for substances otherwise sparingly soluble in water. We report the first case of a severe immunoglobulin (Ig)E-mediated hypersensitivity reaction (1) because of betamethasone (Diprostène®) (Scheringh Plough, Levallois-Perret France) in which the allergenic determinant involved was macrogol 4000.

A 45-year-old man was scheduled in a rheumatologist office for a shoulder infiltration with betamethasone (Diprostène®). He denied any allergy to food, drugs or latex. Within 2 min following the intra-articular injection, a nasal pruritus and a conjonctivis appeared while the patient had to lie down because of dizziness. At the same time, a dyspnoea associated to a tongue's oedema and a generalized urticaria were observed while a drop in blood pressure occurred. No epinephrine was injected by the practitioner. The paramedics' service was called to rescue. When they arrived, arterial blood pressure was 65/30 mmHg associated to a tachycardia (135 b/min). All the symptoms relieved by volume loading and methylprednisolone (Solumedrol®). Hopefully, his clinical condition improved and he could be discharged home the day after without sequelae.

Six weeks later, with the patient's consent, cutaneous tests to latex, to betamethasone, and to the excipients (carboxymethylcellulose, macrogol 4000) and the conservatives (parabens) of Diprostène® (kindly provided by the laboratory) were performed. Cutaneous tests were performed according to the standardized procedures recommended by the French Society of Anesthesiology and Critical Care Medicine (2). Prick-tests (PTs) and intradermal tests (IDTs) to betamethasone, carboxymethylcellulose and parabens remained negative as PTs to latex. The PT and IDT since 10^{-2} dilution to Diprostène® were positive in 15 min. Prick-test to macrogol 4000 was found to be positive. Intradermal tests since 10^{-2} dilution to macrogol 4000 was positive and triggered in 2 min a facial erythema and a periorbital oedema.

Taken together, clinical symptoms and allergological assessment results confirm the onset of an anaphylactic reaction to macrogol 4000. The clinical arguments were the onset delay of the reaction between the Diprostène® injection and the reaction, the clinical symptoms belonging to the triad of hypersensitivity reactions: cutaneous-mucous signs, cardiovascular and respiratory manifestations and their severity which evoked a grade III allergic hypersensitivity reaction (1). The allergological arguments were: the positivity of the cutaneous tests to Diprostène®; the negativity of the cutaneous tests to betamethasone, carboxymethylcellulose and parabens; the positivity of the cutaneous tests to macrogol confirming, therefore, its responsibility and the IgE-mediated mechanism of the reaction; the IDT with macrogol triggering a grade II reaction.

Allergic reactions to PEGs have been mostly reported with lavage solutions before coloscopies. In these previous cases, the presumptive diagnosis was determined on clinical arguments, with no further tests performed to establish the mechanism of the reaction (3–5). However, to our knowledge, the present anaphylactic reaction to Diprostène® because of macrogols, is the first case supported by an allergological assessment. This confirms the need for systematic allergological investigation with all conservatives and excipients to identify the allergenic determinant. However, macrogol testing might be dangerous and we speculate that IDT with macrogol should be performed only if the PT is negative.

In our patient, the supine position (6) and the endogenous sympathetic activation were probably lifesaving in absence of exogenous epinephrine injection which remains the drug of choice in case of anaphylaxis. Hopefully, the Solumedrol® injected by the paramedics did not contain macrogol. We consider necessary to emphasize that excipients or conservatives must be taken into account as a potential source of adverse reactions to drugs. Physicians should be aware of the possibility of hypersensitivity reaction with macrogols.

*CHRU Hôpital Central
Service d'anesthésie-réanimation chirurgicale
Nancy
France
E-mail: pascale.dewachter@wanadoo.fr

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References

1. Johansson S, Hourihane J, Bousquet J, Bruijnzeel-Koomen C, Dreborg S, Haahtela T et al. A revised nomenclature for allergy. An EAACI position statement from the EAACI position statement from the EAACI nomenclature task force. Allergy 2001;**56**:813–824.
2. Prévention du risque allergique peranesthésique. Recommandations pour la pratique clinique. Ann Fr Anesth Reanim 2002;**21**(Suppl. 1):1–180.
3. Schuman E, Balsam P. Probable anaphylactic reaction to polyethylene glycol electrolyte lavage solution [letter]. Gastrointest Endosc 1991;**37**:11.
4. Brullet E, Moron A, Calvet X, Frias C, Sola J. Urticarial reaction to polyethylene glycol electrolyte lavage solution [letter]. Gastrointest Endosc 1992;**38**:400–401.
5. Stollman N, Manten H. Angioedema from oral polyethylene glycol electrolyte lavage solution. Gastrointest Endosc 1996;**44**:209–210.
6. Pumphrey R. Fatal posture in anaphylactic shock [letter]. J Allergy Clin Immunol 2003;**112**:451–452.

An unusual pattern of meat allergy

H. C. Bourne*, P. Restani, M. Moutzouris, C. H. Katelaris

Key words: immunoblot; meat allergy; skin-prick tests; urticaria.

Allergy to meat is very uncommon. It has been described most frequently in children in association with cow's milk and beef allergy (1). Occasional case reports have described acute onset of allergy in adulthood (2).

We report a rare case of adult onset allergy to multiple cross-reacting meats.

