

CASE NOTE

White button mushroom food hypersensitivity in a child

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Abstract: We reported a child with anaphylaxis to edible white button mushroom, a disorder not previously described.

Key words: anaphylaxis; childhood; mushroom; prick-prick tests.

BW is an atopic 13-year-old Caucasian boy, born at term, the result of a pregnancy complicated by gestational diabetes, and breastfed for the first 13 months of life. He developed eczema and IgE anaphylactic hypersensitivities to cows milk, hen's egg and peanut in infancy. Recurrent asthma developed by the age of 3 years. His anaphylactic hypersensitivity to cows milk and egg resolved by the age of 3 and 5 years, respectively, but at the age of 5 years an anaphylactic reaction followed inadvertent ingestion of peanut in chocolate.

For the last 2 years, he has complained of increasing nausea, discomfort in the mouth and throat and itching of the ears whenever he ingests mushroom in foods. Twelve months ago, after ingesting mushroom in pasta, he rapidly developed discomfort in the mouth, itchy ears, nausea and diaphoresis. Profuse vomiting developed 30 min later but symptoms then resolved. No other persons ingesting the same food had adverse symptoms. Six months ago his mother was cooking white button mushroom at home. Within 2 min of commencement of cooking the mushroom preparation, BW, in an adjacent area, developed pruritus of face, ears and neck, discomfort in the throat and became distressed. The mushroom was eliminated from the area, he was given oral ant-histamine and symptoms resolved over 30 min. Other family members tolerate mushrooms.

Allergen skin prick tests were performed using a single headed lancet technique by prick-to-prick technique with fresh and cooked mushroom¹ (See Table 1). The history of reported reactions to mushroom and mushroom vapours, the skin test reactivity to button and field mushroom in BW but not his mother, is consistent with IgE-

Table 1 Results of mushroom skin prick test

	BW	Mother
<i>Button Mushroom (raw)</i>	6 mm	1 mm
<i>Button Mushroom (cooked)</i>	6 mm	1 mm
<i>Field Mushroom (raw)</i>	8 mm	1 mm
<i>Field Mushroom (cooked)</i>	5 mm	1 mm
Saline control	0 mm	0 mm
Histamine control (1 mg/mL)	2 mm	3 mm

Italic represents natural foods by prick-to-prick technique.

mediated hypersensitivity to mushroom. A double blind placebo controlled mushroom challenge has not been undertaken.

Button mushroom (*Agaricus bisporus*), is the most extensively cultivated mushroom in the world, mainly in Europe, North America, China and Australasia, accounting for 38% of the world production of cultivated mushrooms.² Field mushroom (*Agaricus campestris*) is a close relative to button mushroom and both belong to class basidiomycetes. Hypersensitivity to the spores from *Agaricus bisporus* is a rare cause of occupational lung disease and contact dermatitis among workers in mushroom-related agricultural industries.^{3,4} *Boletus edulis*, another species of class basidiomycetes, is an edible mushroom implicated in a case of IgE-mediated food allergy – this has been attributed to digestion-resistant protein of 75 kDa.⁵ One form of oral allergy syndrome in adults has been attributed to heat labile mushroom proteins of 43–67 KD size seems cross react to molds.⁶ Cooking mushroom increases its starch, total dietary fibre, and acid-hydrolyzed fat but decreases crude protein and chitin concentrations.⁷ The overall extent of edible mushroom manifesting as food hypersensitivities is not known.

Key Points

- 1 Mushroom allergy is rare in childhood.
- 2 However, it can elicit anaphylactic reactions.
- 3 Hypersensitivity may be detected by prick-prick testing with fresh mushroom.

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