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CASE REPORT/*OPIS PRZYPADKU*

The many faces of allergy in one patient

Rozliczne oblicza alergii u jednej pacjentki

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ABSTRACT

A patient, aged 63, has been treated for many years in the Outpatients' Department of Allergology. During childhood she was diagnosed with asthma and she was hospitalised for this reason multiple times. Since childhood she has suffered from recurrent symptoms of allergic rhinoconjunctivitis. She has had status asthmaticus requiring hospitalization in an intensive care unit four times. The patient has suffered from oral allergy syndrome after eating tomatoes. She has been hospitalized twice due to anaphylactic shock. Dermal symptoms concerning contact/atopic dermatitis started in the first year of life. The conducted diagnostics demonstrated the polyvalent character of allergy in the patient discussed. She was not allergic to latex but both *in vitro* and in vivo tests were positive for grasses and weeds. Lack of sIgE towards food allergens can suggest cross reactive character of food allergy. Additionally, a cross reactive reaction towards lipocalins can explain the reaction after contact with a horse.

KEY WORDS

food allergy, ISAC test, polyvalent allergy, latex allergy, lipocalin.

STRESZCZENIE

Pacjentka, lat 63, leczona wiele lat w przyklinicznej poradni alergologicznej. W dzieciństwie zdiagnozowano u kobiety astmę, która była przyczyną wielokrotnych hospitalizacji. Od dzieciństwa chora cierpiała z powodu nawracających objawów zapalenia spojówek oraz błony śluzowej nosa. Czterokrotnie miała zaostrzenie astmy wymagające leczenia na oddziale intensywnej terapii. U chorej występowały objawy zespołu alergii jamy ustnej po zjedzeniu pomidorów. Dwukrotnie była hospitalizowana z powodu wstrząsu anafilaktycznego. Objawy atopowego oraz kontaktowego zapalenia skóry rozpoczęły się w pierwszych latach życia. Przeprowadzona diagnostyka wykazała wieloważny charakter alergii. Chora nie była uczulona na lateks, ale zarówno testy *in vitro* oraz *in vivo* były dodatnie z trawami oraz chwastami. Brak sIgE przeciwko alergenom pokarmowym świadczy o krzyżowym charakterze alergii na pokarmy. Dodatkowo krzyżowa reakcja przeciwko lipokainom może tłumaczyć reakcję po kontakcie z koniem.

SŁOWA KLUCZOWE

alergia, test ISAC, alergia wieloważna, alergia na lateks, lipokaina.

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INTRODUCTION

A patient, aged 63, has been treated for many years in the Outpatients' Department of Allergology, Medical University of Gdansk.

CASE REPORT

In early childhood she often suffered from respiratory tract infections. When she was 7 years old, she was diagnosed with asthma and she was hospitalised for this reason multiple times. Moreover, since childhood she has suffered from recurrent symptoms of allergic rhinoconjunctivitis intensifying each time after contact with dust, a cat and a dog, freshly mowed grass as well as in a damp environment. For that reason the patient has been given immunotherapy with a Pasteur Institute preparation containing three types of fungi (when she was 27 years old) and dust mites with Alavac (when she was 29). Unfortunately the patient does not have any documents concerning immunotherapy. None of its cycles has been completed due to pregnancies. The patient has got three healthy children aged 33, 30 and 20. She has had status asthmaticus requiring hospitalization in an intensive care unit four times. The first of the mentioned incidents occurred at the age of 15 during a sleigh ride in which she was sitting directly behind the horses (very intense smell) and a few years later after playing with cats and dogs. The next two incidents happened after eating split pea soup (at the age of 21) and salami (46 years). Both the soup and salami contained spices (no information which ones). Apart from these ailments the patient has suffered from oral allergy syndrome (burning sensation in the lips or swelling of the tongue) after eating tomatoes. Currently she is using combination inhalers (corticosteroid/long acting β-mimetic), short acting β-mimetic, oral antihistamines and antileukotrienes. Periodically she uses nasal corticosteroids and chromones (eye drops).

The patient has been hospitalized twice due to anaphylactic shock: at the age of 24 when she ate two tablets of Biseptol due to respiratory system infection (intubated, without respirator therapy) and at the age of 44 after contact with an old, dusty and damp duvet. The latter incident was complicated with the exacerbation of asthma and a myocardial infarction. For this reason she was hospitalized in the Department of Cardiology of Zamosc Hospital. Then for the next few months she was a patient of the Cardiologic Outpatient Clinic in Gdansk. After 12 months of follow-up examinations such as electrocardiogram and echocardiography (the results were back to normal), the cardiac observation was ceased. Since then the patient has not had any ailments of the cardiovascular system.

