

Utility of fundus auto fluorescence imaging in multiple evanescent white dot syndrome with blind spot enlargement

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Abstract: We present a case of multiple evanescent white dot syndromes (MEWDS) in a 42-year-old man. The enlarged blind spot was accompanied by no definite abnormal funduscopic findings. However, multiple hyper-auto fluorescent spots in the peripapillary region were clearly detected examined by fundus auto fluorescence (FAF) imaging. Two months later, the enlarged blind spot and multiple hyper-auto fluorescent spots were returned to normal aspect. FAF in MEWDS is an useful noninvasive diagnostic examination to identify the disease.

Keywords: multiple evanescent white dot syndrome, blind spot enlargement, fundus auto fluorescence imaging

INTRODUCTION

Multiple evanescent white dot syndrome (MEWDS) is an idiopathic intraocular inflammatory disorder characterized by transient small white dot fundus lesions first reported in 1984 [1]. On ophthalmoscopy, retina presents with multiple small, ill-defined white-dots located at the level of the outer retina or retinal pigment epithelium (RPE) [1, 2]. Angiography is useful for diagnosis and for the evaluation of the choroidal extension of the disease [1, 2]. Recently, fundus auto fluorescence (FAF) imaging

may help the interpretation of angiographic patterns allowing the understanding of the pathophysiology of MEWDS [3-7]. Herein, we report the FAF imaging in MEWDS with blind spot enlargement.

CASE REPORT

A 42-year-old Japanese man was referred to our clinic because of a 1-week history of a visual field abnormality in his right eye. He showed blind spot enlargement in the right eye examined by Humphrey Field Analyzer (Figure 1A and B).

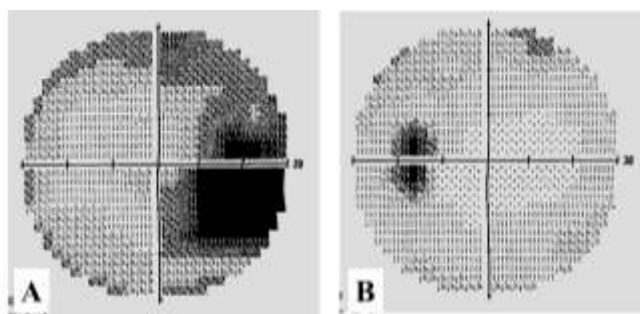


Fig. 1 Visual fields of the (A) right and (B) left eyes

Note blind spot enlargement in the right eye (A), while no specific abnormalities were detected in the left eye (B).

Best corrected visual acuity (BCVA) was 0.7 and 1.2 in his right and left eyes, respectively.

Intraocular pressure was 10 mmHg in each eye. No inflammatory cells were observed in the anterior segment or vitreous of either eye. Fundus examination revealed no definite abnormal findings except myopic change. (Figure 2A-D).

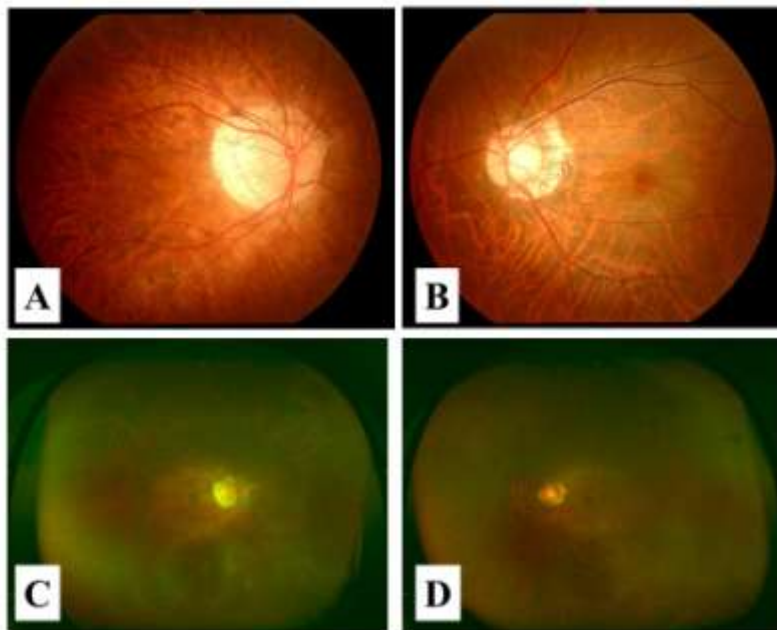


Fig. 2: Fundus photographs of the (A, C) right and (B, D) left eyes.

Note no specific abnormalities in both eyes.

On FAF (Heidelberg Retina Angiograph 2, Heidelberg Engineering, Heidelberg, Germany), clearly defined

multiple hyper-auto fluorescent spots in the peripapillary region were detected in the right eye (Figure 3A), but there were no specific abnormal findings in the left eye.

