

Short Communication

Contact dermatitis from cetyl pyridinium chloride in latex surgical gloves

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Surgical and household gloves, both latex and non-latex, all contain potential allergens (1). Cetyl pyridinium chloride (CPC), found in Biogel® latex gloves, has been reported to cause allergic contact dermatitis (2).

Materials, Methods and Results

28 surgical nurses, with suspected contact dermatitis from gloves, were patch tested with the European standard series and samples of 6 different surgical gloves (Surgikos®, Gammex®, Medett®, Triflex®, Elastyren® and Biogel®). 9 of the nurses had atopic dermatitis and a total of 12 were atopics (atopic dermatitis, allergic rhinoconjunctivitis or asthma). Patch tests were read at D3. 8 had positive (+/++/+++) reactions to nickel sulfate, 4 to fragrance mix and cobalt chloride, 2 to formaldehyde and 1 to potassium dichromate and colophony. None reacted to thiuram mix, PPD black rubber mix or mercapto mix. 12 had 1 or more positive (+/++) or uncertain (?+) reactions to glove samples. Tests were performed with both the inside and the outside of the gloves against the skin. There were no reactions to the Gammex® or Triflex® gloves, and to the Surgikos® and Elastyren® gloves only 1 uncertain reaction. 1 person had a + reaction and another a ?+ reaction to the Medett® glove. 9 had either a + or a ?+ reaction to the Biogel® latex glove.

Further investigations with this glove were performed. Glove samples, manufactured with and without CPC, were kindly provided by Regent Medical.

6 months after the 1st test procedure, 8 nurses with possible contact reactions to Biogel® latex gloves were patch tested double-blind with these samples, and the original tests with Biogel® repeated. The results are shown in Table 1. None were positive to glove samples without CPC, while 3 were positive to either one or both sides of the glove when CPC was present. Among the 9 with suspected allergic contact reactions to the Biogel® latex glove, there were 2 atopics. None of the 3 with verified positive reactions were atopic.

Latex contact urticaria was suspected from the history in 4 cases, but latex prick and use tests (3) were negative.

Discussion

CPC is one of the quaternary ammonium compounds, commonly used antimicrobials in cosmetics, topical antiseptics and disinfectants. Depending on their concentration, irritancy can occur. Their sensitizing potential is considered to be low. Benzalkonium chloride, used as a disinfectant preoperatively and for surgical instruments, is the best-known allergen among them. Cross-reactions have been reported (4). It can be difficult to discriminate between allergic and irritant patch test reactions to glove materials, but our reactions were interpreted as allergic. Only 2 out of 9 nurses with suspected reactions to the Biogel® latex glove, and none of the 3 with verified contact reactions, were atopic, while there were 10 atopics among the 19 nurses who did not show any such reaction, lending some additional support to

Table 1. Patch test results with Biogel® samples read at D3

Test persons	Biogel® as is (1st test)		Biogel® with CPC		Biogel® without CPC		Biogel® as is (2nd test)	
	inside of glove	outside of glove	inside of glove	outside of glove	inside of glove	outside of glove	inside of glove	outside of glove
1	+	+	+	+	—	—	++	+
2	?+	?+	?+	—	—	—	?+	—
3	?+	?+	—	—	—	—	?+	?+
4	+	—	—	—	—	—	—	—
5	+	?+	+	?+	—	—	+	+
6	++	++	?+	—	—	—	+	+
7	++	++	++	++	?+	?+	++	++
8	?+	—	—	—	—	—	—	—

our claim. If our results are reliable, replacement or reduction of the concentration of CPC should be considered.

A high incidence of latex contact urticaria has been reported among hospital workers with hand eczema, especially in surgical operating units (5). This was probably not the case in this particular department.

References

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