

## CONTACT POINT

# Allergic contact dermatitis from glycyrrhetic acid contained in a cream for palpebral eczema

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Glycyrrhetic acid is a component with anti-inflammatory properties increasingly used in cosmetics and medical devices.<sup>1,2</sup> We here describe a case of allergic contact dermatitis from glycyrrhetic acid contained in a cream for palpebral eczema.

## CASE REPORT

A 9-year-old girl with a personal history of mild atopic dermatitis and allergic asthma was referred to our clinic for an episode of acute eczema on both eyelids after applying Dexyane Med Palpebral® (Ducray, Laboratories Pierre Fabre, France) for 12 days, an emollient cream and medical device indicated for the treatment of eyelid eczema (Figure 1). The episode was treated in the emergency department with oral corticosteroids and discontinuation of the cream, with complete resolution of the symptoms. The patient subsequently performed a repeated open application test the cream which became positive after 2 days.

Patch tests were performed in accordance with the criteria of the International Contact Dermatitis Research Group with the Spanish baseline series and the cream 'as is'. Test preparations were supplied by Chemotechnique and the allergens were applied on the upper back in Finn Chambers on Scanpor tape and occluded for 2 days. We obtained positive reactions to potassium dichromate (++), cobalt chloride (++) and the cream 'as is' (++) . Subsequently, we performed patch tests with the 19 individual components of the eyelid emollient supplied by the manufacturer. The concentrations of these ingredients were the ones used to formulate the cream. Only a positive reaction to glycyrrhetic acid (10% pet.; ++) was observed on Day (D)2 and D4.



**FIGURE 1** Acute eczema on both eyelids after application of Dexyane Med Palpebral, a cream to treat palpebral eczema, containing glycyrrhetic acid.

**TABLE 1** Literature review: Case reports of allergic contact dermatitis from glycyrrhetic acid.

| First author, year of publication    | Clinical manifestations/agent involved                                                                                                                                                                                                       | Patch tests results                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fernández et al., 1992 <sup>5</sup>  | A 62-year-old male, acute eczema of the skin surrounding a tracheostomy after treatment with Pentalmicina® ointment (glycyrrhetic acid 1.5%; mafenide 7%; neomycin 0.35%; sulfanilamide 3%)                                                  | Pentalmicina® (Lab. Cederroth, Spain) +++ at D2<br>Glycyrrhetic acid (10% pet.) +++ at D4<br>Mafenide (10% pet.) +++ at D4                                                                                                                                                                                                                                                                                                                                                |
| Tanaka et al., 2001 <sup>6</sup>     | A 43-year-old man, perianal eruption after applying Rec HA ointment (glycyrrhetic acid 0.7%; ethyl aminobenzoate 0.25%; procaine hydrochloride 1%; allantoin 0.8%; I-menthol 0.2%; zinc oxide 20%; Wakunaga, Japan)                          | Rec HA ointment (as is, and 10%) and glycyrrhetic acid (10% pet.) both ++ at D3<br>Ethyl aminobenzoate (1% pet.) and procaine hydrochloride (1% pet.) + at D3                                                                                                                                                                                                                                                                                                             |
| Oiso et al., 2006 <sup>7</sup>       | A 7-year-old girl, known with atopic dermatitis, and acute eczema on the bilateral cubital fossa, where she had applied an over-the-counter ointment containing glycyrrhetic acid                                                            | Glycyrrhetic acid (1% pet.) + at D2                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Sasseville et al., 2011 <sup>1</sup> | A 19-year-old woman, eczematous lesions involving the lips, axillae, and face. The patient had used two lip balms (Labello® NIVEA and Lipolèvres), a deodorant (Vichy Déodorant), and an after-sun moisturizing cream (Lancôme Après Soleil) | Glycyrrhetic acid 0.02% aq./alc. and 0.2% aq./alc + at D4; an ingredient common to Lait Après Soleil (Lancôme, Paris, France) and to Déodorant Peau Très Sensible (Laboratoires Vichy, Vichy, France)<br><i>Ricinus communis</i> seed oil 5% liq. par. and 100% ++ at D4, ingredient present in Labello® NIVEA Med Protection Lip Balm (Beiersdorf AG, Hamburg, Germany) and Lipolèvres lip protector (La Roche-Posay Laboratoire Dermatologique, La Roche-Posay, France) |
| This case report                     | A 9-year-old girl, acute eczema on both eyelids after applying Dexyane Med Palpebral (Ducray, Laboratories Pierre Fabre)                                                                                                                     | Glycyrrhetic acid (10% pet.) ++ at D2 and D4                                                                                                                                                                                                                                                                                                                                                                                                                              |

Abbreviations: aq./alc., 50% aqua + 50% alcohol; liq. par., liquid paraffin.

## DISCUSSION

Glycyrrhetic acid or enoxolone is a compound derived from the hydrolysis of glycyrrhizic acid (glycyrrhizin), which is considered one of the main components of licorice root, a plant of the Glycyrrhiceae family.<sup>3</sup> Due to its steroid-like chemical structure, it possesses anti-inflammatory activity, as well as antibacterial, antiviral and antifungal activities.<sup>1,2</sup> In addition, in a mouse model of allergic contact dermatitis, glycyrrhetic acid showed weak inhibitory activity.<sup>4</sup>

Allergic contact dermatitis caused by glycyrrhetic acid appears to be extremely rare, with only four cases previously reported (Table 1).<sup>1,5–7</sup> Two of these patients,<sup>1,7</sup> as in this case, were young women who had used the product as an adjuvant treatment for eczema. Like most of the cases reported, patch testing glycyrrhetic acid at a concentration of 10% in pet. seems feasible. On the other hand, in three of the patients there was additional sensitization to various other components of the culprit creams,<sup>1,5,6</sup> although this did not occur in our case.

Given its apparent popularity in both cosmetics and medical devices, it might be anticipated that its increased use might lead to more cases of allergic contact dermatitis in the future.

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obtained from the patient's parents to allow publication of patient images.

## CONFLICT OF INTEREST

The authors declare no conflict of interests.

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## REFERENCES

1. Sasseville D, Desjardins M, Almutawa F. Allergic contact dermatitis caused by glycyrrhetic acid and castor oil. *Contact Dermatitis*. 2011; 64(3):168–169.
2. Nakamura T, Nishibu A, Yoshida N, et al. Glycyrrhetic acid inhibits contact hypersensitivity induced by trichophytin via dectin-1. *Exp Dermatol*. 2016;25(4):299–304.
3. Cabrita SF, Silva R, Correia MP. Allergic contact dermatitis due to glycyrrhizic acid as an ingredient of a hair restorer. *Contact Dermatitis*. 2003;49(1):42.
4. Park HY, Park SH, Yoon HK, Han MJKD. Anti-allergic activity of 18beta-glycyrrhetic acid-3-O-beta-D-glucuronide. *Arch Pharm Res*. 2004;27(1):57–60.

5. Fernández JC, Gamboa P, Jauregui I, González G, Antepara I. Concomitant sensitization to enoxolona and mafenide in a topical medicament. *Contact Dermatitis*. 1992;27:262.
6. Tanaka S, Otsuki T, Matsumoto Y, Ritsuko H, Sugiura M. Allergic contact dermatitis from enoxolone. *Contact Dermatitis*. 2001;44:192.
7. Oiso N, Tomoko O, Yoshinaga E, Endo H, Kawara S, Kawada A. Allergic contact dermatitis mimicking atopic dermatitis due to enoxolone in a topical medicament. *Contact Dermatitis*. 2006; 54:351.

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