

Case Report

Latex hypersensitivity in only one uniovular twin: a case report

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We present the clinical case of uniovular twins with cerebral palsy, confirming the development of sensitisation to latex in one of the twins, due to the fact that he underwent surgery more times (nine) than his brother (four) as well as to his different clinical evolution.

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Introduction

Allergy to latex (*Hevea brasiliensis*) is the commonest cause of intraoperative anaphylactic shock in children (1). The sensitisation can take place after recurrent direct contact of the skin or the mucosa with products containing latex (gloves, catheters, probes, etc.) or after continuous inhalation of latex particles during surgery (2). In addition, it is rather frequent to find an associated sensitisation to fruits (banana, chestnut, avocado, kiwi, melon) in these patients, which in many cases can induce the first suspicion of the diagnosis (3, 4). Nevertheless, latex allergy in spina bifida patients was considered by some researchers as genetically driven (5).

We present the clinical case of uniovular twins with birth cerebral palsy where only one of them developed sensitisation to latex after undergoing several surgical operations.

Twin 1

The first twin is a boy aged 4 years and 5 months with a clinical history of twin preterm delivery (28 weeks) of low weight (1.100 gr.) with spastic diplegia secondary to periventricular leukomyelopathy associated with perinatal anoxia, who has a ventricular-peritoneal shunt for intraventricular posthemorrhagic hydrocephalus; he also has bilateral cryptorchidism and convergent strabismus. The patient is under physiotherapy and infiltrations with botulinus toxin on adductor and ischiotibial muscles. He has required nine operations for valvular placement and

replacement due to malfunction (partial obstructions).

The patient was first seen in our department when he was 2 years and 8 months old, suffering from severe asthma which was sometimes associated with high temperature and rhinosinusal symptomatology. After allergologic study (skin tests, total IgE, specific IgE to most frequent foods and pneumoallergens, and antigen specific histamine release test) sensitisation to foods or airborne allergens was ruled out, the levels of IgE being within normal range (19.3 kU/l). Treatment with nebulized cromolyn sodium and against respiratory infections was prescribed. The evolution was favourable from the respiratory point of view. When the child was 3 years and 11 months old, the mother drew our attention to some facial urticarial lesions associated with productive cough and slight dyspnea which appeared suddenly on contact with a balloon. In the three previous months, the evolution had shown relapses and asymptomatic periods. The allergologic study showed:

1. skin test to latex (prick): +++
2. total IgE: 214 kU/l
3. specific IgE to latex: 7.3 kU/l
4. specific IgE to banana, chestnut and kiwi: <0.35 kU/l

The patient was diagnosed with hypersensitivity to latex and some preventative measures for future surgery were indicated; banana, chestnut and kiwi were taken out of his diet.

He subsequently underwent surgery for the 10th time, avoiding both surgeon and patient contact with

latex, and the operation developed with no complications.

Twin 2

The second twin is a boy aged 4 years and 5 months and twin brother of the previous case; preterm delivery (28 weeks) of low weight (1.200 gr.) with birth spastic diplegia secondary to periventricular leukomyelopathy and with a ventricular-peritoneal shunt following neonatal posthemorrhagic communicating hydrocephalus. He also had gastroesophageal reflux, phoria and hypermetropia treated with lenses, left cryptorchism and right refractile testis. He has physiotherapy and infiltrations with botulinus toxin on right triceps surae and right adductor. Unlike case one, he has had only four operations.

The patient was first seen in our department at the age of two years and 8 months, with perennial bronchospasm episodes associated to viral infections and he was diagnosed with bronchial asthma. After having ruled out allergic sensitisation by means of skin tests, total IgE (5.3 kU/l), specific IgE and antigen-specific histamine release test against the most frequent pneumoallergens and food antigens, treatment with nebulized cromolyn sodium was established, with a very favourable clinical evolution. The patient was seen in subsequent visits which highlighted the spastic tripareisis and sporadic upper respiratory tract infections with no fever or bronchial affection. In the last visit, a study of hypersensitivity to latex was made with negative results. The allergologic study showed:

1. Skin test to latex (prick): negative
2. Total IgE: 52.4 kU/l
3. Specific IgE to latex, banana, chestnut and kiwi: <0.35 kU/l

Discussion

Hypersensitivity to latex is the commonest cause of intraoperative anaphylactic shock among children (1), especially in patients who have undergone multiple surgery (6). For example, it has been reported (7) in 28–67% of patients with spina bifida (8, 9, 10, 11), in 6–16.9% of health care staff, whereas in the general population hypersensitivity to latex is less than 1%.

