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LETTER TO THE EDITOR

Multiple Evanescent White Dot Syndrome following BioNTech SARS-CoV2 mRNA vaccination

Multiple Evanescent White Dot Syndrome suivant une vaccination BioNTech à ARN messager contre le SARS-CoV2

Introduction

Multiple Evanescent White Dot Syndrome (MEWDS) has been firstly described in 1984 by Lee Jampol and al. [1] as undefined retinal white dots in young women essentially, complaining about photopsia and paracentral scotoma, spontaneously resolving in 6 to 12 weeks.

It seems to be a primary ocular process, therefore not associated with systemic inflammatory or autoimmune disease, although an immune-mediated mechanism in a genetically susceptible person is supposed.

MEWDS has been described after vaccination and recently after diagnosed coronavirus disease 19 [2] and in 3 patients post BioNTech mARN vaccine [3,4].

In our case, the features are typical. This vaccine, as the other one previously described, may be a trigger of the syndrome.

Case report

A 30-year-old woman consulted in emergency for rapidly progressive right eye blurred vision.

Past ophthalmologic medical history included bilateral operated crystalline lens subluxation in childhood. Four months ago, she underwent a left trans-scleral sutureless intraocular lens fixation.

Medical history was not significant, she did not take any treatment.

She received a second injection of BNT162b2 mARN vaccine a month before presentation with no adverse effect but a slight arm pain. The first injection was done 2 months before as recommended.

Snellen visual acuity was 20/200 OD and 20/20 OS. Symptoms included a central scotoma. She did not report any photopsia.

Intraocular pressure was within normal limits. Anterior segment examination showed bilateral microcornea, right-eye aphakia and left-eye intraocular lens. There was no anterior chamber or vitreous inflammation.

Ophthalmoscopic examination of the right eye revealed white dots/spots in a ''wreath-like'' pattern involving the posterior pole and the mid periphery, foveal granularity and a small temporal flat pigmented lesion. Contralateral examination was unremarkable (Fig. 1).

Blue-light fundus autofluorescence images showed hyperautofluorescent spots that co-located with the white spots seen on funduscopic examination (Fig. 1).

Optical coherence tomography (Spectralis/HRA, Heidelberg Engineering, Germany) demonstrated several focal disruptions of the ellipsoid and interdigitation zones corresponding to the dots (Fig. 1) and vertical hyperreflective lines extending from the retinal pigment epithelium, mostly at the fovea (Fig. 1). Based on the multimodal imaging presentation, the patient was diagnosed with typical MEWDS. No additional laboratory work-up was performed. The patient was observed.

Two months after the initial presentation, visual acuity improved to 20/20 OD. Multimodal imaging showed resolution of the retinal lesions on fundoscopy image and optical coherence tomography. The left eye examination and optical coherence tomography was within the normal limits (Fig. 2).

Discussion

Recently, the standardization of uveitis nomenclature [5] working group determined classification criteria for MEWDS in the American Journal of Ophthalmology based on 51 cases in the literature. Our case responds to all three criteria.

Two cases of MEWDS following BNT162b2 mRNA were described by T. Rabinovitch et al. in a retrospective multicentric study [4,6] describing uveitic manifestations. Both cases appeared shortly after the second injection and resolved spontaneously from one to three months.

A case of MEWDS recurrence has also recently been described following Covid-19 vaccination [2,4].

Central foveal hyperreflective line on optical coherence tomography has been described in the intermediate to late stage of MEWDS. The time period from one month between the vaccination and the symptoms in our patient corresponds to the paraclinical features.

No PCR Covid test was performed because our patient had no general symptoms and was not in contact with a positive tested person in the previous days.

Essilfie et al. [6] suggested that two types of MEWDS would exist, primary and secondary (called ''epi-MEWDS''), describing cases of MEWDS coexisting with Multifocal choroiditis (MFC), Punctate Inner Choroidopathy (PIC) and even retinal detachment.

