

Fatal food allergy and opportunities for risk minimisation

Jan Sinclair

IgE-mediated food allergy affects up to 6% of children and 2% of adults.¹ Fatal food allergic reactions are rare. Management of food allergy requires accurate identification of allergen(s), risk assessment, education on allergen avoidance / management of allergic reaction, and follow up.² A case of fatal allergic reaction to cashew ingestion is reported, illustrating the importance of these aspects of management.

Case report

By age 4 years the child had experienced three allergic reactions. The initial reactions consisted of abdominal pain, urticaria and vomiting, with no cardiorespiratory symptoms, treated with oral antihistamine. Cashew (nut) was the suspected cause, confirmed on testing.

The third reaction included respiratory involvement (a lump in the throat, “asthmatic” cough, and difficulty breathing). Symptoms resolved over 2 hours, treated with oral antihistamine. On paediatric review an adrenaline autoinjector (EpiPen®) was discussed but not specifically recommended, and an allergic reaction plan was not provided. Follow-up was not arranged.

Over the next 3 years the child had problematic asthma, managed with high doses of inhaled steroids, long-acting β_2 sympathomimetics, and occasional courses of oral steroid without good control. Further paediatric review was pending.

At age 8 he had anaphylaxis after eating whole cashew nuts (urticaria, cough, wheeze, dyspnoea and vomiting). He was promptly taken to a medical centre and treated for anaphylaxis, with IM adrenaline and oxygen. Advice was sought from the local hospital emergency department, with antihistamine and corticosteroid advised.

Symptoms worsened, an ambulance was called, and further treatment given (adrenaline IM and salbutamol by inhalation). There was progressive hypoxia, vomiting and probable aspiration, and a seizure. Intubation and CPR were instituted but resuscitation was unsuccessful.

Cause of death was status asthmaticus attributable to cashew nut anaphylaxis.

Discussion

While food allergy is common, fatalities from food allergic reactions are rare. This case tragically illustrates key points on the management of those at risk of severe food allergic reactions, and also the early management of anaphylaxis when it occurs.

Avoidance of specific allergens is the cornerstone of management of patients with food allergy. Accurately identifying allergen(s) necessitates testing, undertaken in this case. Importantly skin prick test or specific IgE results do not predict likelihood of anaphylaxis.

Education on allergen avoidance needs to be provided to parents, caregivers, and patients. Children and young people need age appropriate education to become competent and confident in recognition and avoidance of specific allergens.

A written action plan should be provided for all patients with food allergy. Plans are available from the Australasian Society of Clinical Immunology and Allergy (www.allergy.org.au). The plan should include an adrenaline autoinjector for all patients with a history of food-induced anaphylaxis, as in this case, with definite respiratory symptoms on the third cashew exposure.

Adrenaline autoinjectors should be considered for patients with less severe allergic reactions where there are other risk factors for anaphylaxis (www.allergy.org.au). Additional risk factors for this child include:

- Age, with severe reactions more common in older children/adolescents and young adults.^{3,4}
- Asthma, with most fatal food allergic reactions occurring in patients who also have asthma. Recent active asthma may further increase the risk.^{3,4}
- Peanut and nut account for a significant proportion of fatalities. Cashew allergy is associated with severe food allergic reactions.⁵

Management of anaphylaxis outside of a hospital setting necessitates administration of adrenaline as soon as possible and ambulance transfer to the nearest hospital emergency department. Antihistamine and corticosteroids are adjuvant and should not be given prior to adrenaline in a patient with anaphylaxis.

Most food induced anaphylaxis resolves with a single dose of IM adrenaline, but some cases progress and need more aggressive therapy. Some anaphylaxis (up to 20%) is biphasic; patients with anaphylaxis need to be observed in hospital for 4–6 hours.⁶

Patients who have had anaphylaxis should be referred for specialist care, either with an allergist/immunologist or paediatrician/physician with an interest in the care of these patients.

Active management of patients with food allergy will minimise the chance of tragic outcomes as in this instance, and requires:

- Identification of trigger(s).
- Education on avoidance, with regular, age appropriate review.
- An allergic reaction plan including an adrenaline autoinjector for those with a past history of anaphylaxis, or those with risk factors for anaphylaxis on further allergen exposure.
- Follow up to ensure appropriate precautions remain in place.
- Optimising asthma control.
- Prompt administration of adrenaline for anaphylaxis, with immediate transfer to a hospital emergency department.

Author information: Jan Sinclair, Paediatric Allergist and Clinical Immunologist, Starship Children's Hospital, Auckland

Correspondence: Dr Jan Sinclair. Starship Children's Hospital, Private Bag 92024, Auckland, New Zealand. Email JanS@adhb.govt.nz

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