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Lip plumper contact urticaria

Elnaz F. Firoz, BA,^a Joshua M. Levin, MD,^b Rachael D. Hartman, MD,^c and William D. James, MD^d
New York, New York, and Allentown and Philadelphia, Pennsylvania

Lip plumpers are relatively new topical agents on the market that are designed to increase lip volume minutes to days after application. In this report, we describe a case of lip plumper contact urticaria in a young boy. We also discuss the mechanisms of action of lip plumpers and the sociocultural reasons for their use. (*J Am Acad Dermatol* 2009;60:861-3.)

A 3-year-old male patient with a medical history of hypoplastic left heart syndrome received an orthotopic cardiac transplant. Two weeks after surgery, he developed an urticarial plaque of rapid onset on the right cheek, prompting an urgent consultation. He had not been taking an angiotensin converting enzyme inhibitor and otherwise felt well. Further history revealed that the patient's mother had kissed him on the right cheek while posing for a photograph moments before the lesion developed. She had applied "Too Faced Lip

Injection" lip plumper (Too Faced Cosmetics, Inc, Irvine, CA) to her lips two hours earlier.

On physical examination, the young boy was afebrile and his skin lesion had resolved after 15 mg of intravenous Benadryl (Pfizer Inc, Morris Plains, NJ). To reproduce the reaction, a small amount of lip plumper was applied to the mother's cheek. Immediately after application of the product, she experienced a tingling sensation followed by the formation of an urticarial plaque (Fig 1) similar to the patient's lesion.

The active ingredients of the lip plumper include benzyl nicotinate and capsicum frutescens resin.

From the Columbia College of Physicians and Surgeons,^a New York; Advanced Dermatology Associates, Ltd,^b Allentown; and the Departments of Dermatology at New York University^c and the University of Pennsylvania,^d Philadelphia.

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Reprint requests: William D. James, MD, Department of Dermatology, University of Pennsylvania, 3600 Spruce St, Philadelphia, PA 19104. E-mail: William.James@uphs.upenn.edu.

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DISCUSSION

Lip plumpers are cosmetic agents intended to create the appearance of increased lip volume. The mechanisms by which lip plumpers act are varied, and include vasodilation secondary to either irritant contact dermatitis or nonimmunologic contact urticaria. Common ingredients of lip plumpers are the essential oils of cinnamon and cayenne pepper (*capsicum frutescens*), spices that are classified as both irritants and urticariants.^{1,2} In irritant contact



Fig 1. Formation of an urticarial plaque minutes after application of a lip plumper to the cheek.

dermatitis, vasodilation occurs after nociceptors trigger the release of substance P.^{3,4} In nonimmunologic contact urticaria, vasodilation most likely occurs secondary to prostaglandin metabolism.^{5,6} Although irritant contact dermatitis is the most common reaction noted to spices,¹ nonimmunologic contact urticaria is the most frequent immediate contact reaction⁶ and clinically may mimic irritant contact dermatitis.

Lip plumpers may also achieve vasodilation through compounds that have direct vasodilatory effects, such as benzyl nicotinate, also known as niacin or vitamin B₃, and L-arginine, an amino acid that is converted to nitric oxide, a potent vasodilator.⁷

In addition to direct vasodilation, nonimmunologic contact urticaria, and irritant contact dermatitis, skin hydration is another mechanism by which lip plumpers cause the appearance of increased lip volume. Collagen, a high molecular weight humectant, binds water in the stratum corneum and increases the degree of skin humidity.⁸ Collagen microparticles of the marine sponge are commonly found in lip plumpers. Moreover, the glycyl-L-histidyl-L-lysine tripeptide has been studied by wound care researchers and found to enhance the expression of extracellular matrix macromolecules, such as collagen and glycosaminoglycans, upon subcutaneous injection in rats.⁹ This tripeptide has been introduced recently into skin care products, including lip plumpers. Small in vivo human studies investigating products with tri- and oligopeptides have failed to detect significant effects on wrinkles, overall skin quality, or lip volume.^{10,11}