Even though a secondary MEWDS could be discussed, in our case the retinal pigmented lesion was unique and did

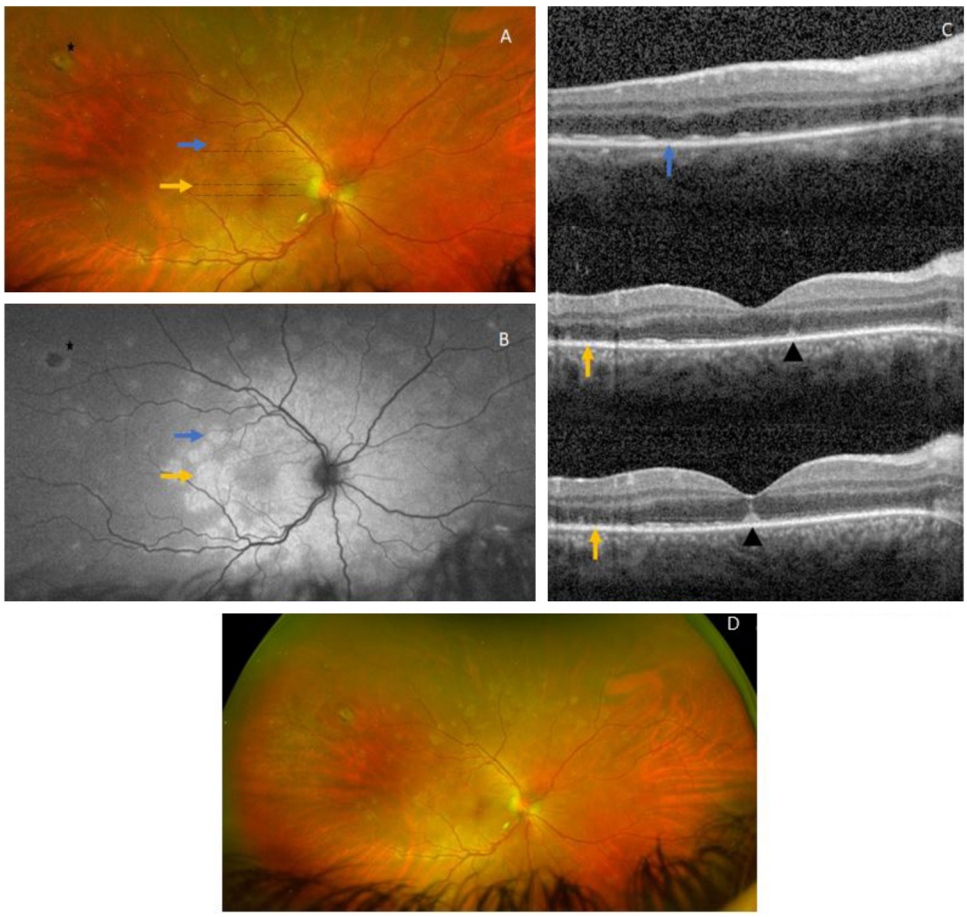

Figure 1. A. Right eye fundus photography. White dots and spots at the posterior pole, in the middle periphery and around the papillae (two spots pointed by yellow and blue arrows). Small pigmented superotemporal lesion (star). B. Right eye fundus autofluorescence. Hyperautofluorescent spots, larger than the white dots seen on fundoscopy (spots corresponding with the ones on fundus photography pointed by same color arrows). C. Right eye spectral domain optical coherence tomography B-Scan (horizontal sections collocating respectively top-down the dotted lines on fundus photography). Disruption of ellipsoid line corresponding to the dots/spots pointed by the same blue and yellow arrows; hyperreflective lines emerging from retinal pigment epithelium (triangles). D. Right eye ultra-wide-field photography. Preserved retinal periphery.

