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Pediatric Case with Acute Bilateral Serous Macular Detachment

Dear Editor,

The term “serous macular detachment” (SMD) was initially used in the context of optic pit maculopathy in the literature. The term was also commonly used in relation to age-related macular degeneration, central serous chorioretinopathy, and the Vogt-Koyanagi-Harada syndrome in the following years [1]. Upper respiratory tract infections (URTIs) are very common in children. Viruses are the most common agent, with the most frequent causative strains being rhinovirus, parainfluenza virus, and influenza virus [2]. Here, we report a case of bilateral SMD in a pediatric patient receiving symptomatic treatment for URTI.

A 9-year-old female patient presented to the Goznuru Eye Hospital complaining of visual loss in both eyes for the past day.

Written informed consent was obtained from the patient. Her history revealed that she had been diagnosed with URTI at the family health center 5 days previously and had been started on a paracetamol 500 mg, chlorpheniramine 4 mg, and pseudoephedrine (PSE) 60 mg combination treatment in the form of one dose each in the morning and evening. An ibuprofen 200 mg and PSE 30 mg combination as one dose in the morning and evening was additionally started by the family of the patient when the symptoms did not improve on the following day. Of note, PSE is used as a medication at 180 mg daily, but a dose of 120 mg daily is used in children between the ages of 6 to 11 years. Thus, importantly, the patient had been overdosing with PSE for 4 days. Upon presentation, visual acuity was 0.2 in the right eye and 0.3 in the left eye. Biomicroscopy findings were normal. Fundus examination revealed macular elevation in both eyes. Intraocular pressures were 13 mmHg in both eyes. A large serous elevation of the macula was observed in both eyes in the color fundus image (Fig. 1A, 1B). Furthermore, a large leaking area with increased leakage at the late phase was observed at the macula in both eyes on fundus fluorescein angiography (Fig. 1C, 1D). Op-

Fig. 1. (A,B) Fundus pictures showing the serous elevation in the right and left macula at presentation. (C,D) Leaking macular areas at the late phase in both eyes on fundus fluorescein angiography. (E,F) Optical coherence tomography (OCT) image showing serous macular detachment (SMD) in both eyes at presentation (right central macular thickness [CMT], 729 μm; left CMT, 663 μm). (G,H) OCT image showing decreased SMD at the fourth day follow-up (right CMT, 387 μm; left CMT, 273 μm). (I,J) OCT image showing significantly decreased SMD in both eyes at the thirteenth day follow-up (right CMT, 286 μm; left CMT, 260 μm). (K,L) OCT image showing almost complete resolution of the SMD in both eyes at the thirtieth day follow-up (right CMT, 267 μm; left CMT, 243 μm).

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tical coherence tomography (OCT) showed bilateral SMD (Fig. 1E, 1F). Drug toxicity was suspected and drug use discontinued. The Pediatrics Department was consulted for possible systemic diseases. Only mild leukocytosis was found. On the 4th day, OCT revealed a subretinal fluid decrease that was more pronounced in the left eye (Fig. 1G, 1H). Subsequently, on the 13th day, the subretinal fluid was significantly decreased on OCT (Fig. 1I, 1J). However, visual acuity was normal in both eyes on the 30th day. No fluid was detected under the macula and the macula appeared completely reattached on OCT (Fig. 1K, 1L).

URTI is a common disease, especially in the pediatric age group. The PSE present in both the combination treatments used in our case was thought to be possibly involved in overdose-related ocular toxicity. There are very few cases and studies related to the effects of PSE on the eye published to date.

Ovet et al. [3] administered 60 mg of PSE orally in subjects and measured the choroidal thickness of the right eyes at the first, third, and sixth hours in a study on a group of 50 healthy patients. They reported that choroidal thickness increased at the first hour and returned to normal at the 3rd hour. We think that increased resistance in the choroidal vessels due to PSE's vasoconstrictive effects and consequent deterioration of the blood-retina barrier function of the retinal pigment epithelium followed by fluid passage into the subretinal area could have been instrumental in SMD development as a result of PSE toxicity in our case.

Separately, Michael et al. [4] reported central serous chorioretinopathy in one eye each of a 43-year-old female and a 32-year-old male who were using high doses of PSE for the treatment of URTI. The symptoms and clinical findings in both patients improved following the discontinuation of this drug. Our case also involved the use of high-dose PSE, but differs from these two cases in many ways. Our patient was in the pediatric age group and her visual loss was bilateral and due to SMD.

In conclusion, a detailed history is required in pediatric patients who present with sudden visual loss. If side effects are suspected, their ongoing medications should be discontinued and the patient checked at short intervals to guide further management decisions.

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Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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