Sterile endophthalmitis following intravitreal triamcinolone acetonide in July 2010

Dear Editor,

Sterile endophthalmitis is defined as true intraocular inflammation following intravitreal injection of triamcinolone acetonide (IVTA) that cannot be attributed to an infectious process.\(^1\) We report three cases of sterile endophthalmitis that occurred in July 2010.

A 49-year-old male patient was treated with IVTA for diabetic macular edema (DME) in his left eye. Two days after the injection, the patient complained of ocular discomfort. His vision was 20/400, which was the same as before IVTA. Slit lamp examination showed 1 mm hypopyon in the anterior chamber. B-scan showed vitreous opacities [Fig. 1]. The vitreous culture was performed, followed by intravitreal injection of vancomycin and ceftazidime. The result of vitreous culture was negative. Furthermore, he was treated with oral moxifloxacin and topical prednisolone acetate and moxifloxacin. At 2 weeks after IVTA, the anterior chamber become clear and the hypopyon resolved completely, but the diffuse vitreous haze remained. At 2 months follow-up, visual acuity (VA) had improved to 20/100.

A 57-year-old male patient was treated with IVTA for panuveitis in his left eye. At the first visit on day 1 after IVTA, corneal edema, a severe anterior chamber reaction with hypopyon, and conjunctival hyperemia were detected in the left eye. His VA had decreased from 20/200 to 20/400, but the patient denied having ocular pain. Because of the vitreous inflammation, he was treated with oral moxifloxacin and topical prednisolone acetate, and moxifloxacin, but no vitreous sample was obtained. The inflammation was completely resolved in 2 weeks with the improvement of VA to 20/100.

A 59-year-old male patient was seen for a scheduled examination 1-day after IVTA in the right eye for treatment of DME. His VA dropped from 20/200 to counting fingers. He denied having any pain. He had a 1 mm area of hypopyon with flare. Fundus examination revealed vitreous opacities. Vitreous culture was promptly performed, followed by intravitreal injection of vancomycin and ceftazidime. In addition, oral moxifloxacin and topical prednisolone acetate, and moxifloxacin were started. The results of the vitreous culture were negative. Hypopyon resolved in 3 days, and after the 1st week, the anterior chamber and vitreous reaction had cleared.

Intravitreal injection of triamcinolone acetonide was performed in 10 eyes in July 2010, and sterile endophthalmitis

![Figure 1: Slit-lamp photograph and B-scan ultrasonography of case 1. (a) Slit-lamp photograph revealed hypopyon and conjunctival hyperemia. (b) B-scan ultrasonography showed dense vitreous opacities](image)

![Figure 2: Change of vial in summer 2010](image)

**Table 1: Characteristics of patients with sterile endophthalmitis**

| Case number | Age (years) | Indication for IVTA | Phakic status | Time to presentation (day) | Culture results | Other past ocular history | Recovery to initial VA |
|-------------|-------------|---------------------|---------------|---------------------------|----------------|--------------------------|----------------------|
| 1           | 49          | DME                 | Phakic        | 2                         | Negative       | Vitrectomy               | Yes                  |
| 2           | 57          | Panuveitis          | Phakic        | 1                         | -              | Repeated IVTA            | Yes                  |
| 3           | 59          | DME                 | Pseudophakic  | 1                         | Negative       | Cataract surgery         | Yes                  |

IVTA: Intravitreal injection of triamcinolone acetonide, VA: Visual acuity, DME: Diabetic macular edema
occurred in three eyes among them. We believe that all three cases represent sterile endophthalmitis that may have resulted from a toxic reaction to the drug or a contaminant in the vials.[3] Actually, the vial of triamcinolone acetonide changed in summer 2010 [Fig. 2]. The presence of an endotoxin might have contributed to the development of sterile endophthalmitis in these patients, but this could not be confirmed.

The basis of this assumption derives from several facts: (1) All cases feature acute painless manifestation, whereas infectious endophthalmitis typically presents with pain acutely. (2) The results of vitreous culture were negative, although we performed only in two cases. (3) All patients had a well-known risk factor for sterile endophthalmitis [Table 1].

In summary, we report three cases of sterile endophthalmitis after changes of triamcinolone acetonide vial in July 2010.

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DOI: 10.4103/0301-4738.159906