The point of our case report is that twin number 1 in his evolution presents a confirmed sensitivity to latex, with an increase of the serum IgE levels whereas we can observe that the twin brother, with fewer operations, presents normal serum IgE levels for his age and negative *in vivo* and *in vitro* latex al-

lergy tests. In these patients it is important to confirm the existence of latex hypersensitivity, in order to establish preventive measures and avoid intraoperative anaphylactic shock, as well as avoid recurrent urticarial manifestations triggered by fruit intake (kiwi, banana, etc.), due to the possible cross reaction.

This case report corroborates the relationship between exposure to latex and subsequent sensitisation to it, as has been stated by other authors, who conclude that the number of operations is the main risk factor for latex-related symptoms in sensitised children (12–14). It is the number of surgical procedures rather than the genetic background alone that is related to latex sensitisation.

References

1. SABOURAUD LECLERC D, FONTAINE JF, LAVAUD F, et al. Latex allergy in 16 children. *Arch Pediatr* 1996; 3(9): 861–5.
2. LAXENAIRE MC, MONERET-VAUTRIN DA. Allergy to latex. *Chirurgie*. 1994–95; 120 (9): 526–32.
3. CAHALY RJ, SLATER JE. Latex hypersensitivity in children. *Curr Opin Pediatr*. 1995; 7(6): 671–5.
4. LATASA M, DIÉGUEZ I, SANZ ML, PARRA A, PAJARON MJ, OEHLING A. Fruit sensitization in patients with allergy to latex. *J Invest Allergol Clin Immunol* 1995; 5(2): 97–102.
5. MONERET-VAUTRIN DA, MATA E, GUEANT JL, TURGEMAN D, LAXENAIRE MC. High risk of anaphylactic shock during surgery for spina bifida. *Lancet* 1990; 335(8693): 865–6.
6. LIEBKE C, NIGGEMANN B, WAHN U. Sensitivity and allergy to latex in atopic and non-atopic children. *Pediatr Allergy Immunol* 1996; 7(2): 103–7.
7. RANDILPH C, FRASER B. Latex hypersensitivity in a horse farmer. *Allergy Asthma Proc* 1996; 17(2): 89–91.
8. BIRMINGHAM PK, DSIDA RM, GRAYHACK JJ, et al. Do latex precautions in children with myelodysplasia reduce intraoperative allergic reactions? *J Pediatr Orthop* 1996; 16(6): 799–802.
9. NIETO A, ESTORNELL F, MAZON A, REIG C, NIETO A, GARCÍA IBARRA F. Allergy to latex in spina bifida: a multivariate study of associated factors in 100 consecutive patients. *J Allergy Clin Immunol* 1996; 98(3): 501–7.
10. KONZ KR, CHIA JK, KURUP VP, RESNICK A, KELLY KJ, FINK JN. Comparison of latex hypersensitivity among patients with neurologic defects. *J Allergy Clin Immunol* 1995; 95(5 Part 1): 950–4.
11. PITTMAN T, KIBURZ J, GABRIEL K, STEINHARDT G, WILLIAMS D, SLATER J. Latex allergy in children with spina bifida. *Pediatr Neurosurg* 1995; 22(2): 96–100.
12. CHEN Z, CREMER R, BAUR X. Latex allergy correlates with operation. *Allergy* 1997; 52(8): 873.
13. MAZON A, NIETO A, ESTORNELL F, NIETO A, REIG C, GARCÍA-IBARRA F. Factors that influence the presence of symptoms caused by latex allergy in children with spina bifida. *J Allergy Clin Immunol* 1997; 99 (5): 600–4.
14. PORRI F, PRADAL M, LEMIERE C. Association between latex sensitization and repeated latex exposure in children. *Anesthesiology* 1997; 86(3): 599–602.