

CASE REPORT

CONTACT ALLERGIC DERMATITIS IN A DENTAL TECHNICIAN

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INTRODUCTION

O.G., a dental technician, was referred to the Dermatology Department of the Work Hygiene and Occupational Health Directorate of the National Public Health Institute (hereinafter: OKI-MFI) by the dermatoallergy outpatient department on 28th August 2017 for consultation. The objective of the consultation was to confirm the suspicion of contact dermatitis of occupational origin as well as to request an expert opinion on a possible career change.

HISTORY

O.G. has been known to have sensitivity to metals since age 12, according to her observation this was triggered by wearing costume jewellery. Wearing artificial nails caused her fingers to itch so that she had to remove them. She has been experiencing symptoms of hay fever for the last 2 years. Her mother has a pollen allergy, female relatives on her mother's side have eczematous dermatitis.

The above history data can point to sensitivity to metals, and also to acrylate resin that artificial nails are made of. Her family history points to an atopic person. She did not report any examinations; allergy tests having been carried out.

WORK HISTORY, CLINICAL SYMPTOMS

She attended dental technician school between 2014 and 2017. She was exposed to acrylate when making base plates for braces and artificial teeth during practical training carried out at dental labs which made up 70% of school work. She began experiencing symptoms as early as in 2014 in the first year of dental technician school. Blisters appeared on the fingertips on both hands which later burst. Thereafter she no longer had to carry out any tasks entailing exposure to acrylates and she became asymptomatic.

On 19th June 2017 she started working as a dental technician at a dental technic company. Since she indicated her sensitivity to acrylate upon hiring, she was given a job with no

exposure to acrylate, such as plastering, waxing, engraving of plaster, making of deep drawing equipment. Making transparent braces was one of her duties. This latter involved the use of a substance called Blue Blokker. According to its safety data sheet, Blue Blokker is irritative and contains 5-20% methacrylate. Additionally, she also used metal instruments during her work. She received disposable nitrile gloves as personal protective equipment.

Her symptoms at her workplace started in August 2017. Itching started solely on the thumb of her left hand, followed by the appearance of blisters which burst, their sites becoming sore and painful.

She received treatment by a specialist for her skin complaints, followed by allergological investigation at the Dermatoallergology outpatient clinic: polyvalent metal and acrylate sensitivity was confirmed with epicutaneous test; nickel, palladium, methyl methacrylate and 2-hydroxyethyl methacrylate, diurethane dimethacrylate gave positive results.

According to available data chemical risk assessment was not carried out at the workplace, safety data sheets were not available in Hungarian language and the work safety education of the workers was also lacking.

SPECIALIST CONSULTATION

She came to the OKI-MFI Dermatology department on 11th September 2017. Based on the clinical examination and the available data, skin disease of occupational origin was suspected and was reported with a diagnosis of allergic contact dermatitis (A/75). (She was advised to avoid allergens that gave positive results in the future.).

OFFICIAL INVESTIGATION

During the official workplace investigation following the notification it was found that O.G. did not undergo preliminary fitness-for-job examination, she was not examined by an occupational health specialist.

Previously, during practical training she underwent fitness-for-job medical examination every year. She stated that she always received fit with no restrictions qualification because the occupational health specialist was not aware of her sensitivity. The pathological factor uncovered during the investigation was the acrylate containing Blue Blokker.

The Professional Committee of the Work Hygiene and Occupational Health Directorate of the National Public Health Institute took into account the available work history, attached medical documentation and the investigation report (confirmed multiple acrylate and metal sensitivities). Acrylate sensitivity may have played a role in the development of the disease. Based on the above, causal relationship is probable between O.G.'s disease and occupation.

The case was confirmed as a disease of occupational origin with a diagnosis of contact allergic dermatitis (code: A/75).

DISCUSSION, LESSONS LEARNED

Dermatitis caused by chemicals – contact dermatitis – is the most frequent dermatitis of occupational origin, which can be of irritative or allergic origin based on its pathomechanism. Based on the clinical picture it cannot be established with certainty whether the dermatitis is of irritative or allergic origin therefore allergy testing is essential during the review of preliminary fitness for job.

The establishing of fitness for job is the task of the occupational health specialist who must be aware of the allergenic substances the worker may encounter in the job in question. When is allergy testing justified?

Similar to the practice of other countries, routine allergy testing is not recommended. It is justified if unexplained contact dermatitis is suspected in the worker's medical history or during medical examination.

The most commonly used allergy test is the epicutaneous test, the “gold standard”, which is an in-vivo test. Its risk is that in very rare cases it may itself cause allergy. The LTT (Lymphocyte Transformation Test) is a less often used in-vitro test, it is used primarily in cases where late-type sensitivity does not manifest in the form of dermal symptoms.

Performing the epicutaneous test, which includes establishing the diagnosis, designing and carrying out of the allergy tests is the job of the dermatology specialist.

The chemical sensitivity that has developed persists for life.

In the dental practice, sensitivity to metals, epoxy and epoxy-acrylate resins are the most common. In the field of modern medicine, with the use of various implants, instruments – e.g. orthopaedic implants, prostheses, cardiac stents – developing an allergy to these materials is also common. The leachable metals, adhesives, as well as other chemicals can cause endogenous inflammatory processes, allergies.

OPINION

In the case described the justified allergology testing was not carried out either during the vocational training or following the starting of work, neither appropriate fitness for job examinations nor the work safety education of the workers were carried out at the workplace which point out the local deficiencies of labour safety and occupational health care which ultimately led to the development of the dermatitis of occupational origin and the loss of the job for which the worker was qualified.

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