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Case Report

Early Detection of Sympathetic Ophthalmia after Evisceration of the Contralateral Eye

Janin Lou C. Billano, MD*[1], Perfecto Elpidio Octavio Cagampang III, DPBO [2], Maria Angelica Villano-Torres, DPBO [3], Ryan Torres, DPBO [4]

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***Correspondence to:** Janin Lou C. Billano,.

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Abstract

Sympathetic ophthalmia is a sight-threatening, bilateral granulomatous panuveitis following unilateral trauma or ocular surgery. The epidemiology, management, and prognosis of this disease are poorly described in literature because of its rarity. The purpose of this report is to present the early clinical manifestations and subsequent treatment following recognition of sympathetic ophthalmia. We report a case of a 34-year-old female who developed sympathetic ophthalmia on the right eye, four weeks after a penetrating eye trauma on the left, to which she underwent evisceration. Our case showed that current medical management with systemic corticosteroids present effective treatment of this potentially devastating disease. Early detection of sympathetic ophthalmia is paramount to achieve favorable visual outcome.

Introduction

Sympathetic ophthalmia is a rare, bilateral, granulomatous uveitis initiated by exposure of previously immune-privileged ocular antigens with an ensuing bilateral autoimmune response.**[**1**]** After penetrating ocular injury, uveal tissue is exposed to conjunctival lymphatics, and antigens move to the regional lymph nodes, resulting in a cell-mediated immune response.**[**2**]**

At initial onset, the main clinical findings include posterior pole pathologies such as serous retinal detachment, vitritis, or papillitis.**[**3**]** Sub-RPE nodular lesions that appear yellow-white, corresponding to histopathologic Dalen-Fuchs nodules, are typical of this disease, but not pathognomonic.**[**4**]** Granulomatous anterior segment inflammation with mutton-fat keratic precipitates may be seen in severe or chronic and recurrent cases.

High-dose systemic corticosteroids are the mainstay of treatment. Immunomodulators, intravitreal fluocinolone acetonide implant, and biologic drugs are promising adjuncts for treatment.**[**5**]**

Case Report

We present the case of a 34 year-old female with sudden blurring of vision on the right eye. Four weeks prior to consult, patient had a penetrating eye injury on the left when glass shards hit her eye during an

altercation with her husband (Figure 1). That same eye went blind and underwent evisceration two weeks after the initial injury. The right eye had been unremarkable until 4 weeks post-injury when she presented to our clinic with a 2-day history of eye redness, tearing, dull eye pain and blurring of vision. There was no history of prior ocular diseases or surgeries except those mentioned previously.

On examination, the best corrected visual acuity (BCVA) was 5/200 in the right eye using Snellen quotations. The left eye was anophthalmic (Figure 2). Slitlamp biomicroscopic findings revealed diffuse conjunctival injection, with a clear cornea, and no keratic precipitates, cells or flare (Figure 3). Intraocular pressure using Goldmann applanation tonometer is 15 mmHg.. Ishihara test revealed 2 out of 16 plates.

Fundus examination showed serous retinal detachments on the posterior pole with multiple round, subretinal whitish lesions (Figure 4) as corroborated by ocular coherence tomography (Figure 5) and fundus fluorescein angiography (Figure 6).

Hematology tests revealed slight leukocytosis and high erythrocyte sedimentation rate. Chest radiographs, syphilis tests, urine exam, stool analysis and hepatitis profile were all unremarkable.

High dose oral and topical corticosteroids were immediately initiated and patient was monitored for progression of the disease. Topical steroids was also started at a frequency of every hour initially. After two months of oral corticosteroids (1-2mg/kg/day), BCVA improved to 20/20 (-0.5 sph) on Snellen. We initially planned to start immunomodulators thereafter but patient opted continuing medical consult with another ophthalmologist nearer her residence.

