

Corneal Injury Due To Dieffenbachia Plant's Sap

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Abstract

A 26-year-old woman was inoculated with the Dieffenbachia sap's liquid into her left eye while she was cutting away the Dieffenbachia plant. Ophthalmic examination of the left eye disclosed visual acuity of 8/10, with mild conjunctival chemosis and injection. Fine refractile needle-like blue crystals were seen within the infero-nasal cornea extending from the subepithelial region to the posterior stroma. Chloramphenicol 1% and fluoromethalone 5% were prescribed to the patient four times a day. Visual acuity of the left eye was 10/10 at the third day of follow-up. Corneal crystals were less visible. One month later, visual acuity was 10/10 in her left eye and the corneal crystals had totally disappeared.

Keywords: Dieffenbachia plant; Crystalline keratopathy

Key messages: Dieffenbachia is a common indoor plant. Crystalline keratopathy due to Dieffendachia is seen very rarely. It is necessary to investigate the patient's history carefully to find the etiologic factor of corneal pathologies.

Introduction

Some garden plants may cause ocular injuries when accidental contact with human eyes occurs. Some of these are toxic to the ocular surface and may elicit different pathogenic mechanisms and different clinical manifestations [1]. Fine needle-like blue crystals in the corneal stroma, due to the family of Dieffenbachia are seen very rarely. Similar cases have been reported previously [2-4]. We report a case with crystalline keratopathy caused by Dieffenbachia sap.

Materials and Methods

A 26-year-old woman was inoculated with the Dieffenbachia sap's liquid into her left eye while she was cutting away the Dieffenbachia plant [Figure 1]. She felt a stinging pain and lacrimation. She irrigated her left eye with tap water. Her eye was also irrigated by a local practitioner one hour later in the emergency service. The symptoms worsened and visual blurring progressed. We saw the patient seven hours later. Ophthalmic examination of the left eye disclosed visual acuity of 8/10, with mild conjunctival chemosis and injection. Fine refractile needle-like blue crystals were seen within the infero-nasal cornea extending from the subepithelial region to the posterior stroma [Figure 2]. Corneal edema was present and inflammatory activity within the anterior chamber was not found. The uninjured left eye was totally normal at the examination. Chloramphenicol 1% and fluoromethalone 5% prescribed to the patient four times a day. Visual acuity of the left eye was 10/10 and conjunctival injection and chemosis resolved at the third day of follow-up. Corneal crystals were disappeared slightly [Figure 3]. One month later, visual acuity was 10/10 in her left eye and the corneal crystals had totally disappeared. No residual corneal scarring or neovascularisation was seen during follow-up.

Results and Discussion

Dieffenbachia is a common indoor plant belonging to Araceae family. Active principles of this plant are calcium oxalate and L-asparagine. The toxicity is due to its calcium-oxalate component. Skin exposure can produce dermatitis with contact. Diarrhea and digestive tract inflammations have been described when the plant juice is ingested [4].

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The plant's sap causes tissue injury. Severe keratoconjunctivitis was reported previously by Hsueh, Ellis and Seet [1-3]. Seet reported 23-year old man injured with plant' sap. Crystalline keratopathy occurred on the first day and had resolved completely 3 months after the injury [3]. Ellis reported that an 8-year old boy squeezed sap into his eye. Crystalline keratopathy also occurred in this case and resolved 2 months after the injury [2]. Ellis was able to reproduce clinical findings in rabbits. Severe conjunctivitis and corneal crystals developed within 24 hours. Crystals started disappearing on the fifth day. Complete clearing was noted after 4-8 weeks. Rabbit cornea revealed epithelial necrosis with acute inflammation involving stroma at histological examination. Corneal crystals have been identified as raphides of calcium oxalate which are found abundantly in the stems and leaves of the dieffenbachia [2].

Being such a habitual plant in our homes it is advised to be wise in its manipulation (in its convenient to use gloves when one has to cut a leaf) and it is very convenient to take it away from the reach of the small children to avoid some possible accident.

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Figure 1: Dieffenbachia Plant.

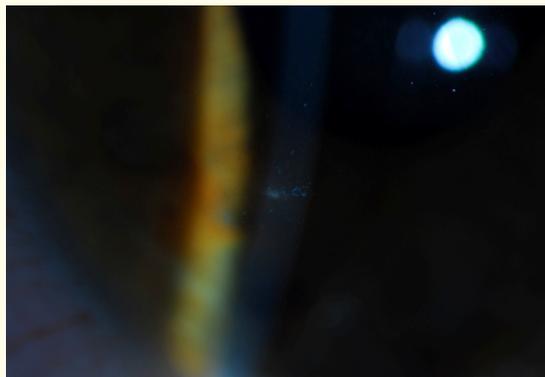


Figure 2: Fine refractile needle-like blue crystals on thr subepithelial region.

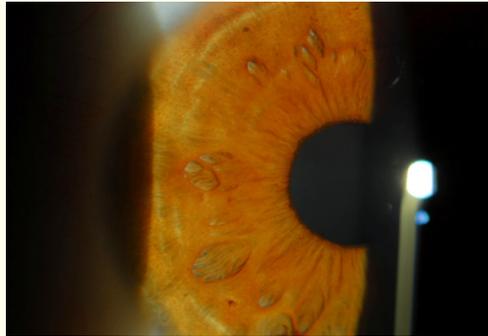


Figure 3: Corneal crystals disappeared slightly one month later.

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