



Bleach-Associated Uveitis: A Case Report

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ARTICLE INFO

Keywords:

Bleach
Chemical ocular injury
Dexamethasone
Sodium hypochlorite
Uveitis

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All authors have reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/sjo.v6i1.97>

ABSTRACT

Introduction: Chemical ocular injuries represent ophthalmologic emergencies with potentially blinding complications. Burns with alkalis tend to be more serious due to deeper tissue penetration as a result of colliquative necrosis. Uveitis is usually observed in higher grades of burns with significant alterations in the anterior segment of the eye. This study aimed to report a case of late-onset unilateral uveitis following a mild alkali burns with sodium hypochlorite (bleach). **Case presentation:** A 64-year-old Caucasian woman reported that 3 weeks ago, she had an accident with bleach coming in contact with both eyes. At that time, she had emergency ocular irrigation with saline to both eyes, and she had also used artificial tears for about a week. Besides bilateral conjunctival hyperaemia and punctate corneal epithelial erosions, no other complications had been noted. Her symptoms had subsided in several days. Upon presentation to the clinic, reduced best-corrected visual acuity was observed in both eyes to 20/30, which was attributed to age-related cataracts, normal intraocular pressure, normal conjunctiva in both eyes, the clear cornea in the right eye (OD) and several white, round, middle-sized granulomatous keratic precipitates in the left eye (OS), without epithelial and stromal alterations. The anterior chamber of OS demonstrated a 0.5+ cellular reaction. The remaining ocular status was normal. **Conclusion:** Based on the history of chemical ocular injury, the lack of systemic diseases and the mild form of ocular inflammation, no additional diagnostic tests were offered. The patient was started on topical dexamethasone phosphate for 1 month with an initial dose of one drop four times daily, which led to remission.

1. Introduction

Chemical ocular injuries represent ophthalmologic emergencies with potentially blinding complications.^{1,2} Burns with alkalis tend to be more serious due to deeper tissue penetration as a result of colliquative necrosis.¹⁻³ The severity or grade of a chemical ocular injury may be assessed with the use of the Roper Hall or Dua classifications.^{4,5} Uveitis is usually observed in higher grades of burns with significant alterations in the anterior segment of the eye.^{1,6} This study aimed to report a case of late-onset unilateral uveitis following a mild alkali burns with sodium hypochlorite (bleach).

2. Case Presentation

A 64-year-old Caucasian woman presented to our clinic for an annual exam regarding a choroidal nevus. She reported that 3 weeks before, she had an accident with bleach (sodium hypochlorite 4.5 grams in 100ml) coming in contact with both eyes. At that time, she had emergency ocular irrigation with saline to both eyes, and she had also used artificial tears for about a week. Besides bilateral conjunctival hyperaemia and punctate corneal epithelial erosions, no other complications had been noted. Her symptoms had subsided completely in several days.

Upon presentation to the clinic, reduced best-corrected visual acuity was observed in both eyes to 20/30, which was attributed to nuclear cataracts, normal intraocular pressure, normal conjunctiva without injection or chemosis in both eyes, the clear cornea in the right eye (OD) and several white, round, middle-sized granulomatous keratic precipitates in the left eye (OS), without epithelial and stromal alterations. The anterior chamber of OS demonstrated a 0.5+ cellular reaction. The remaining ocular status was normal bilaterally.

Based on the history of chemical ocular injury, the lack of systemic diseases, and the mild form of ocular inflammation, no additional diagnostic tests were offered. The patient was started on topical dexamethasone phosphate for 1 month with an initial dose of one drop four times daily, which led to complete recovery. More than 3 months following the presentation, she had not had any recurrences.

3. Discussion

Chemical ocular injury refers to damage caused to the eye's surface or internal structures by exposure to a hazardous chemical substance.² Chemical ocular injuries can occur in a variety of settings, including industrial accidents, household mishaps, and laboratory incidents.⁷ Chemical ocular injuries, especially alkali burns, may lead to severe blinding complications, including limbal stem cell deficiency, keratopathy, glaucoma, and uveitis.^{1,6} Alkali substances penetrate deeper into the ocular layers and have more potential for serious damage compared to acids.^{2,5,7} In this case, contrary to the prevailing reports, the only observed complication was mild unilateral iritis 3 weeks after an alkali chemical injury with sodium hypochlorite. The patient was otherwise asymptomatic, and there were no other anatomical alterations.

The severity of a chemical ocular injury depends on several factors, including the type and concentration of the chemical, the duration of exposure, and the nature of the eye's tissue that comes into contact with the chemical.^{8,9} Chemical ocular injuries can cause a range of symptoms, including eye pain, redness,

swelling, and vision loss.^{10,11} In severe cases, chemical ocular injuries can lead to permanent blindness or loss of the eye itself.^{12,13}

Concerning the choice of therapy, topical dexamethasone was elected to use for one month with an initial dose of four times daily, as it was assumed that the uveitis was a sterile, secondary inflammatory reaction to the chemical injury.¹⁴⁻¹⁶ Therapy had been successful without any recurrences of the iritis during the follow-up period.

4. Conclusion

Sodium hypochlorite is usually associated with uveitis in cases with high-grade burns and severe concomitant ocular injuries. In our study, mild unilateral iritis was observed in the absence of symptoms and other ocular structural complications following a mild chemical injury with bleach to both eyes. Therapy with topical dexamethasone for one month led to remission of the uveitis.

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