Lip plumpers have become increasingly popular in recent years. Between 2001 and 2006, the \$9.9 billion lip products market experienced a 287% increase in sales of “other” lip products, largely because of lip plumpers.¹² Since 2000, plastic

surgeons have experienced an 81% increase in the number of minimally invasive cosmetic procedures and a 3% decrease in the number of surgical cosmetic procedures.¹³ The second-most popular minimally invasive cosmetic procedure behind botulinum toxin injection is the injection of hyaluronic acid, which can be used to increase lip volume. These data demonstrate the strong desire for alternatives to invasive procedures and the increase in demand for cosmetic products and procedures.

Studies have shown that lip volume is associated with beauty and youth. In photographic studies of the female soft tissue profile as presented in fashion magazines during the 20th century, models have displayed greater lip fullness and anterior position in recent years,^{14,15} possibly reflecting the recent increase in racial diversity in the fashion industry.¹⁶ Upon analyzing models with respect to ethnicity and race, white models displayed fuller lips than their nonmodel counterparts, whereas models of African descent displayed lips as full as their nonmodel counterparts.¹⁷ Fashion magazines, therefore, may promote the idea that full lips are beautiful, even lips that are not representative of one's ethnic group. Finally, the soft tissue profile flattens with age,¹⁸ which may explain why full lips are thought to convey youthfulness.

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Significant response after treatment with the mTOR inhibitor sirolimus in combination with carboplatin and paclitaxel in metastatic melanoma patients

Friedegund Meier, MD,^a Emmanuella Guenova, MD,^a Stephan Clasen, MD,^b Thomas Eigentler, MD,^a Andrea Forschner, MD,^a Ulrike Leiter, MD,^a Christina Zielinski, MD,^a Björn Knautd, MD,^a Claus Garbe, MD,^a and Mark Berneburg, MD^a
Tuebingen, Germany

Melanoma is highly resistant to chemotherapy. In melanoma, the PI3K-AKT-mTOR signaling pathway is constitutively activated through multiple mechanisms. Several experimental studies suggest that targeting the PI3K-AKT-mTOR signaling pathway is a promising strategy to overcome chemoresistance. This is the first report describing a chemosensitizing effect of mTOR inhibition in patients with melanoma. We report two cases of patients with metastatic melanoma who showed significant remission after combination of carboplatin and paclitaxel with the mTOR inhibitor sirolimus. Our case report, together with the literature discussed, suggests that mTOR inhibition possibly enhances the sensitivity of melanoma cells to chemotherapy and should prompt in-depth and clinical investigation. (*J Am Acad Dermatol* 2009;60:863-8.)

We describe two cases of patients with metastatic melanoma who showed significant remission after combination of carboplatin and paclitaxel with the mTOR inhibitor sirolimus.

CASE 1

A 26-year-old woman presented with a melanoma on the right calf, which was removed in November 2000. The histologic examination showed a superficial spreading melanoma with a tumor thickness of 0.75 mm that lacked ulceration, regression, or numerous mitoses. A follow-up excision with a safety margin of at least 1 cm was carried out. In September 2005 a palpable lymph node metastasis noted by the patient was excised from the right inguinal region, followed by radical inguinal lymph node dissection. The pathology results showed 5 tumor-free lymph nodes. Adjuvant immunotherapy was instituted with low-dose interferon alfa. In March 2007, a whole-body computed tomographic (CT) scan carried out for melanoma follow-up evaluation detected new lung, mediastinal, and hilar lymph node, liver,

From the Division of Dermatologic Oncology, Department of Dermatology,^a and the Department of Diagnostic Radiology,^b University of Tuebingen.

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Reprint requests: Friedegund Meier, MD, Division of Dermatologic Oncology, Department of Dermatology, University of Tuebingen, Liebermeisterstr. 25, D-72076 Tuebingen, Germany. E-mail: friedegund.meier@med.uni-tuebingen.de.

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