et al. [1] in a study of 107 eye of serpiginous choroiditis found the mean age to be 30.3 years. We found around 30% cases of serpiginous like choroiditis cases to be bilateral whereas other authors like Bansal et al. [4] have found around 62.9% cases to be bilateral.

Most studies in literature which have made a diagnosis of presumed ocular tuberculosis in cases of serpiginous like choroiditis, have used positive Mantoux test as a major criterion. These studies have also recommended starting anti-tubercular therapy in such patients [7,10-15]. The strength of evidence for using such a criteria has however never been addressed by any form of comparative study.

We thus compared the results of Mantoux testing in three groups of patients namely serpiginous like choroiditis, central serous retinopathy and non serpiginous uveitis. The rationale of taking cases of central serous retinopathy is that it is a non-infectious non inflammatory pathology of the posterior segment of the eye. Thus the cases of CSR would act as one control group. Cases of non serpiginous uveitis would act as another control group.

In our study 57.7% of the patients in Group 1, i.e., cases with serpiginous like choroiditis were positive for Mantoux test and 53.3% of the total 120 patients were positive for Mantoux test. There was also no statistically significant difference in the percentage positivity of Mantoux test across our three study groups. This implies that the Mantoux positivity that we observed in cases of serpiginous like choroiditis may be due to the general prevailing Mantoux positivity in our country as it is seen to be similar across all three groups. Thus Mantoux positivity alone is not sufficient evidence to make a presumed diagnosis of tuberculosis in a country where tuberculosis is endemic and overall Mantoux positivity rate is high. A similar high Mantoux positivity rate of 66% in controls has been documented by Ravi Shankar et al. [16]. in a study from a premiere institute of India, where they compared tuberculin positivity in normal controls and end stage renal disease patients. The authors of this study also thus question the utility of the Mantoux test for prediction of post-transplant tuberculosis. Yaacob and Ahmed after reviewing Mantoux test results

of 468 patients in a population endemic for tuberculosis found that 42% of patients with positive reaction did not have active tuberculosis. They concluded that Mantoux reaction is sensitive but not specific for the diagnosis of tuberculosis [17] Low specificity and sensitivity of Mantoux test has been reported from other reviews as well [18].

We also did not find signs of active tuberculosis on chest X-ray in any of our patients. Hence we conclude that tuberculin sensitivity test alone has a very low predictive value in ascertaining the diagnosis of presumed ocular tuberculosis in cases of serpiginous like choroiditis in a country like India where tuberculosis is endemic.

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