

A Case of Keratoconjunctivitis Secondary to Aquarium Zoanthid Coral Exposure

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Abstract

This is a case of a 32-year-old male who presented with bilateral eye redness and burning sensation after aquarium coral had squirted fluid into his eyes. There was a large number of small-to-moderate size, fine, dendritiform epithelial lesions scattered all over the cornea and conjunctiva; there were no other abnormal findings. He was immediately started on fluorometholone drops and the symptoms resolved after 2 days. The recovery was uneventful with complete resolution of the epithelial changes by day 17. This could represent a case of a relatively mild palytoxin reaction which was successfully treated with topical mild steroid and lubricant.

Keywords: Aquarium; Coral; Keratoconjunctivitis; Palytoxin; Zoanthid

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Introduction

The aim of this report is to provide a brief account of a case of keratoconjunctivitis secondary to likely aquarium Zoanthid coral (also known as zoas [1]) toxin exposure that was successfully managed with topical steroid. Zoanthids are common aquarium toxin-producing corals [2]. Palytoxin is found in some species of zoanthids and may be fatal as it affects the Na^+/K^+ ATPase pump. Ophthalmologists and health care providers in general should be aware of this possible presentation and its associations.

Case Report

A 32-year-old man presented to ophthalmic casualty one day after doing aquarium maintenance at home. His past medical history was unremarkable and had not worn contact lenses for at least 3 days. He reported that a fluid squirt from a coral (Figure 1) directly struck his eyes from close range after cutting through the coral with a scalpel. He washed his face and eyes immediately. Initially he was asymptomatic but the following day he developed worsening redness and burning sensation in both eyes. There was no blurring of vision. He denied systemic symptoms and also denied having inhaled or ingested the fluid or sustaining skin cuts.



Figure 1: The Zoanthid coral present in the patient's aquarium (image provided and used with permission by the patient).

On examination at presentation, the day following the incident, the tear fluid pH was ~7, estimated using a urine dipstick with the pH pad pressed directly on the tear lake. Spectacle corrected Snellen visual acuity was 6/6⁻¹ in both eyes. Slit lamp assessment did not reveal any apparent corneal stromal changes. However, the conjunctival and corneal epithelium revealed numerous very small to moderate size, dendritiform lesions with fluorescein uptake; there were a few larger lesions on the bulbar conjunctiva, and there were some lesions on the subtarsal conjunctiva without a significant papillary reaction. No superficial foreign bodies were found. Intra-ocular pressure (IOP) by Goldmann applanation tonometer was 16 mmHg in the right eye and 13 mmHg in the left. The anterior chambers were quiet and the fundi normal. A detailed diagram of the lesions and their distribution was drawn. He was started on topical fluorometholone 0.1% drops and lubricating drops, both four times/day. The patient was told not to wear contact lenses. He was initially reviewed daily.

Follow-up

On day 1 the patient felt somewhat better; there was foreign body sensation in his right eye only. The eyes were not injected and the conjunctival lesions were mostly resolved. The appearance of the corneas was the same. He was continued on the same treatment regimen and by the following day he was asymptomatic. There was no corneal fluorescein uptake by day 6 with very small, scattered, dendritiform epithelial opacities persisting. On day 8 the steroid was gradually tapered by a drop every 3 days as the epithelial opacities gradually faded and the patient remained asymptomatic. At the end of the steroid taper the corneal epithelial opacities had resolved completely and the IOP was unchanged.

Discussion

Signs of coral toxin injury can be mild to potentially sight-threatening. A metallic taste is a symptom of possible toxin exposure, but this was absent in this case. Possibly, if the epithelial barrier is intact the prognosis is expected to be good. If the epithelium is compromised, as in contact lens use, corneal infiltration is more likely and a higher dose of steroids would be indicated. This case suggests that a non-intensive regimen of a mild topical steroid seems to be effective in managing the toxic effects of accidental superficial ocular exposure to Zoanthid coral without stromal keratitis. The frequency, potency, and duration of steroid therapy should be tailored to the presenting features. A search on PubMed revealed 15 cases of ocular exposure to aquarium and marine coral reported in the literature in English but no cases of direct fluid jets from coral hitting the eyes [2-4].

The toxicity can be severe, including corneal melting/perforation and scarring, and therefore these patients should be followed up closely; a systemic enquiry should be undertaken on initial presentation given the potential lethal consequences of palytoxin exposure. It seems that withholding steroids results in worsening of symptoms [2]. While there is a paucity of scientific literature, there are numerous online forums in which aquarium enthusiasts and divers share their experience. It is recommended that information about the species of coral is sought from the supplier and known palytoxin-producing types should be avoided. Goggles and gloves should be worn when handling these corals. As in other chemical injuries, immediate copious irrigation is advisable.

Conclusion

Coral-related ocular injuries are an uncommon presentation. There should be awareness of the possible serious systemic effects and topical steroids should be initiated early on to deal with the ocular features.

References

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