BRIEF REPORTS

Corneal Ulcer Associated With Contamination of Aerosol Saline Spray Tip

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PURPOSE: **To report a complication of aerosol saline use in a contact lens wearer.**

METHODS: **Case report. A 57-year-old woman who used soft contact lenses on an extended-wear basis developed a unilateral *Pseudomonas* corneal ulcer associated with the use of preservative-free aerosol saline.**

RESULTS: **The solution inside the aerosol can was free of microbial contamination. The spray tip, however, was contaminated with *P aeruginosa*.**

CONCLUSIONS: **Aerosol spray cans may minimize contamination of the solution inside the can. The spray tip is still susceptible to microbial contamination, especially with continued use of the solution over an extended period of time.**

AEROSOL SPRAY CANS WERE DEVELOPED, IN PART, TO provide a delivery system that would minimize the risk of microbial contamination of preservative-free saline used in contact lens care systems. By providing a positive pressure system, reflux of any contaminated solution back into the main cavity of the aerosol can is minimized. As demonstrated in this case report, the spray tip is still susceptible to contamination.

A 57-year-old woman was initially examined for a corneal ulcer of the right eye. She had used soft contact lenses on an extended-wear basis for many years without complications. She removed and disinfected her lenses weekly and, before insertion, she rinsed them with preservative-free saline from an aerosol spray can. She always bought the largest size, which lasted many months. Her current condition started when her eye became irritated from sand at the beach. She was not wearing her contact lenses at the time.

Later that day, although her right eye was still irritated, she resumed wearing her contact lenses, irrigating them with saline from her aerosol spray can before insertion. The can had been first used at least 4 months earlier. The next day she noted pain, redness, and decreased vision in the right eye. She sought treatment 2 days later because of her deteriorating ocular condition.

Examination disclosed a visual acuity of RE, hand motions and a central corneal ulcer with thinning. She was treated with topical fortified tobramycin and cefazolin eyedrops every hour for 5 days. During the next 2 weeks, the medication was slowly tapered, and the corneal ulcer on the right eye healed with a residual central scar. Later, she underwent corneal transplant to restore vision. Pretreatment corneal cultures grew *Pseudomonas aeruginosa*.

The preservative-free aerosol saline was cultured, and it also grew *P aeruginosa*. Additional cultures were obtained from the spray can. First, the spray was maintained for 10 seconds continuously. Immediately thereafter, the spray was reinitiated, and a culture of the solution and the spray tip were taken to determine whether the tip was flushed clean. Next, the can was punctured and the solution inside cultured. The tip and the solution sprayed from the can both grew *P aeruginosa*, but the solution inside the can was sterile.

Microbial contamination of contact lens care systems is well documented and can often be the source of the infecting organism in microbial keratitis.[1-5] Our patient had a breach of the corneal epithelium that predisposed her to infection from *Pseudomonas* contained in the contaminated spray tip of her aerosol saline. The labels on preservative-free aerosol spray cans warn of the risk of contamination, stress proper

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handling, and suggest discharging solution before each use. But once contamination occurs, flushing may be ineffective in eliminating contamination. To minimize the risk of contamination and subsequent infection, the aerosol can should be discarded within a reasonable time after the first use or if there is any reason to suspect contamination. This applies especially to extended-wear contact lens users, whose aerosol saline cans may last for many months. Additionally, the expiration date on our patient's aerosol can was given as 15 months from the time of purchase. This may mislead those who purchase such spray into thinking that the aerosol can will be free of contamination until the date of expiration. Improved labeling could help eliminate such confusion and improve proper and safe usage.

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Microsporidial Keratoconjunctivitis in a Patient Without Human Immunodeficiency Virus Infection

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PURPOSE: To describe a case of microsporidial keratoconjunctivitis in a patient without human immunodeficiency virus (HIV) infection.

METHODS: Case report. An epithelial corneal scraping from a woman with chronic bilateral keratoconjunctivitis was evaluated by Giemsa stain.

RESULTS: Giemsa stain of an epithelial corneal scraping disclosed intracellular and extracellular spores characteristic of microsporidia. An HIV enzyme-linked immunosorbent assay (ELISA) test was negative. The signs and symptoms of the bilateral keratoconjunctivitis resolved after treatment with albendazole.

CONCLUSION: Microsporidia may cause a chronic epithelial keratoconjunctivitis in the absence of HIV infection.

MICROSPORIDIA ARE SPORE-FORMING, OBLIGATE INtracellular protozoa of the phylum Microspora. The organisms are ubiquitous and parasitize both invertebrates and vertebrates. In humans, microsporidia are opportunistic pathogens that cause intestinal, ocular, sinus, pulmonary, muscular, and renal disease primarily in immunocompromised patients.

Ocular microsporidiosis has two distinct clinical manifestations: deep corneal stromal infection in immunocompetent patients and chronic keratoconjunctivitis in patients with acquired immunodeficiency syndrome (AIDS).[1] We report a patient with microsporidial keratoconjunctivitis in the absence of human immunodeficiency virus (HIV) infection.

A 35-year-old woman described 3 months of bilateral blurred vision, ocular discomfort, redness, and photophobia. The patient's medical history was notable for severe asthma and recurrent *Pseudomonas* pneumonia. Her medical regimen included chronic bronchodilator inhaler therapy and oral prednisone, 20 mg per day.

Best-corrected visual acuity was RE, 20/100 and LE, 20/40. Tear function tests without ocular anesthesia using Schirmer strips disclosed greater than 30 mm of wetting in both eyes at 5 minutes. Tear break-up time was instantaneous in both eyes. Slit-lamp examination showed a bilateral papillary conjunctivitis and superficial keratitis characterized by diffuse, punctate fluorescein staining in a vortex pattern. The interpalpebral cornea and bulbar con-

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