

Quinoline Yellow dye-induced fixed food-and-drug eruption

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doi:10.1111/cod.12019

Key words: adverse drug reaction; dye allergy; fixed drug eruption; fixed food eruption; food allergy; Quinoline Yellow.

The term 'fixed food eruption' (FFE) was coined in 1996 by Kelso (1) to describe a rash that is clinically typical of fixed drug eruption (FDE) following food ingestion. Published cases of FFE remain scarce. They have been reported with seafood, cashew nuts, and tonic water. We report the first case of fixed food-and-drug eruption (FFDE) caused by Quinoline Yellow, a food colour additive that is also commonly present in drugs.

Case Report

A 23-year-old woman had an 18-month history of recurrent, well-defined raised reddish plaques on her trunk and upper limbs. This rash always occurred at the same sites, and healed within a few days, leaving a brownish residual pigmentation (Fig. 1). A diagnosis of



Fig. 1. Recurrence of fixed food and drug eruption.

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Conflicts of interest: The authors have declared no conflicts.



Fig. 2. Positive patch test reaction with Quinoline Yellow after D4 on the affected skin (++).

FFE was supported by skin biopsy, which showed basal keratinocyte vacuolization, lymphocytic infiltrate, and dermal oedema. The patient disclosed regular intake of lemon flavour candies and sodas, usually yellow in colour. One recurrence had occurred after intake of Biocalyptol[®] cough syrup (pholcodine), which contains Quinoline Yellow. She did not receive any other treatment.

Patch tests were performed with Finn Chambers[®] on normal skin and post-inflammatory pigmented sites with the European baseline series completed with suspected candies and their main dyes: tartrazine (1% pet.), Quinoline Yellow (0.5% pet.), Sunset Yellow FCF (1% pet.), and Natural Red 4 (1% aqua). Patch tests read on day 4 were positive for Quinoline Yellow on previously involved sites (++ according to International Contact Dermatitis Research Group criteria) (Fig. 2), but negative on normal

skin. All other patch tests gave negative results. At day 16, Quinoline Yellow patch tests gave positive results (++), both on affected skin and on normal skin. No relapse was observed after avoidance of drugs and food containing Quinoline Yellow. Further assessment with Hexaquine[®] (quinine benzoate and thiamine chlorhydrate) 30% pet., Nivaquine[®] (chloroquine) 30% pet., quinine chlorhydrate 30% pet. and Schweppes[™] patch tests – performed both on normal and on affected skin – gave negative results.

Discussion

Quinoline Yellow (E 104, D&C Yellow 10, or CI 47005) is a synthetic yellow–green dye used in a wide range of foods, cosmetics, and drugs. It belongs to the quinophthalone family, and its chemical structure is very close to that of quinine. Contact dermatitis has been reported with D&C Yellow 11 (CI 47 000) in cosmetics, and cross-reactivity with Quinoline Yellow was found on patch testing (2). However, Quinoline Yellow by itself has never been previously found to be responsible for skin rash. In our patient, skin biopsy showed classical findings of FDE without features of ‘neutrophilic fixed food eruption’ as described by Waton et al. (3). Eviction tests confirmed that our patch tests were relevant. Our observation is reminiscent of our previously reported case of FFE following Schweppes[™] tonic water ingestion (4), with patch test-proven quinine cross-reactivity. Here, however, tests failed to show cross-reactivity. To conclude, this is the first case of FFDE induced by Quinoline Yellow. The close chemical similarity to quinine makes cross-reactivity possible, although no supportive evidence has yet been provided.

References

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