

Allergic contact dermatitis to a perfume containing lyral

To the Editor: A 76-year-old female was referred to the division of dermatology for patch testing for investigation of an intensely pruritic chronic dermatitis of the neck and face that had been present for several years. Topical corticosteroids and topical tacrolimus provided minimal relief. Systemic corticosteroids provided significant relief, but the dermatitis returned immediately following discontinuation of the medication. A physical examination revealed ill-defined dermatitis of the face and neck, with the most severe area localized to the anterior surface of the neck (Fig 1).

Based on the history and review of her personal care products, she was patch tested with a modified North American Contact Dermatitis Group standard tray, personal care products expanded tray, and an expanded fragrance tray. A reading was done at 120 hours and revealed 2 to 3+ reactions to fragrance mix 2 and lyral 5% pet (Fig 2). All other fragrance allergens were negative.

On review of her products, the perfume she had been using for several years, Glow by JLo (Sweetface Fashion LLC, New York, NY) listed hydroxyisohexyl 3-cyclohexene carboxaldehyde as an ingredient, which was noted to be synonymous with lyral (International Flavors & Fragrances, Inc, New York, NY). The patient had been applying this perfume to the anterior surface of her neck on a daily basis for the past several years.

Hydroxyisohexyl 3-cyclohexene carboxaldehyde (lyral) is a fragrance ingredient that is a well-known cause of allergic contact dermatitis and is commonly used in consumer products. Allergy to lyral can be detected by testing with fragrance mix II or by testing with lyral as an individual allergen. Of key importance, allergy to lyral is not detected by the standard fragrance mix or by Balsam of Peru allergens present on the TRUE Test (Mekos Laboratories A/S, Hillerød, Denmark).

Products that are particularly likely to contain lyral are fine fragrances and deodorants.¹ Studies performed in Europe and in the United States have clearly demonstrated that adding lyral or fragrance mix II to patch test panels used for patients with suspected fragrance allergy will identify some individuals with fragrance allergy who are not diagnosed with the standard fragrance allergens.^{2,3} The European study found that 4% of patients reacted to fragrance mix II and that nearly half of these patients did not react to the standard fragrance mix.² The US study found that 0.4% of patients reacted to lyral.³



Fig 1. Dermatitis on the anterior and lateral surfaces of the patient's neck.



Fig 2. The 2 to 3+ reaction to lyral at 120 hours.

Clinicians must be aware that the standard fragrance allergens present in the TRUE test will not detect a significant number of cases of fragrance allergy. Lyral is a common fragrance ingredient and the prevalence of allergy to this chemical may increase in coming years if it continues to be found in products in widespread use. Dermatologists should give strong consideration to referring patients with suspected allergic contact dermatitis to fragrances to patch testing centers that have the capability to perform detailed testing.

Matthew J. Zirwas, MD, and Mark Bechtel, MD

Division of Dermatology, The Ohio State University

Funding sources: None.

Conflicts of interest: None identified.

Reprint requests: Matthew J. Zirwas, MD, 5965 E Broad St, Ste 290, Columbus, OH 43213

E-mail: Matt.zirwas@osumc.edu

REFERENCES

1. Militello G, James W. Lyral: a fragrance allergen. *Dermatitis* 2005;16:41-4.
2. Frosch PJ, Pirker C, Rastogi SC, Andersen KE, Bruze M, Svedman C, et al. Patch testing with a new fragrance mix detects

additional patients sensitive to perfumes and missed by the current fragrance mix. Contact Dermatitis 2005;52:207-15.

3. Belsito DV, Fowler JF, Sasseville D, Marks JG, DeLeo VA, Storrs FJ. Delayed-type hypersensitivity to fragrance materials in a select North American population. Dermatitis 2006;17:23-8.

doi:10.1016/j.jaad.2006.12.030

Henoch-Schönlein purpura associated with *Proteus mirabilis* urinary tract infection

To the Editor: A 47-year-old woman presented with hematochezia and fatigue. She reported that she had 4 bowel motions that were dark red in color without mucus. Three weeks before presentation she noticed a rash that began on her lower limbs (including the soles), was ascending in nature, and eventually involved her trunk, buttocks, upper limbs, and palms. Arthralgias, dysuria, and frequency accompanied the skin manifestations. A skin biopsy performed elsewhere showed leukocytoclastic vasculitis but immunofluorescence was not performed. The patient was not taking any medication before the development of the rash. She had been taking a tapering dose of methylprednisolone since and was generally well, except for continuing dysuria and frequency.

On examination, her blood pressure was normal but she was tachycardic (114/min) and tachypneic (20/min) with oxygen saturation levels on air of 95%. Her temperature was 37.3°C. Numerous 1- to 2-mm purpuric papules distributed over her abdomen, upper and lower limbs, and buttocks were evident (Fig 1). Her abdomen was exquisitely tender in all quadrants with a degree of rebound tenderness. On rectal examination dark red blood was present. The rest of the physical examination revealed normal findings.

Significant leukocytosis (34000/mm³) was present, as were mildly elevated urea levels (56 mg/dL). Urine dipstick was positive for blood (++) , leukocytes (++) , and albumin (+). On urine microscopy there were 70 leukocytes and 5 erythrocytes per high-power optical field, but there were no casts. With a working diagnosis of gastrointestinal involvement as a result of her small-vessel vasculitis, intravenous methylprednisolone was started (1 mg/kg/d). Empirically intravenous piperacillin-tazobactam and teicoplanin were commenced, because of the severity of the abdominal symptoms with possible bacterial translocation, and the symptoms from the urogenital system and pyuria.

She underwent colonoscopy with no obvious cause of her bleeding. Her clinical condition improved and she was up and about on the fourth day of hospitalization. *Proteus mirabilis* was isolated



Fig 1. Purpuric papules distributed over patient's abdomen.

from urine culture ($>10^5$ /mL); based on antibiotic susceptibility results, ciprofloxacin intravenously substituted the initial antibiotic regimen. Blood cultures and a pharyngeal culture produced negative results. Computed tomography of the chest and abdomen revealed normal findings. Nephrolithiasis and obstructive pathology was ruled out after a normal abdominal ultrasound result. Transesophageal echocardiogram and serum protein immunoelectrophoresis revealed normal findings. No autoantibodies were detected. A 24-hour urine protein estimation showed 453 mg of protein. A repeated skin biopsy was performed to evaluate additionally the pattern of immunofluorescence; it disclosed IgA depositions in the walls of small skin vessels that were more pronounced in the dermis. Three months after the initial presentation the patient was doing well on methylprednisolone and azathioprine by mouth.

Henoch-Schönlein purpura is a leukocytoclastic vasculitis, usually presenting in childhood.¹ The main differential diagnosis of Henoch-Schönlein purpura is infectious purpura fulminans.^{2,3} The deposition of IgA in various organs (skin, kidneys, gastrointestinal tract, and joints) in patients with Henoch-Schönlein purpura may lead to systemic manifestations. Henoch-Schönlein purpura is usually idiopathic, but various triggers have been reported such as infections (either viral or bacterial) and drugs. Various infections have been associated with Henoch-Schönlein purpura (Table I). Urinary tract infections are rarely associated with the ignition of the cascade leading to the development of the manifestations of Henoch-Schönlein disease.⁴ Our case suggests that urinary tract infection caused by *P mirabilis* may trigger Henoch-Schönlein purpura.

Petros I. Rafailidis, MD, MRCP UK, MSc,^{a,b}
Anastasios Kapaskelis, MD,^{a,b} and Matthew E.
Falagas, MD, MSc, DSc^{a,b,c}