

Traumatic Macular Hole and Uveitis: A Case Report

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ABSTRACT

Introduction: Blunt ocular trauma may be associated with a variety of complications, including traumatic macular holes (TMH) and uveitis. Concerning the TMH, there is no standard treatment protocol. There have been reports of spontaneous closure and of the use of certain medications and surgical techniques. Our purpose is to present a case of bilateral blunt ocular trauma with TMH in the right (OD) and uveitis in the left eye (OS) in a 24-year-old Caucasian man. **Case presentation:** The patient had complaints of decreased vision in OD and redness and discomfort in OS. Three days previously, he had sustained trauma to both eyes with an exercise resistance band. The diagnosis was made with a thorough ophthalmic exam and optical coherence tomography (OCT). The best-corrected visual acuity (BCVA) of OD was 20/40 and of OS – 20/20. The intraocular pressure was within normal limits. There was a TMH in OD and iridocyclitis in OS. The therapy included prednisolone with an initial dose of 60 mg q.d. PO, a lutein/zeaxanthin supplement, and additional topical treatment for OS – dexamethasone and cyclopentolate. The TMH in OD had improved significantly within 6 days. BCVA of OD recovered to 20/20 in a month. **Conclusion:** We observed closure of the TMH with complete recovery of vision in the affected eye, most likely spontaneous, and with full resolution of the uveitis in the other, in the setting of short-term prednisolone therapy. The uveitis in OS was also treated with topical dexamethasone and cyclopentolate.

1. Introduction

Blunt ocular trauma may be associated with a variety of sight-threatening complications, traumatic macular holes (TMH) and uveitis being some of them.^{1,2} It usually affects young men in their third decade of life and may be sports related.^{3,4} Concerning the TMH, there is no standard and widely accepted treatment protocol. However, in larger holes (>250 µm), earlier surgery may be considered.⁵ In the literature, there have been reports of spontaneous closure and of the use of certain medications and surgical techniques-pars plana vitrectomy, as therapeutic measures.^{2,3,5-8} Our purpose is to present a case of bilateral blunt ocular trauma with TMH in the right (OD) and uveitis in the left eye (OS) in a young man.

2. Case Presentation

A 24-year-old Caucasian man presented to us with complaints of decreased vision in OD and redness and discomfort in OS. Three days previously, he had sustained a simultaneous trauma to both eyes with an exercise resistance band. The diagnosis was made with a thorough ophthalmic exam and optical coherence tomography (OCT). The review of systems was negative for other diseases. The follow-up period was 3.6 years.

The best-corrected visual acuity (BCVA) of OD was 20/40 and of OS – 20/20. The intraocular pressure was within normal limits in both eyes. The anterior segment of OD was normal, whereas, in the posterior segment, a focal schisis from the internal limiting membrane to the level of the retinal pigment

epithelium (RPE) was observed in the fovea, as shown in the upper image of Figure 1. There was no posterior vitreous detachment. Unfortunately, the TMH in OD was not measured with calipers at the time of data collection, though it is apparently less than 400 μm or

a Stage 2 hole in the Modified Gass classification. The left eye had iridocyclitis with mixed conjunctival injection, a clear cornea, and 3+ cells in the anterior chamber, with no changes in the posterior segment.

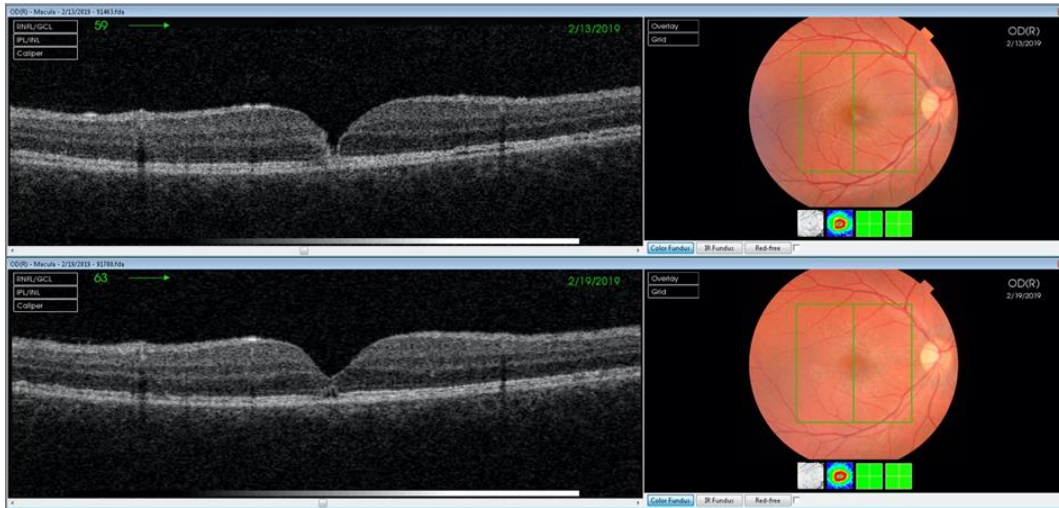


Figure 1. Comparative OCT image of the macular area of OD: the upper image shows a small TMH with shallow areas of RPE detachment nasally; the lower image shows an almost complete closure of the TMH with a residual defect at the level of RPE.

