An Unusual Case of Occupational Rhinitis

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Allergic rhinitis, when not related to proteic allergens, is difficult to diagnose. We report a case in which no association with a high-molecular-weight allergen was identified.

A 35-year-old man reported rhinitis, anosmia, and epistaxis with no bronchial or cutaneous signs that had first appeared some months previously. Symptoms seemed to be associated with the patient’s occupation, since they disappeared for a few days during vacations and recurred within a few days after returning to work. He also reported exacerbations 4 to 5 hours after consuming wine.

The patient had been working for many years in a coffee factory making coffee pods without wearing masks or protective gloves and was regularly exposed to coffee dust and paper filter systems, which included sulfur dioxide (SO2) and sulphites (SO3) at concentrations below regulatory standards.

Examination of his ears, nose, and throat only revealed nonspecific inflammatory rhinitis. No septal deviation, tumors, or signs of acute or chronic sinonasal disease (eg, secretions, crusts, and polyps) were identified. Lung function tests revealed normal spirometry findings without reversibility. No atopic conditions and no history of previous respiratory disease were found.

Immediate skin prick test readings were negative for coffee, coffee pods, and sodium metabisulphite (SMBS). However, prick tests with SMBS were positive a few hours later and were accompanied by a burning and itching sensation and infiltrating erythema.

Patch tests with SMBS (1% pet) were positive (++) at 24 hours (Figure). An “as is” SMBS control was negative at 30 minutes.

A nasal provocation test with a moistened fiber decoction was positive (immediate epistaxis and rhinorrhea).

An oral provocation test with sulfites (up to a cumulative dose of 680 mg) triggered nasal pruritus, rhinorrhea, and an 11% drop in FEV1 (ie, 500 mL) at the end of the test (after 6 hours). Consequently, the result was considered positive, although the patient recovered spontaneously without treatment.

Green coffee IgE was <0.1 kU/L (Thermo Fisher Scientific).

The patient was then moved to another area of the factory and assigned other duties. His occupational symptoms subsequently disappeared.
inflammation and not from irritation or other causes. There were no other symptoms to evoke possible causes of epistaxis, e.g., unilateral nasal blockage, facial pain, headaches, facial swelling/deformity, South-East Asian origin (nasopharyngeal carcinoma), loose teeth, or otalgia (according to an update on epistaxis [4]). Furthermore, in the present case, the olfactory dysfunction may be the result of upper respiratory inflammation and nasal obstruction. There was no cranial trauma or associated signs.

Our findings could support the use of nonimmediate patch test readings (along with immediate readings of skin prick tests) in cases of occupational rhinitis involving airborne particles, which may underlie T cell–mediated hypersensitivity reactions, as previously suggested [5].

Nonimmediate patch test readings could prove useful in cases were T cell–mediated hypersensitivity reactions are believed to be caused by airborne particles such as sulfites.

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Conflicts of Interest

Dr. Demoly reports personal fees from ALK, Stallergenes Greer, IQVIA, Chiesi, AstraZeneca, Thermo Fisher Scientific, Ménarini, Bausch & Lomb, Mylan, ASIT Biotech, Novartis, Sanofi, and Regeneron outside the submitted work. The remaining authors declare that they have no conflicts of interest.

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