

Case Report

Euphorbia Plant Induced Toxic Keratopathy

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Abstract

This case report illustrates the severe injury to eye secondary to accidental inoculation of latex content of Euphorbia plant. An 18 years old was given the task of trimming the hedge in the evening. During trimming, he accidentally traumatized his right eye with leaf sap. He reported to the emergency department few hours later with profound loss of vision. On examination, he had a large epithelial defect covering almost three-quarter of the cornea with signs of keratouveitis. After copious irrigation of his right eye, he was managed conservatively with regular follow up. After two weeks, his epithelial defect healed and the anterior chamber became quiet. This case highlights the importance of wearing protective wear during gardening, cutting trees. To the best of our knowledge, this is the youngest patient with such a large corneal defect almost covering the cornea secondary to euphorbia plant induced latex toxicity

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Introduction

Euphorbia is a very large and diverse genus of a flowering plant. Euphorbia umbellata species is a rather succulent, evergreen shrub or a small bushy tree that usually grows up to 5 metres tall, occasionally to 10 metres. It is also known as the African milk bush. The plant is harvested from the wild for local medicinal use. In India, sometime its leaves used against snake bites.¹ The milky sap causes a severe reaction to skin, eye and mouth. On the other side, Euphorbia species have curative properties also due to the presence of various phytochemicals, which constitute the secondary metabolites of these plants.^{2,3} We are reporting a case of severe keratouveitis secondary to milky latex of euphorbia umbellata species. The patient managed conservatively with good visual recovery.

Case Report

An 18 years old serving soldier presented to the emergency department with severe pain, diminution of vision and excessive watering from his right eye of 6 hours duration. Earlier, during shramdaan in the evening, he was tasked with trimming the hedge surrounding the wall of his unit, when he accidentally got injured by a plant twig (Euphorbia umbellata). He washed his eye immediately in running tap water for about a minute post trauma. Later in the evening, he reported to this hospital for further management. He had also got a sample of the plant for identification and photos of the bush (Figure 1). On examination, visual acuity in his right eye was hand movement close to face not improving with pinhole, left eye was 6/6 unaided. Right eye diffuse torch light examination



Figure 1: Plant Leaf of bush

showed mild lid oedema, severe conjunctival chemosis and circumciliary congestion. Cornea shows central epithelial defect measuring 8mm X 6 mm involving pupillary region with full thickness stromal oedema with Descemet's folds covering entire cornea (Figure 2). Anterior chamber showed 1+ cells. Pupil was sluggishly reacting to light. Media was hazy and fundus detail could not be visualized. Possibility

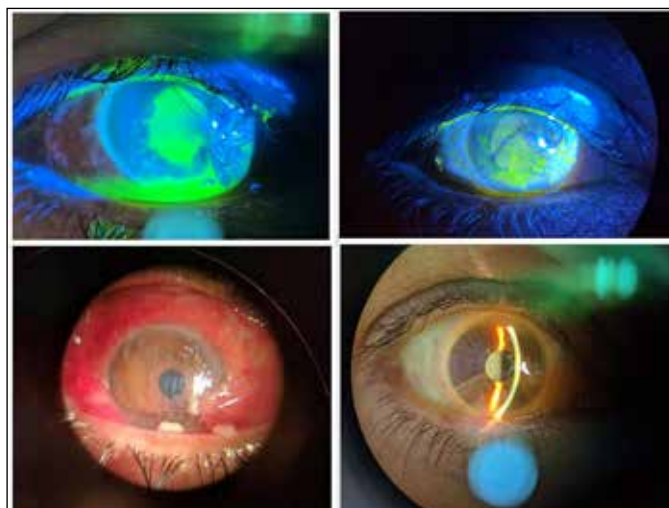


Figure 2: Large epithelial defect with gradual healing after treatment

of herpetic kerato-uveitis presenting as large geographical ulcer was also kept in mind. However, patient history and leaf sample pointed out it as a case of plant induced toxic keratopathy. He was diagnosed as a case of keratouveitis secondary to plant sap injury. The patient was managed with copious irrigation with balanced salt solution (500ml), followed by topical antibiotics (gatifloxacin 0.3% three

times a day), prednisolone acetate (1%) eye drops four times a day, homatropine 2% twice a day, preservative-free tear substitute six times a day. The Patient was observed every day on OPD basis. He gradually improved over two weeks. The corneal epithelium was gradually healed with no anterior chamber reaction and his vision was regained to 6/9 unaided (Figure 2).

Discussion

The euphorbia is a diverse plant and has 15000 species with world wide distribution mainly in a hot and humid climate. The ocular reaction varies from mild conjunctivitis to permanent blindness.^{4,5} Though there are few case reports in the literature, ocular changes and the severity of the ocular inflammation may vary with the species of the plant.⁶ Symptoms usually start immediately on contact with the milky latex. There is burning sensation, pain, photophobia and lacrimation. After a few hours patient notices a decrease in vision along with the above symptoms. A Severe corneal defect can be seen which may not resolve with medical treatment.^{7,8} The posterior segment is rarely involved.^{9,10} Chemical material in latex in the form of flavonoids, alkaloids, phenols, and sesquiterpene lactones can penetrate the entire cornea and may cause more toxicity in the anterior chamber. Corneal involvement also depends on the degree and length of exposure. Treatment after exposure to latex is irrigation and topical antibiotics depending on the degree of damage. Irrigation should continue until pH normalizes. Cycloplegics may be used if photophobia is present and topical steroids are used if there is evidence of anterior chamber inflammation. After primary management, these patients should be seen either in OPD or in wards daily to ensure that there is no permanent damage to the cornea.¹¹ With appropriate supportive therapy and close daily observation, the condition generally resolves completely within 10-15 days. In the presence of hypopyon, suspected bacterial infection corticosteroids can be started after infection and epithelial defect improves. Individuals working in cleaning, grass cutting should wear protective eye glasses.¹² Serious eye injuries can be avoided by simply wearing large goggles with proper fitting. To the best of our knowledge and MEDLINE search, this is the youngest patient with large corneal defect almost covering three quarter of cornea as a case of euphorbia induced toxic keratopathy.

Conclusion

This case study highlights the relatively unknown potential toxicity of a common plant. The clinical course may be affected by particular species of Euphorbia, the amount of sap exposure, the time between exposure and irrigation, and other host factors. Daily follow up is required. It is recommended to ask the patient to bring a sample of the plant and photos of bushes for better identification. It is also recommended that individuals working on garden, lawns, trimming of bushes should wear protective eyeglasses and to report nearest eye centre if they have direct exposure to latex of plants.

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