

Occupational allergic contact dermatitis caused by tetracaine in an otorhinolaryngologist

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Allergic skin reactions to local anaesthetics are very rare (1), but their prevalence may be increasing (2). Here, we present a patient with eczema on two fingers caused by occupational exposure to tetracaine.

Case Report

A 46-year-old non-atopic man had been working as an otorhinolaryngologist since 2001. He first came to our clinic in 2005, where he was investigated for eczema on

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Fig. 1. The eczematous reaction on the second and third fingers on the right hand.



Fig. 2. The exposure to tetracaine. First, tetracaine was put on a tampon. Second, the surgeon used the second and third fingers on his right hand to grab the tampon. Third, the tampon was inserted into the patient's nose.

the second and third fingers on his right hand. At that point, the patient was patch tested, but the cause of the eczema was not found. The patient had since been troubled by eczema, and used potent topical corticosteroids almost daily.

In January 2016, the patient came back to our clinic with severe dermatitis on the same two fingers (Fig. 1), which was very troubling for his work as a surgeon. He then reported that, prior to surgery, he put nose drops containing tetracaine-HCl and phenylephrine-HCl on a tampon, which was then inserted into the nose of the patient (Fig. 2). He performed this without protective gloves. The connection between this procedure and the eczema had not been noted in the investigations performed 10 years earlier, and consequently it did not lead to any supplemental testing at that point.

In March 2016, patch testing was repeated with the European baseline series, including departmental extensions to it, the more specialized series with food and fragrances, lidocaine hydrochloride, the nose drops with tetracaine-HCl 2%/phenylephrine-HCl 0.01% 'as is', and the single active ingredients tetracaine-HCl 5% pet. and phenylephrine-HCl 10% aq. Finn Chambers® (8 mm; SmartPractice, Phoenix, AZ, USA) on Scanpor® tape (Norgesplaster, Vennesla, Norway) were applied to the upper back and left occluded for 48 h. Readings were performed on day (D) 2, D3, and D7, according to ICDRG recommendations (3). Testing gave positive results for the nose drops (+1 on D3) and tetracaine-HCl (+1 on D3), but negative results with all other substances, including benzocaine 5.0% pet. and lidocaine hydrochloride 1.5% pet.

On the basis of these findings, the patient was diagnosed with occupational allergic contact dermatitis caused by tetracaine, and was advised to avoid direct contact with all products containing tetracaine. He was treated with potent topical corticosteroids until the eczema cleared, which was achieved after 2 months.

Discussion

Contact allergy to tetracaine has been reported in several case reports (4, 5). In this particular case, the patient had most likely been sensitized to tetracaine by direct skin contact on two fingers on the right hand.

Local anaesthetics can be divided into two groups: aminoamides and aminoesters (1). Aminoamides are most commonly used, and include lidocaine, whereas aminoesters include tetracaine and benzocaine. Testing for contact allergy to local anaesthetics is performed routinely in all patients tested with the European baseline series including benzocaine 5.0% pet. (3). Nonetheless, many patients with contact allergy to a local anaesthetic are missed if testing only includes benzocaine (6), and this was also observed in this particular case. It is the general assumption that cross-reactivity between the ester and amide groups does not occur (1), but notably, in this case, there was not even cross-reactivity between the two esters tetracaine and benzocaine. Consequently, testing should be supplemented with the culprit local anaesthetic, and not only include an aminoester or an aminoamide.

In all patients with suspected contact allergy to local anaesthetics, it is also important to remember that most exposures to local anaesthetics automatically include exposures to 'hidden' allergens such as rubber accelerators and chlorhexidine, and testing should therefore

also include these substances. In patients with suspected immediate-type allergic reactions to local anaesthetics, 'hidden' exposures to latex and chlorhexidine should also be considered.

This case emphasizes that contact dermatitis in health-care workers can be attributed to tetracaine, and highlights the importance of testing with the culprit local anaesthetic.

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