# KNOW YOUR MEWDS

Patients with multiple evanescent white dot syndrome may not present with obvious signs and symptoms, as this case report demonstrates.

BY LUCAS SCHMIDT, OD

A 22-year-old woman presented with complaints of a large black floater and flashes of light in her right eye. She reported that the condition had been constant for 1 day and denied any pain. She was not taking any medications and had no known medical conditions.

## CLINICAL EXAMINATION

The patient's distance visual acuity through her myopic spectacle prescription was 20/20 OU, and entrance testing was all normal. Slit-lamp examination was unremarkable. Her IOPs were 14 mm Hg OU, measured with Goldmann applanation tonometry, and her dilated fundus examination was also unremarkable. Her cup-to-disc ratio was 0.20 OU and her optic nerves were flat and sharp with good color.

## THE DIAGNOSIS

This patient was diagnosed with ocular migraines and was educated on the condition. No follow-up was scheduled, and she was told to return in 1 year for a comprehensive exam, or earlier as needed.

## THE FOLLOW-UP

One week later the patient returned with worsening symptoms. She reported having more floaters and sparkles scattered throughout her vision, with a bright strobe of light in the middle of the line of sight of her right eye. She again denied experiencing any pain or discomfort.

Her BCVA was 20/30-2 OD and 20/20 OS, and she now reported having a floater in her right eye that was

## AT A GLANCE

- MEWDS is a white dot syndrome that involves inflammation of the choroid and is most common in young myopic women.
- The etiology of MEWDS is unknown but is thought to be caused by an autoimmune mechanism triggered by infectious particles. MEWDS leads to inflammatory nonperfusion of the choriocapillaris.
- MEWDS rarely presents in both eyes and has been described as an acute, unilateral condition that resolves rapidly without treatment.

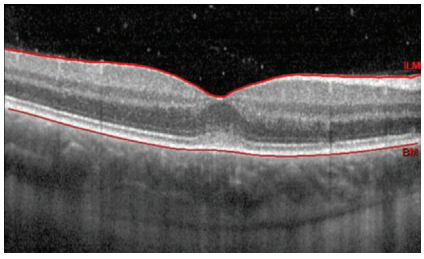


Figure 1. OCT imaging revealed vitreous cell and subfoveal ellipsoid zone disruption in the patient's right eye.

blocking her vision. Entrance testing was normal and anterior slit-lamp examination was unremarkable. IOPs via Goldmann applanation tonometry were 14 mm Hg OU. A dilated fundus examination of the patient's right eye revealed 1+ vitreous cell (Figure 1). Her vessels appeared normal. The patient's optic nerve head had a granular appearance with trace nasal disc edema, and scattered focal hypopigmented lesions were visible in the periphery (Figure 2). All findings in the left eye were normal. OCT imaging illustrated the lesions as focal disruptions to the retinal pigment epithelium and ellipsoid zone, with no evidence of macular edema or subretinal fluid (Figure 3).

## REVISING THE DIAGNOSIS

Based on her presentation and demographic, this patient was tentatively diagnosed with *multiple evanescent white dot syndrome* (MEWDS) of the right eye. We explained to her that further testing may be needed to determine whether treatment would be necessary, and we made a nonurgent referral to a retina specialist for further evaluation.

On additional evaluation, fundus autofluorescence showed several spots of hypoautofluorescence in the patient's right eye. OCT angiography revealed multiple filling voids of nonperfusion in the choriocapillaris and choroid layer. The retina specialist supported the diagnosis of presumed MEWDS. Observation without treatment was recommended, and a follow-up appointment was scheduled for 2 months.

