Ocular Injuries from Plant Sap in Army Soldiers

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Introduction

A cluster of 12 cases of ocular injuries caused by the milky latex from *Euphorbia tirucalli* occurring during an area clearing (grass cutting) operation in an army centre are reported. The initial symptoms of all patients were burning pain with subsequently blurred vision. Ocular symptoms developed within hours of the injuries in spite of washing done by the individuals at the site of incident. Supportive treatment resulted in a full recovery over the next few days without sequelae. Identification of excessive sap containing species of plants and wearing eye protection can significantly reduce eye injury and subsequent loss of man-days.

Case Report

A total of 12 patients including six on one single day, presented to this hospital with history of plant sap splash into the eye during grass cutting in the unit area. They complained of pain and stinging in the eyes, blurring of vision and irritation over the eyelids and face. Ocular examination revealed initial visual acuity ranging from 6/9 to 6/18. There was conjunctival congestion and blepharospasm. Slit lamp revealed superficial punctate keratopathy but no epithelial defects. Anterior chamber was clear. Pupils were normal in size and reaction. Lens and posterior segment were within normal limits. Non-contact tonometry revealed normal intraocular pressures.

Copious ocular irrigation was done under topical anaesthesia. A wire speculum was applied with the patients in recumbent position and 500 cc of ringer lactate was allowed to flow using a thick canula. Care was taken to irrigate all parts of the conjunctival sac and the fornices were swept with ear buds. Thereafter the patients were given an eye patch and treated with ciprofloxacin eye drops three times a day. Tablet ibuprofen three times a day was added for pain relief. The patients had to be taken off active duties for two days. Follow up evaluation after two days showed complete recovery. No sequelae were noted in the review examination after seven days. A visit to the unit premises revealed that plants of Euphorbeaceae species which had been planted

along the hedge, was also growing along with the wild grasses (Figs. 1, 2). The 'talwar' being used for grass cutting caused a massive spill of sap into the eyes of the person cutting the grass and often to the persons nearby. There was no protective eyewear being used by the personnel.

Discussion

Though there are more than 5000 plant species which contain sap, there have been instances of ocular injuries in humans resulting from accidental exposure to the genera of *Euphorbia* [1-4], *Dieffenbachia* [5], *Hippomane* [6], and *Asclepias* [7]. The toxicity is variable between and within genera and species. Some species have no apparent ill effects on the eyes, while the others may cause the same clinical picture with variable severity. The severity of ocular inflammation may be related to the species of plant, the concentration of sap into the eye and the duration of contact.

The components of the plant sap are not well-known, but the toxic constituents have been identified, including essential oil, alkaloids, amino acids, cyanogenic glycerides, cardioactive glycerides, furanocoumarins, plant acids, poly-acetylene compounds, proteins and peptides, saponins and terpenes.

Ocular symptoms, such as burning or stinging, pain, redness, photophobia and lacrimation, generally begin immediately on contact with the sap. Though many cases may be self-limiting without sequelae, the spectrum of ocular injuries due to plant sap splash vary from minimal discomfort to contact dermatitis, conjunctivitis, mild to severe keratitis, corneal ulceration, uveitis with hypopyon, corneal scarring, miosis and even blindness secondary to superimposed infection [1-3]. Our patients had received first aid at the incident site and were seen at the hospital within an hour and therefore serious sequelae were not encountered.

Area clearing and grass cutting operations are routinely carried out in armed forces campuses.

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Figs 1, 2 : Euphorbia as a hedge plant

Personnel of all trades participate in this unit activity without any specific skill being involved in the same. Certain ornamental or garden plant species, which contain an excessive amount of sap, are often found growing in the wild apart from where they are planted as hedges.

Eye injury and subsequent loss of man-days in this manner can be easily avoided by a simple intervention in the form of protective eyewear. In the present case the medical officer of the training centre was demonstrated the use of protective eye wear as shown (Fig. 3). The protective glasses cost Rs 50 and can be centrally procured and used by personnel engaged in grass cutting.

Conflicts of Interest

None identified

References

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Fig. 3 : Grass cutting worker wearing protective eye wear

Events Calendar

9-10th August 2008

CME on Family Mental Health

Venue: INHS Asvini, Colaba, Mumbai- 400 005

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