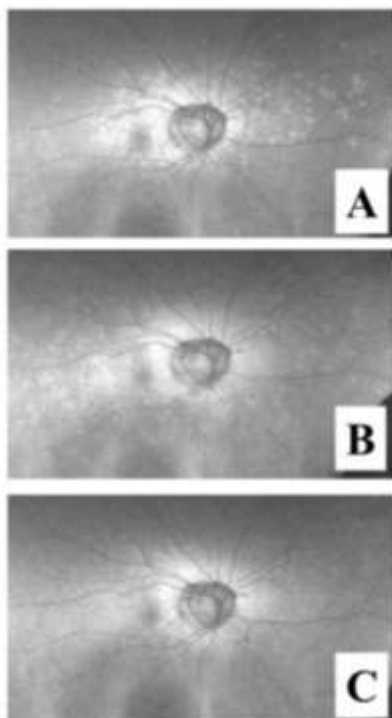


Fig. 3: FAF imaging of the right eye during 2 months

Note hyper-auto fluorescent spots in the peripapillary region gradually improved.

A: initial visit; B: 1 months later; C: 2 months later

The patient was followed without any treatment. One month after the initial visit, BCVA improved to 0.8 in the right eye. However, his visual field complaints had been continued. On FAF, multiple

hyper-auto fluorescent spots were slightly reduced (Figure 3B). After 2 months, BCVA improved to 1.2 in the right eye, and multiple hyper-auto fluorescent spots

were disappeared (Figure 3C). He had no visual field complaints and had an objective improvement in the size of his blind spot (Figure 4).

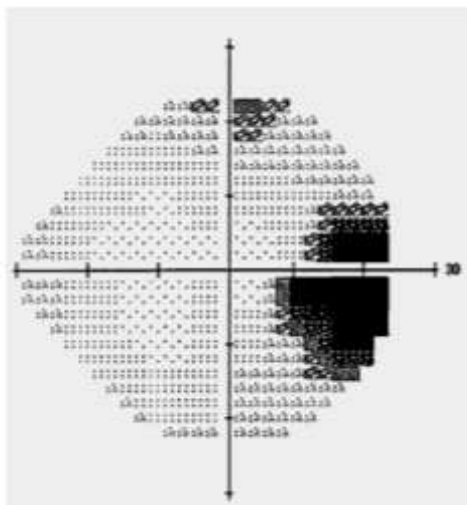


Fig. 4 Visual fields of the right eye

Note enlarged blind spot was returned to normal size. Fluorescein angiography and indocyanine green angiography were not available in this case.

DISCUSSION

In this case, we initially suspected the disease as acute idiopathic blind spot enlargement (AIBSE) [8] on the basis of the ophthalmoscopic findings and visual field testing. However, the numerous hyper-autofluorescent lesions were detected on FAF. Therefore, we diagnosed MEWDS with blind spot enlargement. In 2008, Spaide *et al.*; [9] proposed that MEWDS was reported to belong to a spectrum of conditions that include acute zonal occult outer retinopathy (AZOOR), acute macular neuro retinopathy, AIBSE, presumed ocular histoplasmosis, punctuate inner choroidopathy, and multifocal thyroiditis and panuveitis, collectively called the AZOOR complex.

FAF is becoming a more popular technique to image inflammatory-related retinal abnormalities in inflammatory chorioretinal disease. To our knowledge, few reports have investigated the utility of FAF in patients with MEWDS [3-7]. In 2009, Furino *et al.*; [3] described FAF abnormalities in 3 patients with MEWDS. In their series, the hyper auto fluorescent lesions observed in the acute phase disappeared with complete restoration of normal FAF pattern within 2 months from presentation. Dell’Omo *et al.*; [4] described the natural evolution of FAF findings in eyes with MEWDS. According to their report, in the acute phase, FAF showed 1) hypo auto fluorescent areas mostly concentrated around the optic disc and posterior pole; and 2) areas of increased auto fluorescence

usually found in correspondence to the white dots seen ophthalmoscopically. During the follow-up period, some of the hypo auto fluorescent areas faded away, others persisted; the areas originally showing increased auto fluorescence variably tended to: 1) become smaller and more demarcated; 2) retract centripetally becoming small hyper auto fluorescent areas surrounded by an hypoa autofluorescent halo; 3) turn into areas of decreased auto fluorescence; or 4) disappear without becoming hypo fluorescent. In this present case, multiple hyper-auto fluorescent spots were gradually returned to normal aspect.

Although our findings are based on a single MEWDS case, FAF is an useful noninvasive examination to confirm the diagnosis of MEWDS. Even in the absence of white dots on funduscopy examination or color photographs, FAF showed characteristic hyper-auto fluorescent lesions in this present case.

Disclosure

The authors have no conflicts of interest to disclose.

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