Corneal Erosions and Encephalopathy Following Exposure to "Rhino-Caps"

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INTRODUCTION

"Rhino-Caps" (Vimedia, Amsterdam) is a nonprescription preparation used as an inhalation therapy for relief of nasal congestion. A similar preparation called Vick's Vapor Rub (Richardson) is sold in the United States. Each "Rhino-Caps" capsule contains camphor 25 mg, eucalyptol 125 mg, menthol 55 mg, terpineol 120 mg, and chlorothymol 5 mg as a preservative. The recommended use is by inhalation of the vapors produced by emptying the contents of the capsule on cushions or handkerchiefs, or in boiling water. Although no side effects were reported previously with this particular formulation, the product is not recommended for children under 2 years of age.

In this case report, we report on keratitis and encephalopathy following exposure to "Rhino-Caps" in an infant.

CASE REPORT

A 4-month-old baby girl, born at term after a normal pregnancy and delivery, was brought to medical attention with a 2-day history of fever up to 38°C, nasal congestion, and bilateral eye irritation. One hour earlier, she was laid supine on a pillow absorbed with "Rhino-Caps," but the parents denied direct contact with the eyes.

Physical examination showed bilateral corneal erosions, conjunctivitis, and a burn of the temporal conjunctiva. Other than nasal congestion, the results of the examination were normal and she had no fever.

The baby was treated with eye washings using NaCl 0.9% and local application of 5% chloramphenicol eye ointment, 0.2% chloramphenicol with 2500 U/mL polymyxin B eye drops, and 1 mg dexamethasone-21-phosphate with 5 mg neomycin sulfate eye drops. Twelve hours after the initial episode, the parents noticed that the baby had a weak cry and became lethargic. Since no spontaneous improvement was noted for 4 hours of observation, she was referred for admission.

Upon physical examination, the baby was somnolent and hypotonic. Marked head lag was present but the remaining neurological findings were normal and the ophthalmologic findings remained unchanged. Complete blood cell count and routine SMA tests were normal. The child became alert within 8 hours of observation and the corneal erosions recovered completely within 2 days.

DISCUSSION

Although no adverse reactions were reported with "Rhino-Caps" formulation, the side effects of the individual components, particularly camphor, menthol, and eucalyptol are long recognized. Poisoning by camphor usually occurs when camphor oil is mistaken for castor oil. The symptoms may include: nausea, vomiting, colic, headache, dizziness, delirium, muscle twitching, depression of the central nervous system (CNS), coma, and death.1,2 Camphor is also known to produce superficial keratitis with loss of corneal epithelium.2,3

Symptoms of poisoning with eucalyptus oil include burning, nausea, vomiting, dizziness, weakness, miosis, and feeling of suffocation. Delirium and convulsions may occur and death was recorded with doses as low as 3.5 mL.4,5 Eucalyptol is a local irritant and conjunctivitis, photophobia, and keratitis were reported after eye contact with "sting eye" (which contains camphor and eucalyptol).2

Menthol may give rise to hypersensitivity reactions including contact dermatitis, apnea, and instant collapse, but no ocular side effects were reported.3

Both camphor and eucalyptol can induce a chemical epithelial keratitis and CNS symptoms.5-7 In our patient, it is not clear if these symptoms resulted from direct eye contact or from inhalation of fumes. Since these medications are used only for symptomatic relief and in view of the potential toxicity of the various components, the pediatric use of these medications is strongly discouraged.

REFERENCES


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