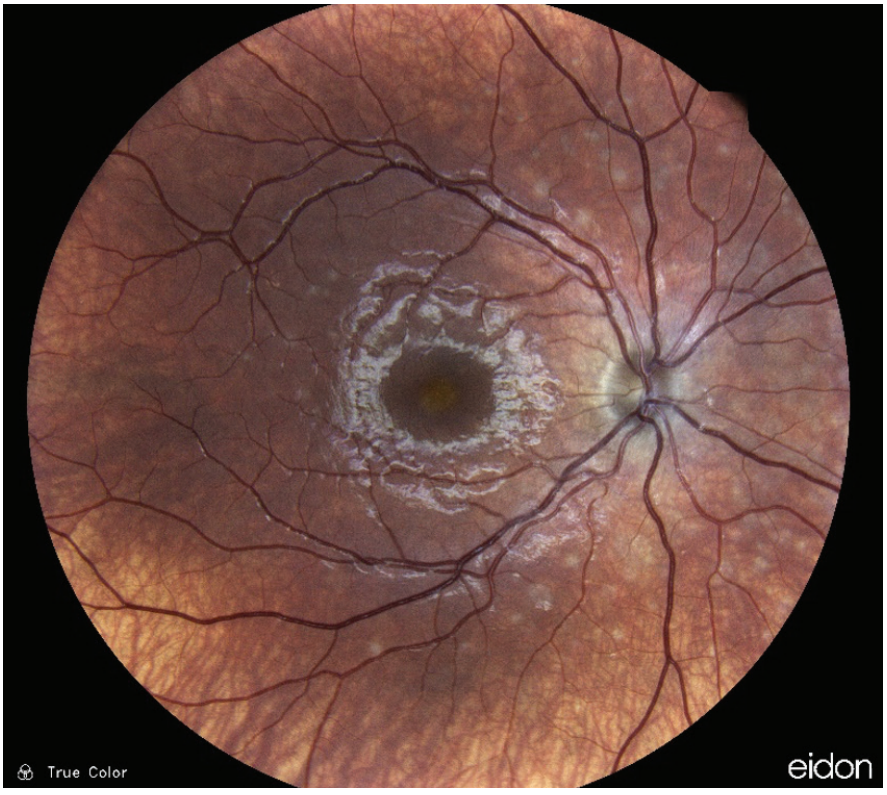


Figure 2. Multifocal hypopigmented lesions and trace disc edema visualized with the Eidon Ultra-Widefield Module (Centervue).

## FOLLOW-UP

At the 2-month follow-up visit, the patient's symptoms had resolved. Her distance VA was 20/20 OU. Anterior segment biomicroscopy and IOP were normal in both eyes. Posteriorly, the left eye remained unchanged. The disc edema and vitreous cells in the right eye were resolved and vessels were normal. The hypopigmented lesions were resolved, with subtle residual pigment clumping. The patient was released with no scheduled follow-up to monitor at annual eye exams.

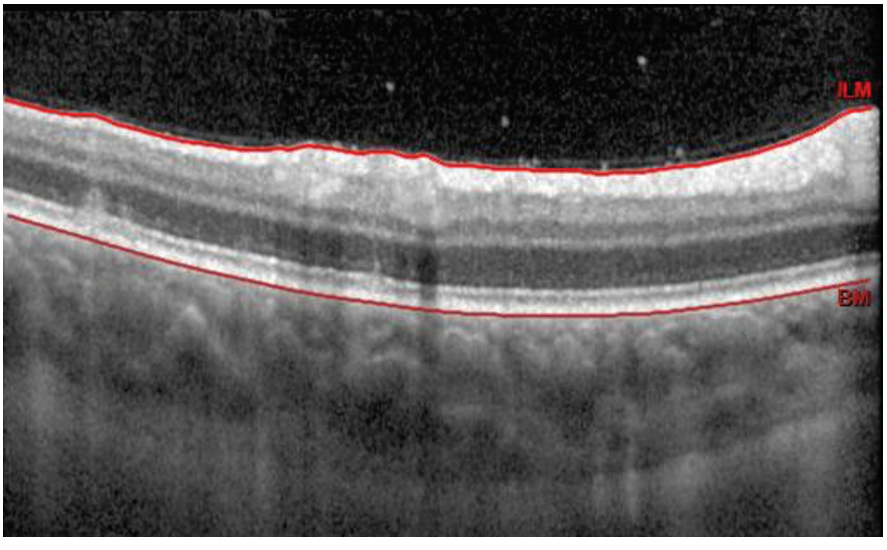


Figure 3. The lesions can be seen as focal disruptions to the RPE and ellipsoid zone on OCT.

