

Case report

ASYMPTOMATIC UVEITIS AS PRIMARY MANIFESTATION OF SARCOIDOSIS

Key words: asymptomatic, indocyanine green angiography, initial manifestation, ocular involvement, sarcoidosis

6 **Abstract**

7 **Aim:** To emphasize that ocular involvement in sarcoidosis may be the initial manifestation
8 of the disease and can be completely asymptomatic.

9 **Presentation of case:** A 36 year-old female was referred to uvea service with detection of
10 keratic precipitates and anterior chamber cells during routine eye examination. She did
11 not show any symptoms of uveitis. A slit lamp examination revealed bilateral medium-
12 sized, round, centrally located granulomatous keratic precipitates on corneal endothelium
13 and +1 cell reaction in anterior chamber. Dilated fundus examination showed bilateral
14 vitreous cells and small vitreous opacities in the right eye. Serum levels of angiotensin-
15 converting enzyme were increased. Her chest X-ray study was significant for bilateral hilar
16 adenopathy, and transbronchial needle aspiration biopsy confirmed the diagnosis of
17 sarcoidosis. Patient responded well to systemic steroid therapy with complete
18 disappearance of the signs.

19 **Discussion:** Ocular involvement in sarcoidosis may occur as the disease process, it also
20 can be the first clinical manifestation of the disease. Although the incidence of pulmonary
21 involvement is nearly one and half times higher than ocular involvement, the most
22 frequent initial symptom of sarcoidosis is eyesight disorder. The reason for that is late
23 emergence of symptoms caused by lung involvement such so symptoms related to ocular
24 involvement generates the major complaints at the first application.

25 **Conclusion:** Early diagnosis of sarcoidosis is important for avoiding ocular complications
26 as well as prevention of other system involvements. Ophthalmologists have a critical role
27 in the diagnosis and follow-up of the disorder because of increasing incidence of the
28 ocular involvement.

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31 Introduction:

32 Sarcoidosis is a systemic disease with unknown etiology and characterized by non-
33 caseous granulomas [1]. It mainly affects individuals between the ages of 20-50 and
34 slightly more common in women [2]. The disease process is caused by accumulation of T
35 lymphocytes and mononuclear macrophages forming epithelioid granulomas in target
36 tissues [1]. Most common site of involvement is lung and includes 90 % of the cases [2].
37 Ocular involvement was reported to be seen in 30 - 60 % of the patients [3]. Sarcoidosis
38 may also affect lymph nodes, skin, joints, central nervous system and heart [3].

39 Ocular involvement usually includes anterior or posterior uveitis, also can include lacrimal
40 gland, conjunctiva and optic nerve [4]. The incidence of the ocular involvement is
41 increasing according to recent studies [5 6] and early detection of ocular findings is
42 gaining importance to prevent disease progression. The aim of this report is to emphasize
43 that ocular involvement in sarcoidosis may be initial manifestation of the disease and can
44 be asymptomatic.

45 Presentation of case:

46 A 36-year-old female was referred to our uvea service due to detection of keratic
47 precipitates and anterior chamber cells during routine eye examination. She did not show
48 any symptoms of uveitis. Best corrected visual acuity in both eyes was 20/20. A slit lamp
49 examination revealed bilateral medium-sized, round, centrally located granulomatous
50 keratic precipitates on corneal endothelium (Figure 1) and +1 cell reaction in anterior
51 chamber. Dilated fundus examination showed bilateral vitreous cells and vitreous
52 opacities below the right eye. In the fluorescein angiography, there was fluorescein
53 leakage from peripheral vessels in the right eye (Figure 2).

