

CONTACT POINT

Allergic contact dermatitis secondary to the use of a bandage impregnated with benzalkonium chloride

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Benzalkonium chloride is a quaternary ammonium compound used as preservative in personal care products, including cosmetics, deodorants, mouthwashes, ophthalmic solutions, and nasal sprays. In the healthcare industry, it is found in antibacterial soaps, hand sanitizers, and cleaning solutions for surfaces and surgical instruments.¹ It is a well-known irritant and a rare contact allergen.² Cetrimonium chloride is a quaternary ammonium compound that may cross-react with benzalkonium chloride.¹

CASE REPORT

A 30-year-old female developed a well-demarcated, rectangular area of pruritic dermatitis (Figure 1A) that persisted on her left shin for 2 weeks following treatment of an insect bite with an antibacterial bandage. The dermatitis was accentuated centrally where the non-adherent portion of the bandage contacted her shin. She denied use of other first-aid products, including topical antibiotics.

The patient was patch tested with the North American Contact Dermatitis Group screening series in addition to preservatives,

emulsifiers, personal care products, and adhesives series. Clinically relevant positive reactions included strong (++) reactions to benzalkonium chloride 0.1% aq. and cetrimonium chloride 0.05% aq. (Figure 1B,C); adhesive allergens gave negative results. Inspection of the antibacterial bandage packaging showed that the non-adherent portion was impregnated with benzalkonium chloride. No other antibacterial ingredients were present in the bandage.

DISCUSSION

Benzalkonium chloride is a common preservative; 74% of ophthalmic solutions on the EU market contain benzalkonium chloride,³ and 20% of personal care products in the SkinSAFE database contain benzalkonium chloride or a potentially cross-reacting quaternary ammonium compound.¹

We present this case to raise awareness of bandages as potential sources of this rare contact allergen. Although common wound medication allergens in the United States are not available over the counter in Europe (eg, neomycin and bacitracin), several companies in both

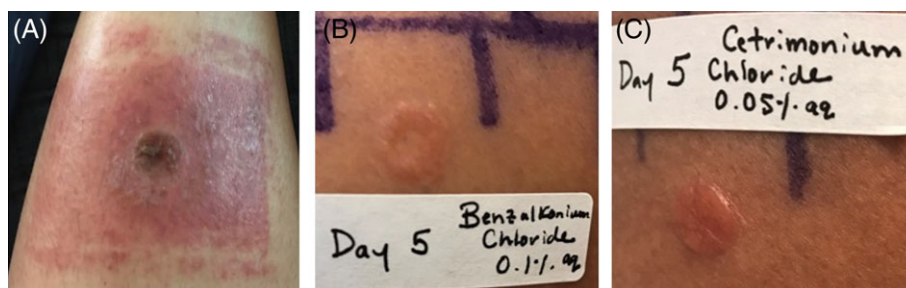


FIGURE 1 (A), Dermatitis on the left anterior shin. (B), Strong (++) patch test reaction to benzalkonium chloride on day 5. (C), Strong (++) reaction to cetrimonium chloride on day 5

areas of the world manufacture benzalkonium chloride-containing antibacterial bandages, including: Care Band, Curad, CVS, Equate, Top Care, Up & Up, Urgo, and Walgreens. Additionally, benzalkonium chloride is found in Hansaplast Wound Spray. We report this case to emphasize the importance of inspecting all patient contactants, including non-traditional products such as bandages and other first-aid products.

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Conflict of interest

The authors declare no potential conflict of interests.

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