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# Glove-related hand urticaria

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## SHORT CASE REPORT

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**A nurse with skin problems related to the use of gloves in the workplace had been tested for allergic contact dermatitis, but with negative results. Further examination**

## **led to suspicion of a condition which is probably underdiagnosed and which is an important differential diagnosis of contact dermatitis.**

A newly qualified nurse in her twenties was referred to an occupational medicine clinic on account of skin problems, which had begun shortly after she started wearing disposable gloves regularly in clinical practice and during work connected with her nursing studies. She described immediate-onset erythematous eruption with a burning sensation on the dorsal hands shortly after removing disposable gloves, which resolved spontaneously within a few minutes. The discomfort occurred after wearing any type of gloves at work and irrespective of the duration of wear. She had atopic eczema as a child, but had no known allergies.

As a nursing student she was examined by a dermatologist. Epicutaneous patch testing with standard series was performed. This ruled out allergy to the rubber additives in disposable gloves. An analysis for latex-specific IgE was negative. Short-term treatment with the high-dose second-generation antihistamine desloratadine, one tablet four times daily was ineffective.

Skin prick tests for latex and other materials found in gloves were negative. A test for dermographism was performed by stroking the skin of the upper back with a wooden spatula. The test induced immediate-onset erythema, which was visible after 20 minutes. The patient experienced no discomfort during the test. A comparison of different types of gloves revealed that she had no subjective discomfort while wearing them. When she took off the gloves, she developed erythema on the dorsal aspect of her hand (Figure 1). The patient described a burning sensation from the areas with erythema. A comparison of tight- versus loose-fitting gloves showed that symptoms were milder and resolved more quickly with the loose-fitting gloves (see video).



**Figure 1** Patient's hand before (a) and after (b) wearing a glove. An urticarial reaction occurred shortly after the glove was removed.

Glove-related hand urticaria was suspected ([1, 2](#)). The patient again attempted treatment with a high-dose second-generation antihistamine (cetirizine), two tablets twice daily. She had dry skin on her hands and was therefore advised to use a barrier cream with a high lipid content (70 %) and a cream with a moisturising component (carbamide).

The patient experienced no improvement with the use of antihistamines, but reported that regular use of the creams had some effect.

As there is a theoretical risk that recurrent urticaria may lead to chronic eczema, she was advised to wear loose-fitting gloves at work to try to avoid triggering urticaria outbreaks. Her condition was recognised as an occupational disease. She is currently performing duties that require limited use of gloves. The condition is likely to limit her ability to work in areas requiring more frequent glove use in the future.

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## Discussion

Glove-related hand urticaria is also referred to as localised dermographism [\(2\)](#), as it is symptomatic dermographism confined to the hands [\(3\)](#). Symptomatic dermographism is the most common form of physical urticaria, which is a subtype of chronic inducible urticaria [\(4\)](#).

The prevalence of dermographism in the general population is estimated at around 5 % [\(4\)](#). In common with other forms of symptomatic dermographism, glove-related hand urticaria appears to be more common in women [\(5\)](#). Chronic urticaria affects the quality of life and working life of patients. The condition places a substantial burden on society and the healthcare system owing to its high prevalence, long duration and resistance to treatment [\(6\)](#).

The condition is caused by pressure resulting from friction due to the repeated application and removal of gloves and/or by physical pressure on the skin from the gloves themselves [\(2, 7\)](#).

It has mainly been observed in healthcare professionals who frequently wear disposable gloves at work. The onset of symptoms may follow a switch to close-fitting gloves in the workplace (7). Nitrile gloves can cause more symptoms, as they are often less flexible than latex gloves (5, 7).

Glove-related hand urticaria should be suspected in patients who experience immediate urticarial dermatitis when using any type of disposable gloves and who test negative for allergies to latex and rubber additives. The diagnosis is made on the basis of a detailed medical history, a positive test for dermographism and exclusion of allergy (3, 5, 7). Symptoms can be reproduced by using tight-fitting gloves and improved by using looser-fitting gloves (2, 7).

Treatment consists of switching to loose-fitting gloves, exercising caution when applying and removing gloves, and prophylactic use of second-generation antihistamines if required (5, 7).

Glove-related hand urticaria is probably underdiagnosed and is an important differential diagnosis of contact dermatitis.

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*The patient has consented to the publication of this article. The article has been peer-reviewed.*

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