Figure 1: Bilateral medium-sized, round, centrally located granulomatous keratic precipitates. R, right eye; L, left eye

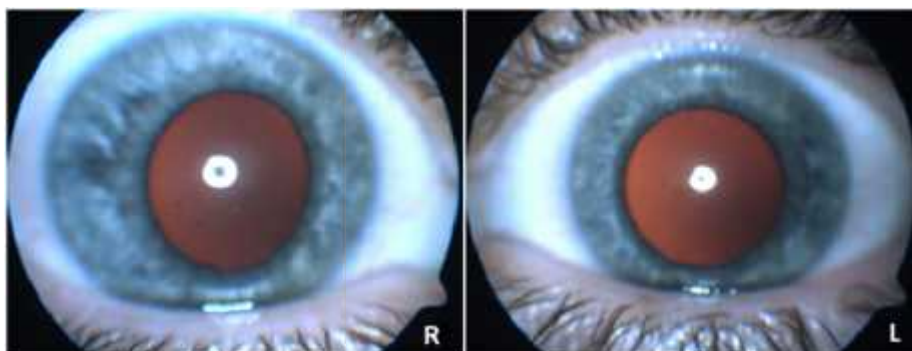


Figure 2: Fluorescein leakage from peripheral vessels of the right eye on early phase of fluorescein angiography



Indocyanine green angiography showed infrequent hypofluorescent small round spots in the right posterior pole (Figure 3). The results of laboratory examinations for syphilis and tuberculosis were negative, including venereal disease research laboratory (VDRL) test, rapid plasma regain (RPR) test and Quantiferon test. Serum level of angiotensin-converting enzyme (ACE) was raised to 67 U/L. Serum calcium level was normal. A posteroanterior chest x-ray showed bilateral hilar lymphadenopathy. With the pre-diagnosis of asymptomatic uveitis associated with sarcoidosis, pulmonary disease consultation was requested. Pulmonary disease department performed endobronchial

ultrasound-guided transbronchial needle aspiration biopsy and diagnosis of sarcoidosis was confirmed by detection of non-caseous granulomatous lymphadenitis. Patient was completely asymptomatic in terms of pulmonary involvement and pulmonary function tests were totally normal. Therefore treatment was not needed for pulmonary disease. 30 mg prednisolone (Deltacortril 5 mg tablets[®]) treatment was initiated due to ocular involvement and tapered 5 mg per week. After six weeks, anterior chamber inflammation, keratic precipitates and vitreous opacities were completely disappeared. Indocyanine green angiography was repeated and it showed initially hypofluorescent small round spots turned to isofluorescent spots three months later (Figure 4).

Figure 3: Hypofluorescent small round spots on the right posterior pole on indocyanine green angiography

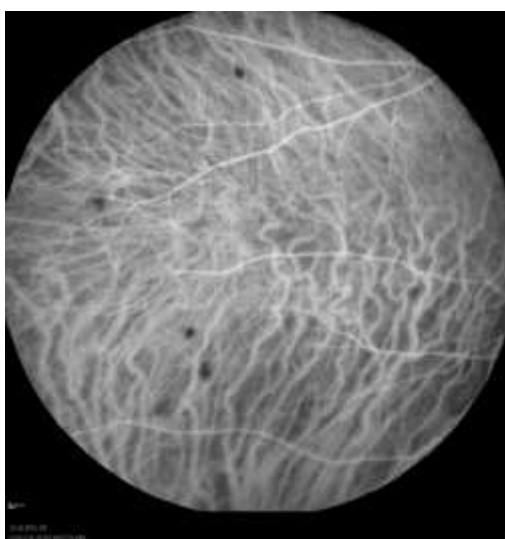
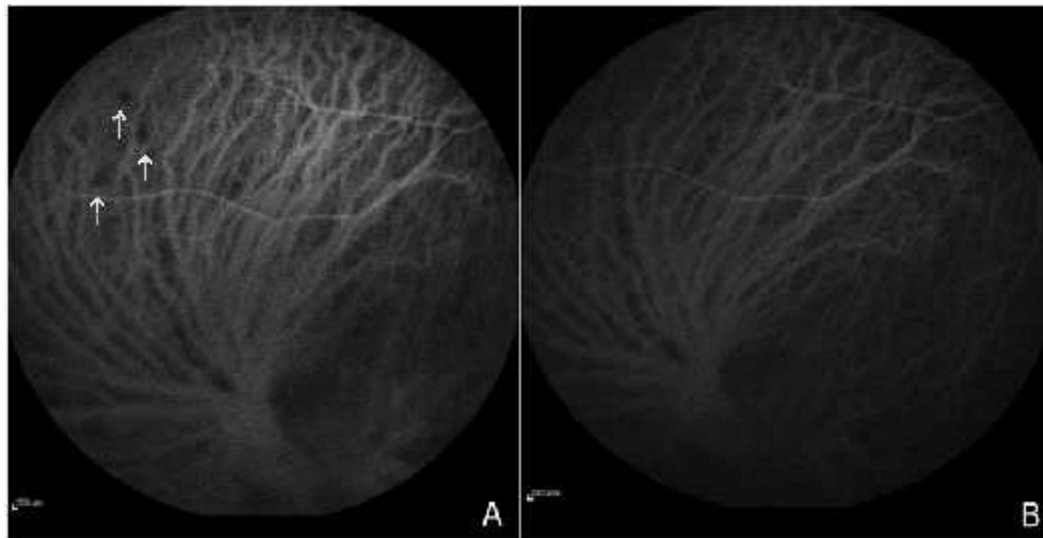


