

Occult Occupational Ocular Exposure

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Background:

Ultraviolet (UV) light is electromagnetic radiation shorter in wavelength than visible light but longer than x-rays. UV radiation is subdivided into bands; UV-A (315 - 400 nm), UV-B (280 -315 nm), UV-C (100-280 nm). Sunlight at the Earth's surface is primarily UV-A and UV-B after attenuation by Earth's atmosphere. UV-C spectrum radiation is generated by arc welding, improperly shielded metal halide lights and germicidal UV applications.

Case Report:

Eighteen of 85 restaurant employees complained of ocular burning, irritation, dry eyes, pruritus and an associated facial rash. The symptoms affected employees working over a two-day period. Managers, wait staff and kitchen staff all reported symptoms. The face and upper body were primarily affected to varying degrees. There were no respiratory complaints. Two employees visited a local emergency department and one was diagnosed with "chemical burn/irritation of cornea." The poison center, the local health department, appliance/supply and service vendors, and the pesticide company were contacted along with other state agencies.

Investigation of the metal halide light bulbs present in the restaurant's fly light traps by a licensed electrical contractor did not reveal any damage and were reportedly in good working order. The following day, that electrician noticed skin burns around the area of his UV protective eyewear. Upon further inspection, UVC spectrum germicidal light bulbs instead of standard UV replacement bulbs had been inadvertently shipped by the supplier and installed in the fly light traps.

Case Discussion:

UV radiation-induced photokeratitis is an injury with a delayed presentation with symptoms beginning 2-12 hours after exposure. The presentation can mimic widespread toxin exposure. Affected individuals are expected to make a full recovery from acute symptoms. However, increased lifetime carcinogenic risk is difficult to quantify.

Conclusion:

UVC radiation injury should be considered in the differential for groups of patients with simultaneous development of dermal and eye symptoms. Exposure to UVC radiation may not always be apparent and careful history taking and a coordinated effort may be required to identify the etiology in a timely fashion.