

CASE REPORT

CASO CLINICO

Non fatal anaphylactic reaction to skin prick test with inhalant allergens: two clinical cases

Reazione anafilattica non letale allo skin prick test: due casi clinici

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Key words

Anaphylactic reaction • Allergy • Skin prick test

Parole chiave

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Summary

Allergy skin tests is an easy, specific and inexpensive way to test subjects for allergies and, also, it is usually carried out with no problems.

In this study we describe a systemic anaphylactic reaction after skin prick test due to inhalant allergens in a 13 year-old child and in a 55 year-old nurse.

Skin prick tests were performed with inhalant standardized allergen extracts.

The close relationship between skin prick testing and systemic reaction occurrence evidenced that the reaction was due to the allergens. The allergic nature of the reaction was evidenced both by high tryptase levels and quick resolution after appropriate treatment.

In conclusion skin prick test must be performed only in presence of trained medical doctors, in a setting where safety precautions are always optimal.

Riassunto

Lo skin prick test è uno strumento diagnostico semplice, specifico ed economico per valutare pazienti con sospette allergie. Inoltre, è solitamente scevro di reazioni avverse.

Vengono descritti due casi di reazione anafilattica successiva all'esecuzione dello skin prick test in un ragazzo di 13 anni ed in una donna di 55.

Lo skin prick test era eseguito con estratti standard del commercio.

Era evidente uno stretto nesso di causa-effetto tra esecuzione del test e la comparsa del corteo sintomatologico. Inoltre, la natura allergica della reazione era confermata dagli alti valori di tritassi sierica e dalla rapida risposta alla terapia antiallergica.

In conclusione, lo skin prick test andrebbe eseguito da medici esperti e in ambito clinico attrezzato.

Introduction

In recent years, skin testing has been commonly considered as the gold standard for IgE-mediated disorders diagnosis, because of its high sensitivity, its low cost and the immediate availability of results¹. However, skin prick test (SPT) presents few disadvantages too: it takes an experienced tester in order to obtain reliable results and the result may considerably vary considering the differences in technique and the quality of extracts¹.

In order to keep the test safe, the tester needs to be very careful: in this regard, the literature reports some severe adverse reactions provoked by the intradermal method, nowadays largely replaced by the safer SPT. Nevertheless, even though very rarely, the SPT can induce systemic reactions in highly sensitive patients (Tab. I). Novembre, for example, has reported two

cases of anaphylactic reactions in adults after prick by prick test with fresh food². Devenney reported six cases of generalized reactions in infants after prick by prick test with fresh food³. Valyasevi has reported only 2 reactions caused by inhalant allergen, in a report that included 18,000 patients using commercial allergenic reagents⁴.

Case report

CASE 1

SPT was performed to LP, a 13 year-old boy. He has an allergy history from both maternal and paternal families. Since he was 2, LP suffers from rhinitis and asthma, exacerbated by physical stress. He is following a therapy based on leukotriene-antagonist and inhaled

Tab. I. Allergic adverse reactions to skin prick test reported in literature.

Author	Number of patients evaluated	% events	Fatal events	Allergen/s
Lockey	unknown	unknown	6	Unknown
Turkelta	15,794	0	none	Aeroallergen
Lockey	3,236	2%	none	Hymenoptera venom
Valyasevi	18,000	0.03%	none	Latex, Antibiotics, Aeroallergen (2 reactions)
Valyasevi	1,710	0.12%	none	Penicillin
Cantani	> 10,000	none	none	Food
Devenney	1,152	0.52%	none	Food

corticosteroids. At the age of 6, his SPT resulted positive for house dust mites (HDM), dog, *Penicillium fumigatus*, *Ambrosia* and grasses. As requested by his private doctor, we have performed to the boy the SPT according to the EAACI position paper¹.

All tests were performed with standardized allergen extracts (Alk-Abellò, Milan, Italy): *Dermatophagoides farinae* and *pteronyssinus*, grasses, *Parietaria*, dog, cat, *Alternaria*, *Ambrosia*, *Aspergillus fumigatus*, birch, and hazel, according to validated criteria¹. The SPT resulted positive for *Dermatophagoides farinae* and *pteronyssinus*, grasses, dog, cat, *Alternaria*, *Ambrosia*, *Aspergillus fumigatus*. After ten minutes, LP has developed a cutaneous generalized reaction, including urticaria and generalized erythema, associated with cough, respiratory distress and stridor. Respiratory symptoms resolved in a few minutes, after inhalation of epinephrine and salbuterol, and taking of systemic corticosteroid and antihistamine. After 30 minutes the cutaneous reaction resolved too. Ninety minutes later serum tryptases were elevated (12 ng/ml) and lowered to a normal level only after 180 minutes.

CASE 2

MD is a 55 year-old nurse, working at our Paediatric Department. After a whole month during which she was suffering from persistent cough, she decided to undergo SPT. All tests were done with the same stan-

dardized extracts as reported for Case 1. She was positive for *Dermatophagoides farinae* and *pteronyssinus*, grasses and *Aspergillus fumigatus*. Twenty minutes after SPT, MD presented erythema of the neck area, dyspnea, cough, itching throat, cold sweating and hypotension. After administration of intravenous corticosteroids and oral antihistamines, all symptoms disappeared in few minutes. Similarly to the previous patient serum tryptases were elevated (16 ng/ml) and returned to normal values after 150 minutes.

Discussion

Since their introduction over a hundred years ago, allergy skin tests have been a fundamental diagnostic tool for allergic disorders. SPT is an easy and unexpensive way to test subjects for allergies and it is usually carried out without any problem^{4,5}. Moreover, as reported by Lockey, in case of systemic reaction, the patient should not be re-tested *in vivo*, since a previous systemic reaction probably increases the likelihood of a subsequent fatal reaction as it suggests a high sensitivity⁶.

Therefore, SPT must be performed only in presence of trained medical doctors and in a setting where safety precautions are optimal (epinephrine, oxygen mask and first aid kit, including corticosteroids and antihistamines).

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Il Professor Canonica eletto Presidente WAO

La Società Italiana di Allergologia e Immunologia Clinica esprime le sue congratulazioni al Professor Walter Canonica per l'inizio del mandato di Presidente della World Allergy Organization (WAO). Il Professor Canonica resterà in carica per il biennio 2008-2009. La SIAIC è lieta di avere ancora una volta tra i suoi Soci personalità di elevato valore scientifico in grado di raggiungere ruoli di grande prestigio nelle Organizzazioni internazionali e formula al neo Presidente i migliori auguri di un proficuo lavoro.

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