

pigmented contact cheilitis is not common. Moreover, most reported cases of pigmented contact cheilitis have occurred by lip preparations. Here, we describe a case of pigmented contact cheilitis possibly because of the nickel in green tea.

Case Report

A 40-year-old non-atopic woman was referred with a 3-year history of pruritic swelling and darkening of her lower lip (Fig. 1). There was no improvement with a variety of different topical agents. There was no recent change in lip exposures. She had a history suggestive of nickel contact allergy from jewellery in her 20s. A detailed history showed that the patient had been drinking 10 or more cups of green tea everyday for several years; her symptoms developed several months after she started drinking the green tea. A lip biopsy specimen showed a mild perivascular lymphohistiocytic infiltration and increased melanophages in the upper dermis (Fig. 2).

The patient was patch tested with the Korean baseline series and her own cosmetic preparations [Finn Chambers® (Epitest, Helsinki, Finland) on Scanpor® (Alpharma, Norway) tape]. Readings were according to ICDRG criteria. The only positive reaction to nickel sulfate was: D2(+) and D4(++).

Green tea is known to contain large amounts of nickel; therefore, a nickel allergy was suspected as the cause of the pigmented contact dermatitis. The patient was advised to discontinue drinking green tea and, as a result, all symptoms resolved in a few weeks and the pigmentation on the lower lip faded over 1 year.

Pigmented contact cheilitis: from green tea?

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Pigmented contact dermatitis can occur on any site of the body; however,



Fig. 1. Several mildly pruritic, ill-defined dark brownish macules on the lower lip.

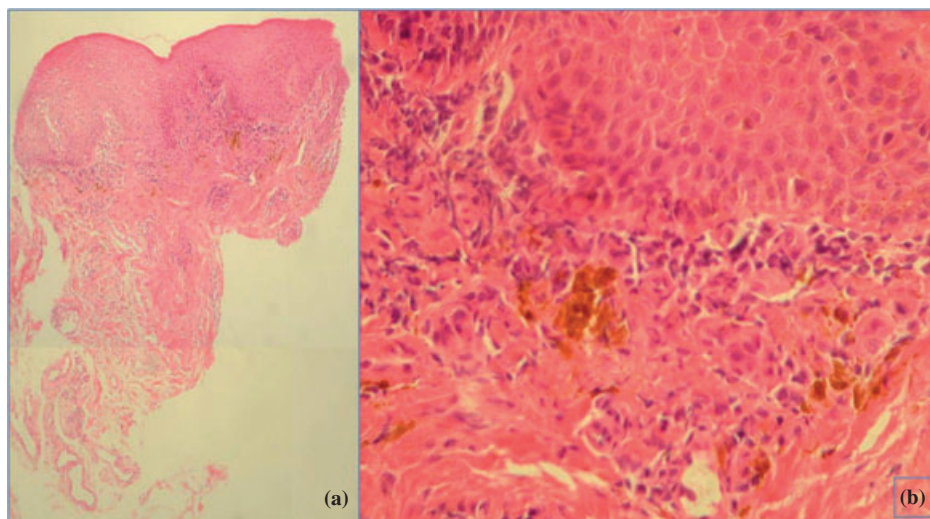


Fig. 2. (a and b) Perivascular lymphohistiocytic infiltration and increased melanophages in the upper dermis (hematoxylin–eosin [H & E], $\times 40$, $\times 400$).

Discussion

Green tea is made with the leaves of *Camellia sinensis*, and has recently become more widely consumed. Possible inhibitory effects of green tea on allergic reactions as well as food allergy by green tea have been reported (1, 2). Green tea is known to contain nickel, and Veien et al. reported that green tea made with a tea bag contained 0.03 mg Ni/kg, in a study from Denmark (3). We brewed the patient's green tea bag in the same way as she used to do and sent samples to the Korea Testing and Research Institute (KTR). The results showed that the tea bag extract contained 0.07 mg Ni/kg and the calculated daily total oral intake of nickel from drinking the tea was about 0.84 mg Ni/d, which is higher than the World Health Organization (WHO, 1994) recommendations (0.1–0.3 mg Ni/d).

The patient in this report had a positive reaction to nickel sulfate. Data from the North American Contact Dermatitis Group (NACDG) on patients with allergic contact cheilitis show that nickel accounted for 21.7% of all clinically relevant positive patch reactions (4). In addition, Zoli et al. reported that nickel was one of the most common sensitizers in patients with cheilitis (5). In these reports, the sources of nickel were mostly cosmetics, cosmetic containers or jewellery; food had not been mentioned as a source of nickel contact cheilitis.

It is not clear whether pigmented contact dermatitis is a variant of

contact dermatitis or a distinct entity. Pigmented contact dermatitis can occur without a significant inflammatory reaction and the exact mechanism is unknown. However, our patient presented with a darkened lip probably because of a nickel allergy. The tea cups, our patient used, were unlikely allergens because she used a variety of different cups; in addition, the symptoms resolved when she discontinued the green tea. To exclude other possible unknown allergens in the green tea bag itself, further study of the ingredients of green tea are needed.

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