Fig. 1. Penetrating ocular injury 4 weeks prior

Fig. 2. Anophthalmic contralateral eye

Fig. 3. Relatively unremarkable anterior segment of right eye

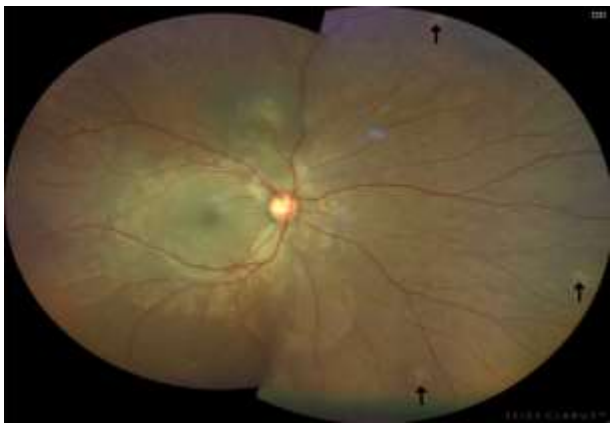

Fig. 4. Exudative retinal detachments on the posterior pole with multiple subretinal whitish lesions (black arrows)

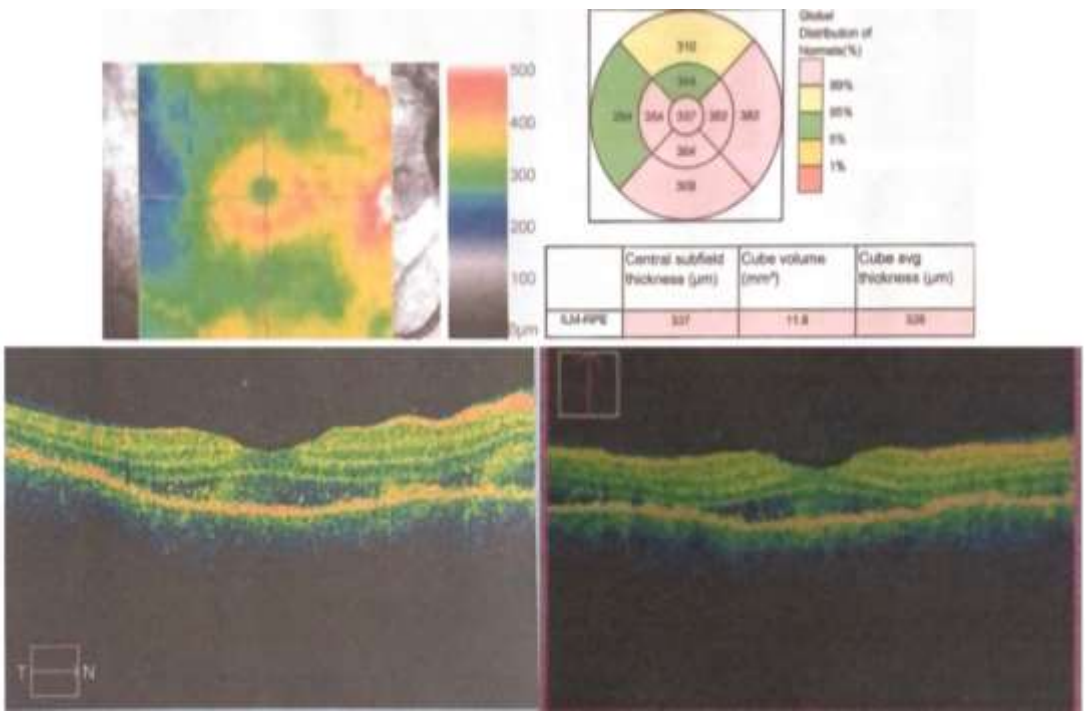

Fig. 5. Thickening of foveal and perifoveal areas, with hyporeflective spaces in the subfoveal neurosensory retina