The treatment was conducted with corticosteroids (CS)-prednisolone with an initial dose of 60 mg q.d. PO, continued for 2 weeks, a lutein/zeaxanthin supplement, and with local therapy for OS – topical dexamethasone six times daily and cyclopentolate b.i.d. The defect in the macula of OD improved significantly within 6 days, with residual changes at

the level of the inner segment/outer segment junction and RPE, as seen in the lower image of Figure 1. BCVA of OD was 20/30 then. In about 1 month, it recovered to 20/20. On the last follow-up exam, 3.6 years after the trauma, there was complete restoration of normal foveal anatomy, as shown in Figure 2. BCVA has remained 20/20 in both eyes.

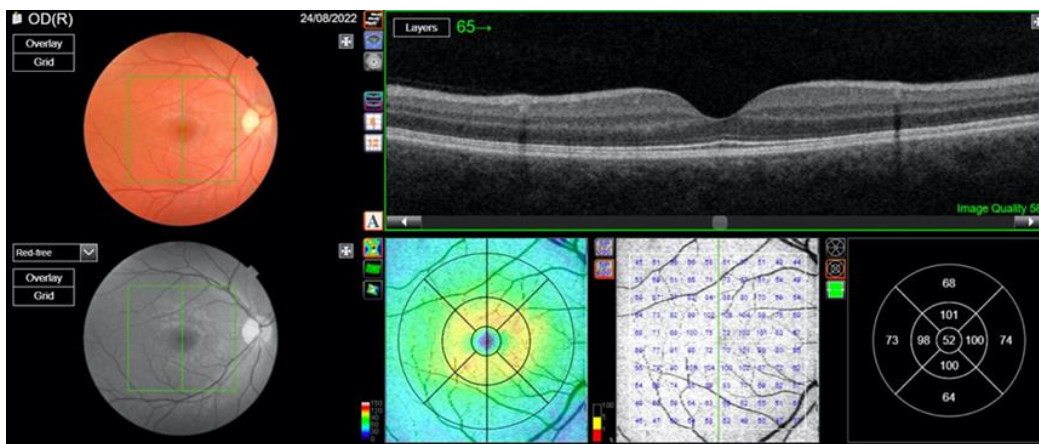


Figure 2. Follow-up OCT image of macula OD showing complete restoration of foveal architecture.

3. Discussion

Traumatic maculopathy may lead to irreversible loss of useful vision.² The mechanisms of TMH formation and spontaneous closure are still a matter of debate.^{2,3} The case we presented was characterized by significant anatomical improvement and complete functional recovery of vision of the eye with TMH (OD), and with full resolution of the uveitis in OS, while on systemic prednisolone therapy. Whether the CS therapy led, hastened, or did not contribute to the closure of the hole is difficult to determine based on the scarce published reports on the problem.⁹ In the literature, spontaneous improvement had mostly been observed within 2 months, as in our case.³ According to a review by Liu et al.⁷, recovery could be expected with increased frequency from the 2nd week until the 12th month. In our patient, the hole had begun to close in about 6 days. It was small, less than 400 µm, Stage 2, according to the Modified Gass classification¹⁰, and there were no intraretinal cystic spaces or neurosensory retinal detachment, making it a type 3 TMH as per Huang et al.¹⁰, which are factors favoring spontaneous improvement.¹¹

As to the efficacy of medical therapy, there is a report of closure of TMH with the topical nonsteroidal anti-inflammatory medication (NSAID) ketorolac 0.4%, used four times daily.¹² Kurz et al.¹³ have also described a case of full-thickness, idiopathic macular hole closure by using topical ketorolac. Besides, Venkatesh et al.⁹ described a case of successful closure of TMH with one injection of intravitreal triamcinolone, demonstrating that CS might be effective, though in their case, there was also associated inflammation in the same eye, unlike in our patient. Case reports or other studies describing the use of systemic CS in TMH, as was our experience, haven't been published yet. How CS would lead to TMH closure is also unclear. Regarding the iridocyclitis associated with blunt trauma, the management is like that for acute noninfectious anterior uveitis.^{1,14} In our case, it resolved completely with topical and systemic CS therapy.

4. Conclusion

In our case of bilateral ocular trauma, we observed closure of the traumatic macular hole with complete recovery of vision in the affected eye, and with full resolution of the uveitis in the other, in the setting of short-term, systemic prednisolone therapy. The uveitis in OS was also treated with topical dexamethasone and cyclopentolate. Although the TMH closure was most likely spontaneous, it may be worthwhile to examine further the efficacy of systemic corticosteroids in this condition.

5. References

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