A 61-year-old female presented with an 18-month history of acute urticarial reactions. All the reactions occurred following the consumption of meat or meat products. She had the most severe reaction after the consumption of a stew containing veal, potatoes and tomatoes.

Urticarial reactions developed following consumption of beef, pork, lamb, kangaroo and rabbit. She was able to consume milk, chicken, eggs and fish without any difficulties. Since July 2002, she had avoided all meat products and had no further reactions. However, she was able to consume meat such as prosciutto and other ham products in small quantities. There was no history of atopy. Previously she had experienced an episode of angioedema that was associated with the consumption of aspirin but there was no previous history of reactions to other medications.

Skin-prick tests (SPT) were performed using the fresh food by the prick–prick method and a panel of commercial reagents which included cat, dog, cockroach, house dust mite, cow's milk, egg white, egg yolk, wheat, peanut and soy supplied by Hollister-Stier (Spokane, USA). Specific IgE was measured using Pharmacia CAP RAST (Uppsala, Sweden). Penicillin sensitivity was investigated using the penicilloyl polylysine (PPL) and a minor determinant mixture (MDM) (Allergopen, Reinbek, Germany). SDS-PAGE and immunoblotting were performed according to the method described by Restani et al. (3).

A positive reaction occurred with cat, dog, house dust mite and cow's milk. Skin testing was performed with fresh beef, pork, lamb, kangaroo, rabbit, prosciutto, commercial ham and bovine serum albumin (BSA). Positive reactions were seen with all the meat tests. Skin testing with penicillin reagents was negative. Measurements of specific IgE to beef, pork and lamb were positive. Sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE) and immunoblotting were performed with cooked beef, chicken, turkey, horse, pig and kangaroo. The results demonstrated a specific binding of circulating IgEs to a protein having a molecular weight of 81 kDa, and common to beef, horse, pig and kangaroo. A 41-kDa band was also positive for all meat tested. BSA (1, 4) and bovine serum gamma globulin (5) have both been described as clinically relevant allergens in beef. Actin and tropomyosin have also been described but are not considered significant meat allergens (3, 5). On immunoblot, our patient reacted to an 81-kDa protein, which we have not yet fully identified. The patients' serum also reacted to a 41-kDa band present in all the meats, which corresponds to actin. The significance of binding to actin is unclear. A previous study has demonstrated a high number of positive responses to actin on immunoblot but not confirmed by SPT (3). Actin may be a possible allergen but in polymerized form (the muscular form) does not bind antibodies. Food manufacturing processes may affect the allergenicity of food products through inactivation or destruction of specific epitopes (6). Prosciutto is processed by seasoning and salt curing which may have resulted in a lack of allergenic epitopes in this patient. However, she did develop a wheal to prosciutto on SPT. A unique aspect of this case is the finding of a positive skin test with kangaroo meat, which supports the clinical observation of the development of urticaria following ingestion. This is the first case report of allergy to kangaroo meat. Avoidance of all mammalian meat has resulted in remission of the urticarial reactions.

*Regional Department of Immunology and Allergy
Royal Victoria Infirmary
Newcastle-Upon-Tyne
UK
Tel: 0191 282 5517
Fax: 0191 282 5070
E-mail: helen.bourne@nuth.northy.nhs.uk

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References

1. Fiocchi A, Restani P, Riva E, Qualizza R, Bruni P, Restelli AR et al. Meat allergy I: Specific IgE to BSA and OSA in atopic, beef sensitive children. J Am Coll Nutr 1995;**14**:239–244.
2. Graham C, Sussman GL, Beezhold DH. Immediate hypersensitivity reaction to venison and beef [Abstract]. J Allergy Clin Immunol 1997;**99**:S144.
3. Restani P, Fiocchi A, Beretta B, Velona' T, Giovannini M, Galli CL. Meat allergy III-Proteins involved and cross-reactivity between different animal species. J Am Coll Nutr 1997;**16**:383–394.
4. Werfel SJ, Cooke SK, Sampson HA. Clinical reactivity to beef in children allergic to cows milk. J Allergy Clin Immunol 1997;**99**:293–300.
5. Ayuso R, Lehrer SB, Tanaka L, Ibanez MD, Pascual C, Burks AW et al. IgE antibody response to vertebrate meat proteins includes tropomyosin. Ann Allergy Asthma Immunol 1999;**83**:399–405.
6. Paschke A, Besler M. Stability of bovine allergens during food processing. Ann Allergy Asthma Immunol 2002;**89**(Suppl): 16–20.

The Child Behaviour Checklist in the study of emotional and behavioural problems in children with asthma

K. Reichenberg*

Key words: asthma; Child Behaviour Checklist; children; emotional and behavioural problems; psychological adjustment.

The Child Behaviour Checklist (CBCL) is the most commonly used questionnaire to assess parent-reported emotional and behavioural problems in children and adolescents. In two of the 120 questions in the 1991 version of the questionnaire, on which most published studies are based, parents are asked to report if their child suffers from allergy or asthma. These two questions were, as were all items, included on the assumption that they would help predict referrals to child psychiatric services. This did not hold true and the answers to the two items were eliminated in summation of scores (1).

Child Behaviour Checklist insufficient as a single source in research on adjustment in childhood asthma.

The present study was carried out to determine if the item on presence of child's asthma can be used together with the other questions to study the epidemiology of emotional and behavioural problems in childhood asthma. The Swedish 1992–93 normative sample of 1308 6–16-year olds,