An outbreak of Diffuse Lamellar Keratitis related to improper drainage of an air conditioner

Purpose:

Five patients in the middle of a list of eleven patients were noted to have Diffuse Lamellar Keratitis (DLK) the day following surgery. Three patients had minimal inflammation, but two patients had moderate central involvement with delayed return to normal visual function. An investigation was undertaken to identify and correct the cause of the outbreak.

Methods:

The outbreak occurred in a satellite laser surgery center during the first week of July 2008 when outside humidity and temperatures were above normal. As the same equipment, staff, reusables, medications and solutions were in use in our main surgery center, the major focus was on air quality.

Results:

The staff was asked to identify any unusual factors the day of the outbreak. The pre-op nurse, with a history of allergies, developed an unusually persistent cough that in retrospect occurred when surgery was being done on the affected patients. Another staff member remembered a “rotten egg” odor from the air ducts. During an inspection of the cooling systems a very strong odor came from the suspected air duct when the air conditioner turned on. The offending unit appeared normal with no evidence of leakage. Internal inspection after the unit was removed showed rusting of the drainage pan consistent with a unit being mounted with an improper reverse slant of about one inch causing pooling of water. A new air conditioner was installed, and no additional cases have occurred.

Conclusion:

These findings are consistent with faulty drainage of an air conditioner causing DLK.