> "ALTHOUGH THE ETIOLOGY OF MEWDS IS UNKNOWN, SOME HAVE THOUGHT IT TO BE CAUSED BY AN AUTOIMMUNE MECHANISM TRIGGERED BY INFECTIOUS PARTICLES."

## DISCUSSION

MEWDS is one of the white dot syndromes that involve inflammation of the choroid. MEWDS is most common in young myopic women and patients often complain of photopsias, dyschromatopsias, and vision loss accompanied by paracentral scotomas or an enlarged blind spot.[1] Viral-like illness will precede ocular complications in about one-third of cases, and it has been reported in association with the antigen HLA-B51. MEWDS will rarely present in both eyes, and has been described as an acute, unilateral condition that resolves rapidly without treatment.[1]

Although the etiology of MEWDS is unknown, some have thought it to be caused by an autoimmune mechanism triggered by infectious particles.[1] Regardless of the cause, MEWDS leads to inflammatory nonperfusion of the choriocapillaris. The downstream effect of this process is hypoxic damage to the outer photoreceptor layer with subsequent visual disturbances recognized by the patient.

MEWDS lies on a spectrum of choroidal inflammatory disorders. The size and confluence of choroidal vessel involvement provides a guideline for the nomenclature used to discuss these conditions. Other related white dot syndromes on this spectrum include acute multifocal ischemic choriocapillaritis (AMIC), multifocal choroiditis (MFC), and serpiginous choroiditis,[2] all of which involve the related physiopathological process of choriocapillaritis. As such, it is possible for the same patient to have more than one choriocapillaritis process.

There have been reports of MEWDS progressing to MFC, supporting the theory of a common mechanism.[1] MEWDS reversibly affects the smallest vessels of the choriocapillaris and is the most benign of these conditions. AMIC, MFC, and serpiginous choroiditis probably affect larger vessels of more sizable areas and are considered more severe.[2] Appearance on funduscopic examination depends on the level of involvement of the choriocapillaris. It is not possible to visualize involved areas as white lesions if the vessels are not significantly involved.

As with other conditions involving a disruption to Bruch membrane and the RPE, choroidal neovascularization and chorioretinal scarring are potential complications of MEWDS, so bear this in mind. The extent of the disease will dictate your treatment decisions, which range from observation to systemic immunosuppression and anti-VEGF therapy.[3] The latter are reserved for more persistent cases and those that develop choroidal neovascular membrane, respectively.

## KNOW WHAT YOU'RE UP AGAINST

MEWDS is a unilateral inflammatory condition affecting the choroid. Diagnosis can be difficult, as objective findings may be subtle. Exam findings include vitreous cell, multifocal hypopigmented lesions of the retina, and mild optic nerve edema.

Symptoms sometimes precede signs, so be cautious when jumping to the diagnosis of subjective visual disturbance or ocular migraine. Consider special testing such as OCT and fundus autofluorescence to aid in diagnosis. Although most cases are self-limiting, follow-up care is necessary to ensure resolution without complications. ■

1. dell'Omo R, Pavesio CE. Multiple evanescent white dot syndrome (MEWDS). *Int Ophthalmol Clin*. 2012; 52(4):221-228.
2. Lages V, Mantovani A, Papadia M, Herbort CP. MEWDS is a true primary choriocapillaritis and basic mechanisms do not seem to differ from other choriocapillaritis entities. *J Curr Ophthalmol*. 2018;30(4):281-286.
3. Ahnood D, Madhusudhan S, Tsaloumas MD, Waheed NK, Keane PA, Denniston AK. Punctate inner choroidopathy: a review. *Surv Ophthalmol*. 2017;62(2):113-126.

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