

BRIEF REPORT

Allergic contact dermatitis to *Myroxylon pereirae* (Balsam of Peru) in papaw ointment causing cheilitis

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ABSTRACT

Two patients presented with cheilitis and perioral dermatitis. Patch testing revealed positive reactions to both *Myroxylon pereirae* (MP; formerly known as Balsam of Peru) and Lucas Papaw Ointment (LPO; Lucas Papaw Remedies, Brisbane, Qld, Australia). MP was not listed as an ingredient in LPO, however the manufacturer confirmed that a small amount of MP was present in LPO and we believe this to be the cause of the patients' dermatitis.

Key words: allergy, detective, lip balm, pawpaw, perioral, rash, sensitization, skin.

INTRODUCTION

Two patients presented with cheilitis and perioral dermatitis. Patch testing revealed positive reactions to both *Myroxylon pereirae* (MP; formerly known as Balsam of Peru) and Lucas Papaw Ointment (LPO). MP was not listed as an ingredient in LPO. However the manufacturer confirmed that a small amount of MP was present in LPO and we believe this to be the cause of the patients' dermatitis.

MAIN TEXT

A 9-year-old schoolgirl presented with a 5-year history of cheilitis and perioral dermatitis. She had a history of atopic eczema, but there was no family history of atopy. She was patch tested to our extended European standard series of allergens, cheilitis series, and other allergens thought possibly relevant including dust mite, and her own samples, diluted where necessary. Patch testing was performed using Finn Chambers on Scanpor Tape (Epitest OY, Tuusula,

Finland) applied to the patient's back for 48 hours. Readings were performed at 48 and 96 hours. She reacted to fragrance mix 1 (3+), fragrance mix 2 (+), colophony (3+), *Myroxylon pereirae* (MP) (3+), house dust mite (+), Barbie ADD fragrance (+) and LPO (3+). Her mother was contacted 3 months after the patch test. She reported that while her daughter still suffered from eczema, her cheilitis and perioral dermatitis was much improved.

A 34-year-old woman, who used to work in retail communications but was on Workcover leave for stress at the time of review, presented with a 6-month history of cheilitis, complicated by *staphylococcus aureus* infection. Her dermatologist suspected the diagnosis of granulomatous cheilitis. She was commenced on minocycline and metronidazole and referred to the Oral Mucosa Clinic at our institution, which she did not attend, and to the Contact Dermatitis Clinic.

On review, it was noted that she had a history of eczema and hayfever, with a family history of atopy. Her current medications were levonorgestrel/ethinyl estradiol (oral contraceptive pill), fluoxetine, minocycline, metronidazole and methylprednisolone aceponate ointment. She was patch tested to our extended European standard patch test series, cosmetic series, cheilitis series, dental series as she was noted to have amalgam fillings, toothpaste series, corticosteroid series and her own samples with tests removed after 48 hours. Readings were performed at 48 and 96 hours. She reacted to MP (+), nutmeg (+) and LPO (+). No relevance was found for the nutmeg reaction, although nutmeg is known to be an ingredient of Vicks VapoRub (Procter & Gamble, M/S Makson Industries Pty Ltd, India.). She was contacted 10 months after patch test and reported that her cheilitis has resolved since she stopped using Lucas Papaw ointment.

Given the coincidence of two patients reacting to both MP and LPO, the Contact Dermatitis Clinic dermatologist (MT) contacted the manufacturer of LPO, who confirmed that there was a small amount of MP in LPO. Other ingredients

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Abbreviations:

LPO	Lucas Papaw Ointment
MP	<i>Myroxylon pereirae</i>

of LPO were fermented papaya extract, potassium sorbate and petrolatum. We did not have potassium sorbate for testing. Sorbic acid, which is chemically related, is a very rare allergen.¹

We have investigated our clinic experience with MP. A total of 5646 patients has been tested with MP in the Occupational Dermatology Clinic from 1993 to 2010 and in the Contact Dermatitis Clinic, 2000–10. There have been 500 positive reactions. Of these 142 reactions were found to be relevant, based on the history of relevant exposure to MP. Three hundred and fifty-eight reactions were of unknown or past relevance. It is sometimes difficult to find definite relevance of reactions to MP, and this is reflected in its lower rate of relevance when compared to many other common allergens (unpublished data).

CONCLUSION

LPO is a widely available, greasy topical preparation made from papaya extract in a petroleum jelly base, and commonly used as a lip balm. It is also used for minor burns, cuts, nappy rash, sunburn, rash and scalds.⁵ With its predominant active ingredient being fermented papaya extract, it is largely perceived as being 'natural'. In addition, its formulation in an ointment base lessens its requirement for preservatives, many of which are well known to cause allergic reactions.²

MP, on the contrary, is a relatively common allergen. It is a sticky aromatic liquid that comes from cutting the bark of the tree *Myroxylon balsamum*, which is native to El Salvador. MP smells of cinnamon and vanilla, as it contains 60–70% cinnamein (a combination of cinnamic acid, cinnamyl cinnamate, benzyl benzoate, benzoic acid and vanillin). It also contains essential oils similar to those of citrus peel. All these are potential allergens.

MP is typically found in perfumes, medicaments and flavorings,² with the commonest cause of reaction being perfumes. MP itself is no longer added to cosmetic or fragrance products because of concern regarding allergies, but some of the chemicals in it are found in other commonly used perfumed products. Any perfumes, particularly 'spice' type scents, may contain cinnamates or clove with MP present.

Medicaments include cough mixes and lozenges, dental preparations (some toothpaste), Anusol ointment or suppositories (Johnson & Johnson, Ultimo, NSW, Australia), Ayrtons chilblain ointment (McGloins, Bella Vista, NSW, Australia), antiseptics and antifungals, some nappy powders and creams and Tincture of benzoin.

Flavourings including food and spices may contain MP, from both artificial and natural food sources. These include citrus peel, baked goods, some teas and alcoholic drinks. Rarely, patients may develop systemic contact dermatitis from ingestion of MP-containing foods.²

The inclusion of MP in Lucas Papaw Ointment has not been previously reported, and may account for some of our unexplained reactions to MP in the past. We wish to alert our colleagues to the possibility of this important allergic reaction, which may have contributed to unexplained dermatitis for 5 years in our first patient. Once again, it emphasizes the rewarding, time consuming detective work necessary in the investigation of contact dermatitis, which can be very satisfying for both patients and doctors alike.

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