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Allergic Contact Dermatitis Caused by Both Eucalyptus Oil and Spruce Oil

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Authors' contributions

This work was carried out in collaboration between all authors. Author DK wrote the draft of the manuscript. Author LK managed the literature searches. Authors SLC and MB designed the figures, managed literature searches and contributed to the correction of the draft. Authors DK and LK provided the case, the figures and supervised the work. All authors read and approved the final manuscript.

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Case Study

ABSTRACT

Infantum cold® (Sedomed İlaç Pazarlama-Konya-Turkey) is an inhalant ointment that helps to relieve nasal congestion due to upper respiratory tract infections. It contains only eucalyptus oil and spruce oil. Although many reports present allergic contact dermatitis (ACD) due to eucalyptus oil and spruce oil separately there are no cases caused by both oil. We present a case of a pediatric patient who developed an ACD secondary to application of Infantum cold®. We believe that ACD due to eucalyptus oil and spruce oil might be more common than currently described in the literature. We encourage others to test with eucalyptus oil and spruce oil if there is clinical indication.

Keywords: Allergic contact dermatitis; adverse drug reactions; eucalyptus oil; spruce oil.

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1. INTRODUCTION

Allergic contact dermatitis (ACD) is one of the two types of contact dermatitis, that is, it represents the manifestations of an allergic response caused by contact with a substance, the other type being irritant contact dermatitis. It represents an eczematous pathology, wherein a specific exogenous allergen triggers an inflammatory response through the mechanism of delayed hypersensitivity.

Infantum cold® (Sedomed İlaç Pazarlama-Konya-Turkey) is an inhalant ointment that helps to relieve nasal congestion due to upper respiratory tract infections. Nowadays it is prescribed frequently to children for the reason that it's not a systemic treatment. It contains only eucalyptus oil and spruce oil. It is applied on the sweat collaret.

Although many reports present allergic contact dermatitis (ACD) due to eucalyptus oil [1-7] and spruce oil [8] separately there are no cases caused by both oil. We present a case of a pediatric patient who developed an ACD secondary to application of Infantum cold®.

2. CASE

A 8 year-old girl presented with a 3 day history of erythematous lesions on her neck. Her history showed that these lesions appeared 1 day after the use of an inhalant ointment. She was not taking any other medication. She had been applying it every night on her pyjamas' collarets. On dermatological examination, dusky red colored, nummular patch of 6 cm diameter was present on her neck and a similar but smaller nummule of 4 cm diameter on her right upper clavicular area. Her examination revealed sharp bordered erythematous macular lesion on her neck and upper chest (Fig. 1). Patch testing was performed with the European baseline series from Chemotechnique Diagnostics (Malmö, Sweden). Finn Chambers® (8 mm; SmartPractice®, Phoenix, AZ, USA) on Scanpor® tape (Norgesplaster A/S, Vennessla, Norway) were used. The spruce oil was purchased commercially as 100%, and diluted to 5% in pet. by a pharmacist.

The occlusion period was 48 hours. The initial reading was half an hour after the removal of the patches. A second reading was performed at day D4 according to the ICDRG guidelines. No

reactions were seen to the European baseline series components. A ++ reaction was noted with the spruce oil and +++ reaction with the eucalyptus oil. Both eucalyptus and spruce oils were tested in the same way in 3 healthy controls, with negative results.



Fig. 1. Sharp bordered erythematous macular lesion on her neck and upper chest

3. DISCUSSION

During the recent years, inhaler ointments have become popular and are widely available in Turkey. Most of the ointments contain eucalyptus and spruce oils. Rudzki et al. [1] reported multiple sensitivity to essential oils used in cosmetics for the first time in 1976. Nowadays essential oils in cosmetics causing allergic contact dermatitis are well known. Contact dermatitis from eucalyptus oil has been well documented. It is present in the fruits, leaves, bark, and buds of eucalyptus trees [5]. Four cases of contact dermatitis caused by eucalyptus plant [6], Vicks VapoRub [7] or aromatherapy [4,8] with eucalyptus have been reported on PubMed. But we didn't find any report about allergic contact dermatitis due to spruce oil but only one case of occupational allergic contact dermatitis due to spruce sawdust [9].

Our case was categorized as definite Causality assessment of suspected adverse drug reactions (ADRs) using Naranjo's Scale, and the severity of the reaction was mild upon Hartwig Scale. On the basis of the Modified Schumock and Thornton Scales the reaction of the suspected ADRs was probably preventable [10-12].

We believe that ACD due to eucalyptus oil and spruce oil might be more common than currently described in the literature. We encourage others to test with eucalyptus oil and spruce oil if there is clinical indication.

4. CONCLUSION

Infantum cold® is an inhalant ointment contains ingredients only eucalyptus oil and spruce oil which are potential sensitizing agents. Contact dermatitis from eucalyptus oil has been well documented. However, this is the first case of ACD due to both eucalyptus and spruce oil.

CONSENT

All authors declare that 'written informed consent was obtained from the patient's parents for publication of this paper and accompanying images.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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