

Ocular injuries from head lice shampoos based on mineral oils in combination with detergents, a consecutive case series

Hofer KE, Kupferschmidt H, Rauber-Lüthy C

National Poisons Centre Tox Info Suisse, Associated Institute of the University of Zurich, Zurich, Switzerland



Objectives

Due to health concerns related to insecticide-based pediculicides and development of resistance, there is growing demand for head lice treatments with a physical mode of action. These shampoos may contain mineral oils or enzymes, which are destroying the insect exoskeleton. Eye irritation and corneal abrasion have been described after contact to a shampoo containing peppermint oil, detergents, glycerol, and protease enzymes, and the enzymes were the presumed causative agents [Ref.]. The aim of this study was to investigate ocular injuries associated with lice shampoos which contain only mineral oils and detergents.

Methods

A retrospective review of ocular exposures in humans with lice shampoos based on mineral oils combined with detergents reported to our poisons centre between June 2012 and July 2017 with good evidence of exposure and high causality. The severity of observed symptoms was graded according to the Poisoning Severity Score.

Results

- 15 patients, 4 adults (mean age: 38y, range 30-49) and 11 children (mean age: 5.9y, range 1.9-13.2) were included.
- Minor effects in 8 cases and moderate effects in 7 cases
- Reported ocular signs and symptoms in the 15 patients consisted of eye irritation (n=6), conjunctivitis (5), ocular pain (5) lid swelling (4), red eyes (3), blepharospasm (2), epiphora (2), foreign body sensation (2), visual disturbance (2), and photophobia (1). Four patients presented with corneal abrasion, 3 of them after prompt eye irrigation. (Tab.)
- Eye reactions occurred immediately in all patients, and were more than transient, even in the case of early irrigation with water (n=12).
- Most patients (n=13) presented with delay to the medical examination (range 2.5 -16 h, mean 7), and the poisons centre was never contacted immediately after the exposure (n=15) .
- Medical treatment involved repeated eye irrigation (n=9), artificial tears (3), antibiotic eye drops (3), Vit-A cream (2), paracetamol (1), corticosteroids (1).
- No sequelae has been reported.

Conclusions

This case series highlights the risk of ocular injuries from lice shampoo based on a mixture of mineral oil and detergents. Although the mechanism of action remains unclear, this special mixture might lead to a stronger adherence of the chemicals to the eye surface. Therefore, it is essential to increase consumer knowledge about possible hazards of these shampoos and the need of prompt and copious eye irrigation with water.

Table: Ocular exposure with lice shampoos based on mineral oils and detergents: Patient characteristics, ocular effects and treatment

Case	Age(y); Gender	Ocular effects at examination	Irrigation at home	Latency to exam
1	1.9; m	Red eyes; epiphora	yes	12 h
2	3.7; m	Eye irritation, photophobia	yes	12 h
3	4.5; f	Red and burning eyes, lid swelling	yes	8 h
4	8; m	Red eyes, visual disturbance	unknown	unknown
5	8.4; m	Eye irritation, conjunctivitis	yes	16 h
6	9.8; m	Lid swelling, pain, visual disturbance conjunctivitis	yes	5 h
7	30; f	Eye irritation, pain, visual disturbance	yes	8 h
8	36; f	Conjunctivitis, foreign body sensation, visual disturbance	yes	12 h
9	2.2; m	Lid swelling, conjunctivitis blepharospasm, pain	yes	12 h
10	2.8; m	Blepharospasm, lid swelling	no	2.5 h
11	5.9; m	Pain, conjunctivitis, corneal abrasion	yes	7 h
12	10.4; m	Eye irritation, conjunctivitis, pain	yes	3 h
13	13.2; m	Corneal abrasion, pain	no	4 h
14	40; f	Epiphora, eye irritation corneal abrasion	yes	0.5 h
15	49; f	Burning eyes, foreign body sensation, corneal abrasion	yes	3 h

Cases 1-8: minor effects
Cases 9-15: moderate effects



Source: <https://theviralgadgets.com/products/baby-shower-cap>