Figure 4: Hypofluorescent small spots (arrows) on the inferior mid-periphery of right eye on indocyanine green angiography **(A)**, three months later hypofluorescent spots became isofluorescent **(B)**



Discussion:

Ocular involvement in sarcoidosis may occur as the disease process, it also can be the first clinical manifestation of the disease. Hunter *et al.* reported that the first signs of sarcoidosis was ocular granulomatous lesions in % 2 of the patients [7]. However, an epidemiological study in Japan showed that the most frequent symptom was eyesight disorder (28.8 %) [6]. The same study also reported that incidence of pulmonary and ocular involvements were 86.0 % and 54.8 %, respectively, and eye involvement was the most common extrapulmonary manifestation of sarcoidosis [8]. Although the incidence of pulmonary involvement is nearly one and half times higher than ocular involvement, the most frequent initial symptom of sarcoidosis is eyesight disorder. The reason for this situation is late emergence of symptoms caused by lung involvement such as dyspnea, so symptoms related to ocular involvement generates the major complaints at the first application. Heiligenhaus *et al.*, studied 1800 sarcoidosis patients and indicated that ocular disease was commonly the first manifestation of sarcoidosis (21.2%) [5]. Heiligenhaus *et al.* also reported that the most common form of eye involvement was anterior uveitis with a rate of 76.4%, followed by intermediate uveitis , 17.3% [5]. In our case, chronic granulomatous uveitis was the first manifestation of sarcoidosis proved by biopsy later. We would like to emphasise the importance of our case as being completely asymptomatic until it was incidentally detected.

The present case did not show abnormality on dilated fundus examination and fluorescein angiography showed dye leakage from peripheral vessels which was nonspecific for differential diagnosis. However, indocyanine green angiography revealed infrequent hypofluorescent small round spots in the right posterior pole and

midperiphery resembling the type 1 hypofluorescent lesions on early phase that Wolfensberger and Herbort had defined [9]. These spots were invisible on dilated fundus examination and fluorescein angiography. After six weeks, these lesions became isofluorescent as Wolfensberger and Herbort had reported in the late phase of sarcoidosis [9]. Therefore, indocyanine green angiography have a critical role for diagnosis and follow-up especially when the posterior segment involvement could not be detected on routine ophthalmoscopy and fluorescein angiography.

Conclusion:

In conclusion, ocular involvement in sarcoidosis may occur as the first clinical manifestation. Early diagnosis of the disease is important for avoiding ocular complications as well as prevention of other system involvements. For this reason, ophthalmologists have a critical role in the diagnosis and follow-up of the sarcoidosis.

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153 **Figure Legends:**

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