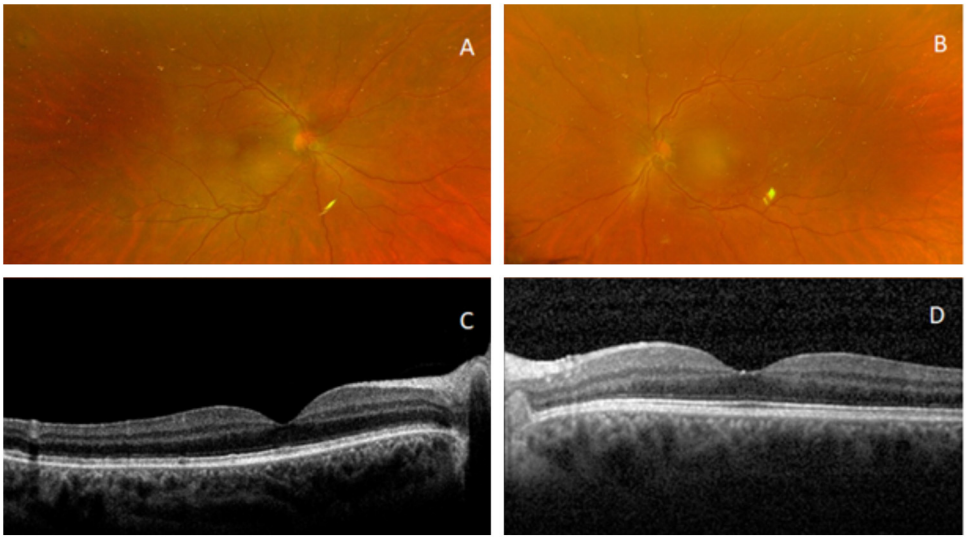

Figure 2. A. Right eye fundus photography after 8 weeks. Disappearance of the white dots at posterior pole and mid periphery. B. Left eye fundus photography at diagnosis. C. Right eye spectral domain optical coherence tomography after 8 weeks. Ellipsoid line restitution. D. Left eye spectral domain optical coherence tomography at diagnosis: Integrity of ellipsoid line.

not remind of MFC; it was likely to be a focal hypertrophy of the retinal pigment epithelium.

Our patient underwent a surgery four month ago but developed the syndrome in the contralateral eye. The left fundus examination being sane, we suppose that a reactional immune process manifesting only in the right eye is unlikely.

Conclusion

Our case is the fourth MEWDS reported following SARS CoV 2 vaccination. The features of the observation are alike to those already described in a multicentric retrospective study reporting two cases [3] and a recurrence in one patient [4].

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Disclosure of interest

The authors declare that they have no competing interest.

References

[1] Jampol LM, Sieving PA, Pugh D, Fishman GA, Gilbert H. Multiple evanescent white dot syndrome. I. Clinical findings. Arch Ophthalmol 1984;102:671—4.
[2] Caleb C Ng, Michael Jumper J, Emmett T, Cunningham Jr. Multiple evanescent white dot syndrome following influenza immunization — a multimodal imaging study. Am J Ophthalmol Case Rep 2020;19:100845, http://dx.doi.org/10.1016/j.ajoc.2020.100845.
[3] De Salvo G, Meduri A, Vaz-Pereira S, Spencer D. An uncommon cold of the retina. Surv Ophthalmol 2021, http://dx.doi.org/10.1016/j.survophthal.2021.08.006 [S0039-6257(21)00178-8. Epub ahead of print. PMID: 34433073; PMCID: PMC8380463; Available online 22 August 2021.
[4] Rabinovitch T, Ben-Arie-Weintrob Y, Hareuveni-Blum T, et al. Uveitis following the BNT162b2 mRNA vaccination against SARS-CoV-2 infection. Retina 2021;41(12):2462—71, http://dx.doi.org/10.1097/IAE.0000000000003277.
[5] Standardization of Uveitis Nomenclature (SUN) Working Group. Classification criteria for Multiple Evanescent White Dot Syndrome. Am J Ophthalmol 2021;228:198—204, http://dx.doi.org/10.1016/j.ajo.2021.03.050 [Epub ahead of print. PMID: 33845025].
[6] Essilfie J, Bacci T, Abdelhakim AH, et al. Are there two forms of Multiple Evanescent White Dot Syndrome? Retina 2021;42(2):227—35, http://dx.doi.org/10.1097/IAE.0000000000003288 [Epub ahead of print. PMID: 34432725].

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