Another problem is dermal symptoms concerning contact/atopic dermatitis, which started in the first year of life. The symptoms intensified after exposure to cow milk, which nevertheless was given to her until she was eight. When she stopped drinking milk, there was a slight improvement. Each time after contact with sheep wool, the symptoms became worse. The patient worked as a dental technician for many years (18 to 30 years old), but due to dermal symptoms on her hands as well as shortness of breath she is on a disability pension. Even today the patient cannot wear any jewellery, even made of precious metals. Several years ago about 12 h after polishing the nails the patient's eyelids became very swollen and red. The patient claims that there was no contact of the polish with the eyelids. Despite immediate removal of the polish, the symptoms continued for about 7 days. The patient needs to use emollients continuously and topically she uses anti-inflammatory agents (corticosteroids and calcineurin inhibitors).

FINDINGS

Many years ago, before immunotherapy, the patient underwent skin prick tests for common airborne allergens, which were positive for dust mites, a mixture of mould spores, grass pollens, cat and dog. Due to recurring ailments and constant contact with health care units, latex allergy and/or latex cross reaction was suspected. Extended allergy testing was conducted. The patient had skin prick tests done with the most common aeroallergens: *Dermatophagoides farinae, Dermatophagoides pteronyssinus*, grasses, grains and grasses, trees 1, trees 2, weed, moulds 1, moulds 2, feathers, cat's fur, dog's fur as well as food allergens: bananas, avocados, potatoes, tomatoes, celery, carrots, peppers, walnuts, hazelnuts, peanuts and apples. The tests were positive for *Dermatophagoides farinae* (result 8 mm, positive control 7 mm, negative control 0 mm), *Dermatophagoides pteronyssinus* (8 mm), grasses (10 mm), grains and grasses (10 mm), weed (10 mm), moulds 1 (6 mm), moulds 2 (9 mm), cat (10 mm), dog (10 mm) as well as bananas (4 mm), tomatoes (5 mm), celery (5 mm), paprika (4 mm), walnut (5 mm), hazelnut (5 mm) and peanut (5 mm). sIgE was determined

for: banana, kiwi, avocado, potato, tomato, celery, carrot, paprika, walnut, peanut, hazelnut, apple, latex as well as recombinant allergens of latex – rHev b 1, rHev b 3, rHev b 5, rHev b 6.01, rHev b 6.02, rHev b 8, rHev b 9 and rHev b 11 using the fluoroimmunoenzymatic test ImmunoCAP Phadia System (Upsala, Sweden). No positive results were found. Moreover, in view of the recurring anaphylactic reactions the concentration of tryptase was determined (normal) and the ISAC test was performed (positive for nCyn d 1 – 1.8ISU, class 2, rPhl p 1 – 3.3ISU, class 2, nArt v 1 – 0.7ISU, class 1, rCan f 1 – 1.8ISU, class 2, rFel d 1 – 0.6ISU, class 1 and nMus m 1 – 1.5ISU, class 2). Both examinations were performed with the fluoroimmunoenzymatic test ImmunoCAP Phadia System (Upsala, Sweden).

Skin patch tests with the set of common contact allergens including rubber were conducted according to the standards of the *International Contact Dermatitis Research Group* (ICDRG). They were positive for nickel and cobalt.

DISCUSSION AND CONCLUSION

The conducted diagnostics demonstrated the polyvalent character of allergy in the patient discussed. A patient with a history of food allergy, who had contact with the health care system, should be considered as a possible latex allergy patient. In the present case latex allergy was ruled out. Both *in vitro* and *in vivo* tests were positive for grasses and weeds. Lack of sIgE towards food allergens can suggest cross reactive character of food allergy. Furthermore, both *in vitro* and *in vivo* tests confirmed allergy to cats and dogs. The ISAC test revealed a positive result with mMus m 1. There was no history of contact with mice. mMus m 1 belongs to lipocalins and has structural similarity with horse lipocalin, which could explain the status asthmaticus caused by a sleigh ride. A patient with severe polyvalent allergy with multiorgan manifestation and a life-threatening reaction still poses a challenge for proper diagnosis and treatment [1, 2].

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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