

## Erythroderma due to Unwitting Exposure to an Unobvious Allergen Source

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### DISCUSSION

A 53-year-old woman who worked as a forklift driver presented with fissured and erosive dermatitis confined to both palms and volar wrists that had worsened for several months (Fig. 1). Patch tests to 3 Chemotechnique allergen series (North American Contact Dermatitis Group 80, Acrylates, and Plants) were positive only to Amerchol L101. Despite treatment with topical clobetasol and avoidance of skin care products containing lanolin, her condition worsened and progressed to erythroderma, for which she was hospitalized and treated with oral prednisone and mycophenolate mofetil. During her recovery, we uncovered lanolin to be a component of the wax used to lubricate the leather covering the steering wheel on her forklift at work. Changing the lubricant to one without lanolin led to complete resolution of her eruption.

Our case highlights 3 clinical lessons. First, the distribution of the eruption was restricted to the palms and volar wrists, with no involvement of the dorsal surface. In the setting of her occupational history, this distribution should have made us think of sources for lanolin beyond her skin care products. Second, such less-obvious sources include lanolin as a polish for leather in furniture and shoes and, in our case, for the leather covering the steering wheel of her forklift at work. In this capacity, lanolin is employed to enhance pliability and water resistance of leather. Even less well-known is lanolin's use to coat metal surfaces to prevent corrosion and its addition to inks to prevent crystallization. A final lesson is that contact allergy can rarely cause erythroderma, in which most cases were associated with patch test positivity to nickel, *Myroxolon pereirae*, and Compositae.<sup>1</sup> Our patient's persistent exposure to lanolin via eroded and fissured palmar skin was the likely predisposing factor to erythroderma.

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**Figure 1.** Chronic dermatitis of the palms and volar wrists.

Lanolin is a well-recognized contact allergen with positive patch test rates in North America ranging between 4.3% and 4.6% in adults and between 5.1% and 5.5% in children.<sup>2,3</sup> The alcohol fraction, rather than esters or acids, within lanolin is thought to be its most allergenic component.<sup>4,5</sup> However, lanolin (or wool) alcohol has been supplanted increasingly by Amerchol L101 as the patch test allergen. Amerchol L101 combines lanolin alcohols, mineral oil, cholesterol, and sterols in a concentrated absorption base.<sup>3</sup> Its use has improved the sensitivity of screening<sup>4</sup> and has been shown to yield higher relevance rates than lanolin (or wool) alcohol alone.<sup>5</sup>

### PEARL

A probing history is a key to identifying the relevant allergen source in cases of allergic dermatitis restricted to the palms and volar wrists.

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