Photokeratitis following the manipulation of aquaria disinfection lamps

UVC radiation (100–280 nm) at the earth’s surface is usually encountered during welding or with germicidal lamps. The corneal epithelium absorbs UVC and the main acute clinical effect appears as photokeratitis, typically appearing within 12 h of exposure.

We report a cluster of six patients (from five independent incidents) presenting with photokeratitis to the same ophthalmic emergency department within a 6 month period, all with bilateral photophobia, gritty and watery eyes. All six men had been exposed to UVC radiation while replacing or cleaning low-pressure mercury vapour lamps of domestic koi fish aquaria within the previous 24 h and had developed symptoms before attendance. Slit lamp examination of all six men revealed corneal punctate epithelial erosions. The six patients were treated with lubricants and discharged with advice to return if the symptoms did not improve.

UVC radiation is used in the destruction of micro-organisms. The lamps generate high dose rates at a wavelength close to the absorption maximum of DNA (~260 nm), producing a germicidal effect.1 In recent years, outbreaks of photokeratitis or UV burns following exposure to ultraviolet radiation from broken mercury vapour lamps have been reported.2 These injuries are preventable and in the USA, the Food and Drug Administration (FDA) has prescribed performance standards for lamp operation.3 Despite these measures, mass photokeratitis and UV burns remain a public health issue. No similar standards have been set in the UK on lamp operation,4 and, although an EU directive does impose a minimum requirement on employers to assess and reduce risks of optical radiation exposure of workers, these regulations apply only in the workplace.5 Photokeratitis is an operational hazard when working with germicidal lamps used in aquaria. Exposure in every case was unintentional and was compound p because human eyes cannot detect UVC radiation and because of the time lapse before symptoms appeared. A specific history should be sought in patients presenting with punctate epithelial erosions as they may be unaware of the underlying cause and not volunteer this information.

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listed our references, we start with the author of first reference and put it in the search window of PubMed, which then lists the indexed publications of that author in chronological order. Searching by the names of more than one author of the particular reference limits the number of search results and makes the job of finding the relevant reference easier. After the reference has been found, it is selected by clicking the small rectangular box next to the reference. Next, we click on the “send to” icon and select the “text” option. This provides the details of the reference in a text format, which can then be saved in a separate document file (we use Microsoft Word software).

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Medico-legal consideration of gastric lavage in acutely intoxicated patients

Gastric lavage is now known to be ineffective, unnecessary or hazardous in some circumstances where it used to be performed as a routine. Adverse effects are more likely to occur when gastric lavage is performed forcefully without the patient’s cooperation.1 There was little clinical evidence in support of gastric lavage improving prognosis in an acutely intoxicated state.1,2 In South Korea, there was the case of a patient who ingested organophosphate insecticide in an attempt at suicide and refused lavage. The physician did not perform gastric lavage on the patient and decided to transfer the patient to a higher level medical facility. However, the patient’s symptoms worsened and death resulted from organophosphate intoxication. The Supreme Court concluded that the physician was liable for the death of the patient and decided that, although the patient did not show decreased mental capacity at the hospital in his express refusal and uncooperative attitude, gastric lavage should have been attempted with the use of a physical or chemical restraint.

From the medicolegal aspect, even though a patient attempts suicide, the patient legally has the right to refuse any treatment, and the physician can respect the patient’s refusal. When adverse effects occur as a result of gastric lavage performed forcefully without a patient’s consent, if the medical evidence based on the effect of gastric lavage is unclear, the physician can be held liable. However, in this case, as the Korean Supreme Court observed, the physician should have forcefully performed gastric lavage if it was a matter of life or death for the patient. Hence the doctor was held to be negligent in failing to perform an act which he/she had a duty to perform.

As already mentioned, gastric lavage, with or without informed consent, performed negligently and which results in harm could, of course, give rise to a claim in negligence.

In summary, a physician can be held responsible for any damage that occurs as a result of the failure to perform a medical procedure vital to the patient. And he/she also can be sued for death or any clinical deterioration resulting from the lack of treatment or from ineffective treatment.

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