

Chronic recurrent otitis externa secondary to allergic contact dermatitis to nickel and phosphorus sesquisulfide

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Case Report

A 41-year-old lady presented with a 2-year history of recurrent bilateral otitis externa, which required numerous courses of oral antibiotics, antimicrobial ear drops, topical corticosteroids and occasionally a course of oral prednisolone.

Patch testing to the European baseline series of contact allergens (Chemotechnique Diagnostics™, Sweden), steroids, facial, vehicle, perfume and medicaments (which included her ear drops) series showed a strong positive reaction (++) to both nickel sulfate (5%) and phosphorus sesquisulfide (1% pet.) at 4D. Allergens were applied for 2D on Finn Chambers™ mounted on Scanpor tape™ and readings were undertaken at 2D and 4D. On direct questioning, she admitted to using the head end of matches and metal hair-clips to scratch her ears, although she

was adamant that the matches were brown rather than red tipped. Unfortunately, she could not remember the brand name for the matches.

She was advised to stop using her previous 'scratching aids'. Since then, she has noticed a marked improvement in her symptoms.

Discussion

Up to one-third of patients with chronic recurrent otitis externa has been found to have an allergic component to their disease. Contact allergy in otitis externa must not be confused with allergic contact dermatitis of the external ear. In the latter, the most common allergen is nickel from earrings, whereas in otitis externa, the predominant allergens are therapeutic agents such as neomycin eardrops and topical corticosteroids (1). True nickel allergy in otitis externa is rarely reported (2). Although our patient did wear possible nickel-containing earrings (not confirmed by DMG testing) as well as other jewellery, it was the act of scratching her ears with a metal hair clip that directly contributed to development of her otitis.

Contact allergy to phosphorus sesquisulfide in the context of otitis externa is also rare (3). Phosphorus sesquisulfide is found in so-called strike-anywhere matches. It is well known to cause facial eczema and contact urticaria (2,4,5) from airborne contact when matches are struck and otitis externa when the head end of the match is introduced into the ear (3) as in our patient.

It was always thought that the strike-anywhere matches containing phosphorus sesquisulfide are red tipped, whereas brown-tipped safety matches contain potassium dichromate. As our patient was found to be allergic to phosphorus sesquisulfide but was adamant that she only scratched her ears with brown-tipped matches, we contacted The Swedish Match Company™, which is the largest match manufacturer in the UK. In the UK, the commonest brand of strike-anywhere matches is Swan-Vesta™, which are red/pink tipped. For approximately 15 years, their safety matches have contained red phosphorus rather than dichromate, although some companies may still use dichromate, and are coloured either brown, red or blue. Their strike-anywhere matches still contain phosphorus sesquisulfide and

are usually pink or blue. The colour of the match tip or head is determined by whether manufacturers use an inorganic oxide (which gives rise to a brown colour) or a water-soluble dye (pink, blue or red). Therefore, it is possible for strike-anywhere matches to be brown and safety matches to be red, which would explain our patient's case as she may have bought a brand of strike-anywhere matches that are brown-tipped.

This case highlights the importance of eliciting a history of introduction of any object into the ears when faced with a patient who has chronic recurrent otitis externa. Strike-anywhere matches are now rarely sold in the UK and so phosphorus sesquisulfide is now largely a forgotten allergen but we need to be aware that it is still around and could cause problems.

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