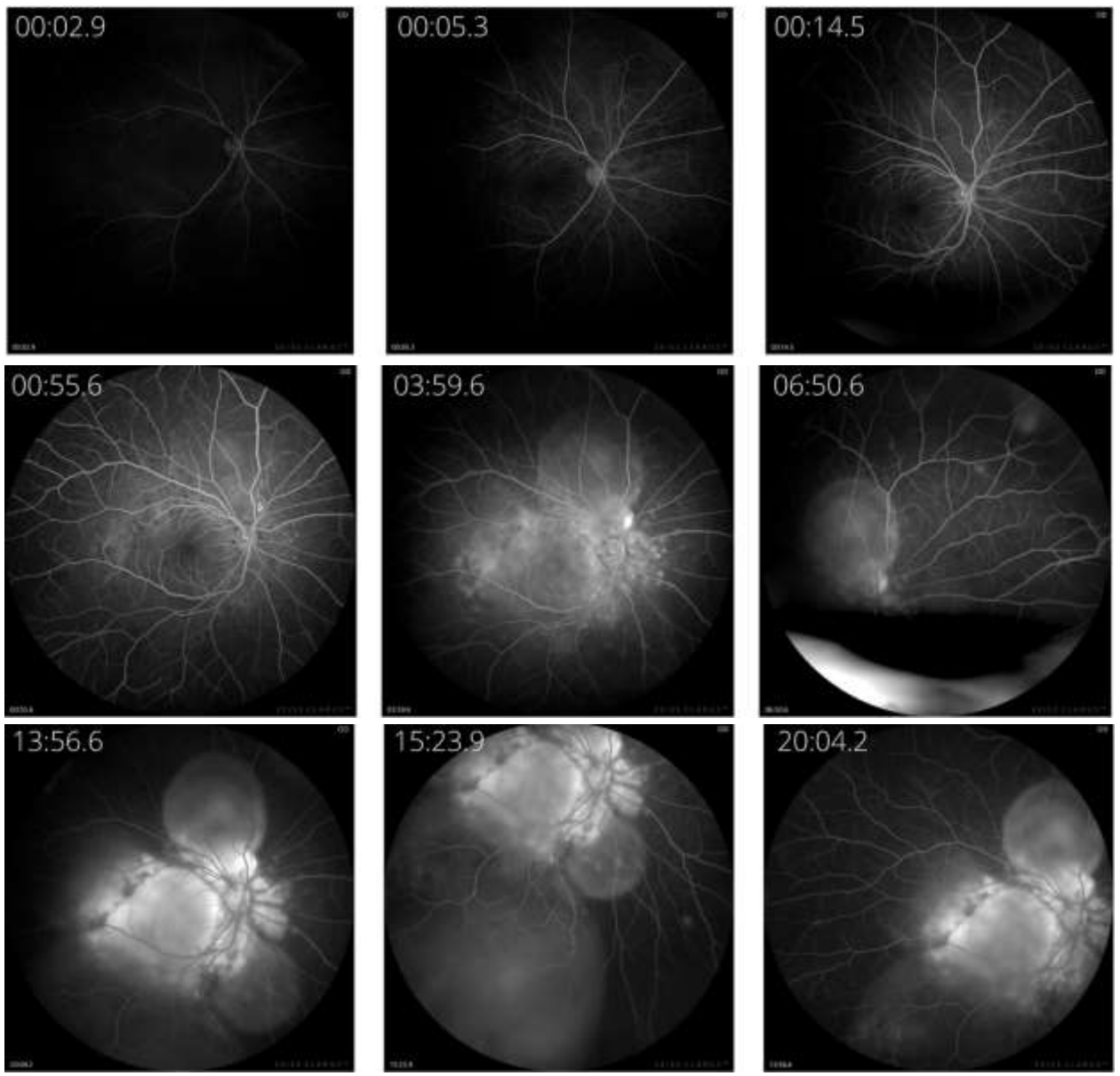

Fig. 6. Diffuse hyperfluorescence on the posterior pole that enlarge and increase in intensity throughout the late phase corresponding to exudative retinal detachments

Discussion

Our patient demonstrated a case of typical sympathetic ophthalmia which developed 4 weeks after a penetrating ocular injury. The disease was detected early, without significant findings in the anterior chamber yet. Early-stage sympathetic ophthalmia may present with findings of isolated anterior segment

inflammation or isolated posterior segment inflammation. With prompt detection at this stage, initiation of treatment may lead to a better visual prognosis and outcome.**[**2**]**

The pathophysiology of sympathetic ophthalmia is not clearly described in literature. As the eye is an immune-privileged organ in the body, systemic immune responses do not typically reach its space. This is due to a relative paucity of intraocular lymphatics and presence of tight junctions in the retinal pigment epithelium, establishing the blood-retina barrier.**[**6**]** During penetrating ocular injuries or ocular surgeries, these barriers and tissue organization are potentially disrupted, leading to exposure of ocular antigens to local conjunctival lymphatics, resulting in an activation of cell-mediated immunity or a Type IV delayed hypersensitivity reaction.**[**7**]**

This case opens an opportunity for ophthalmologists to properly advise and warn patients who have history of intraocular trauma or procedures about the early warning signs and symptoms of sympathetic ophthalmia. This knowledge will greatly shorten the time to clinical presentation and may play a great role in the prompt diagnosis and treatment, and ultimately in long-term visual outcomes.

Conclusion

Sympathetic ophthalmia should always be in the differential diagnoses in patients who had ocular trauma or surgeries. Early detection and intervention may contribute to better visual prognosis.

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