

containing 4% hydroquinone as the active component. After she applied this agent for 3 consecutive nights, erythema and swelling occurred on her face. The erythema and swelling resolved within 1 week after she stopped using Shines cream. However, when she applied the same bleaching cream again, diffuse erythema with itching papules recurred and persisted for 3 weeks. Patch testing to Shines cream (as is) showed positive reactions at day (D) 3 and D5. She was further patch tested with the ingredients of Shines cream. Patch test reactions were (++) at D2 and D4 for sodium metabisulfite in 2% aqua (aq.) 5% aq., 2% pet., and 5% pet.; patch testing with sodium lauryl sulfate in 0.1% aq., 0.5% aq., 1% aq., and 0.5% pet. showed irritant reaction at D2 but negative at D4, while the other 8 ingredients were all negative. The relevant patch test results led to the diagnosis of allergic contact dermatitis to sodium metabisulfite in a bleaching cream.

Discussion

Sodium metabisulfite, $\text{Na}_2\text{S}_2\text{O}_5$, is a moderately strong reducing agent and an antioxidant. The major usage includes food and beverage industry, pharmaceutical preparations, cosmetics preparations, and photography (1). Sodium metabisulfite is generally considered safe. However, adverse reactions to sulfite in foods and pharmaceuticals, including anaphylactic shock, asthmatic attacks, urticaria and angioedema, nausea, abdominal pain, diarrhea, seizures, and death, have been reported (2). A relevant contact allergy to sodium metabisulfite is not often encountered. But there have been reports of occupational contact dermatitis in a salad maker (3), baker (1), pastry factory worker (4), and photographic technician (5). Allergic contact dermatitis to sodium metabisulfite has been described in topical medications, including ketoconazole (6), corticosteroids (7–9), antihemorrhoidal creams (10), and local anesthetics (11). Our patient developed allergic contact dermatitis to sodium metabisulfite in a bleaching cream, which has not been reported previously. According to the pharmaceutical factory, sodium metabisulfite is used in very low concentration in Shines cream as an antioxidant to promote

the stability of the hydroquinone composition.

The ideal test concentration for sodium metabisulfite has yet to be determined (8). Previous studies had used several different concentrations and vehicles of sodium metabisulfite for patch testing, including 0.1%, 2%, 5%, and 10% aq., as well as 1%, 2%, and 5% pet. (1, 3–5, 8–10). Although higher concentrations (10% and 20% aq.) of sodium metabisulfite may be too high and might produce false-positive reactions, a control study had showed that the patch testing of 5% pet. sodium metabisulfite would produce only mild erythema at D2 but not at D4 (8), indicating that concentrations less than 5% would be suitable for patch testing for sodium metabisulfite.

The major component of Shines cream is hydroquinone (40 mg/g). Hydroquinone inhibits the conversion of dopa to melanin by inhibiting the activity of tyrosinase, increases the degradation of melanosomes, and inhibits the DNA and RNA synthesis of melanocytes and is used for chloasma treatment (12). The most common problems caused by hydroquinone are irritant dermatitis, leukoderma, ochronosis-like pigmentation, and postinflammatory hyperpigmentation. However, allergic contact dermatitis caused by hydroquinone contained in therapeutic creams is extremely rare (13). It is thus worthwhile to perform the patch tests for all the ingredients to identify the contact allergens if contact dermatitis occurs after using a hydroquinone cream.

Allergic contact dermatitis due to sodium metabisulfite in a bleaching cream

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Key words: allergic contact dermatitis; bleaching cream; hydroquinone; sodium metabisulfite.

Case Report

A 52-year-old woman presented with chloasma on bilateral zygomatic areas for several years. She was prescribed with a bleaching cream, Shines[®],

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