Late presentation of egg white and milk protein allergy as rhinitis and otitis media

Introduction

Food allergies are an important cause of paediatric morbidity. Hypersensitivity to cow's milk and egg typically presents in early life. Respiratory symptoms are uncommon and isolated rhinitis is particularly rare, accounting for as few as 4–6% of cases of proven allergy to egg or milk protein in very young children. Most children will 'outgrow' this food hypersensitivity by the end of their first decade. This article describes the case of a 12-year-old girl presenting with a 3-month history of rhinitis and glue ear. Extended skin prick testing revealed raised levels of immunoglobulin E (IgE) to cow's milk and egg white. Avoidance of these triggers lead to resolution of her nasal symptoms. Clinicians should be aware of the potential for late presentation of food allergy manifesting as a rare cause of rhinitis and the value of extended allergy testing.

Discussion

Food allergies are an important cause of morbidity among children. Cow's milk and egg protein are two of the commonest causes, producing allergy in 2.5% and 1.3% of western cohorts respectively (Mahesh and Vedanthan, 2014). Children generally outgrow egg or milk allergies by their early school years (Bock, 1987; Høst and Halken, 1990), with a shift in sensitivity beyond infancy towards inhalant allergens (Kulig et al, 1999; Huang, 2007). The clinical manifestations of food hypersensitivity predominantly affect the gastrointestinal tract and skin (Savage et al, 2007; Skripak et al, 2007; Waserman and Watson, 2011). Respiratory symptoms are considerably less common, particularly nasal symptoms including sneezing, rhinorrhoea, itching and congestion in the absence of pulmonary effects such as wheezing or breathing difficulties. In one study of 807 patients with IgE-mediated cow's milk allergy (median age of first attendance 13 months, median follow-up 54 months), only 6% presented with isolated upper respiratory tract symptoms (Skripak et al, 2007).

The literature on this topic is almost exclusively confined to paediatric allergy journals. This case serves to remind all clinicians that a condition common to everyday practice can have a very rare cause and present in a considerably older population than expected. The initial specialist referral was also for another reason (hearing loss).

The value of extended allergy testing in cases of allergic rhinitis to causes beyond environmental agents and pets must also be considered. However, the authors suggest judicious use of this clinical tool as guided by a detailed history from which an association between symptoms and particular foods may be elicited. Once the diagnosis is made, allergen avoidance becomes one of the key initial management strategies alongside further guidance from

LEARNING POINTS

- Allergy to foodstuffs is relatively common, affecting around 6% of the paediatric population.
- The symptoms of food allergy typically affect the skin, gastrointestinal tract and respiratory tract.
- Isolated allergic rhinitis as a result of food allergy is rare and usually presents in the first few years of life.
- Rhinitis and otitis media presenting beyond the first decade to an ear, nose and throat clinic may very rarely be a manifestation of food allergy.
- Investigation with an extended skin prick test panel may be of value if the history suggests symptoms are food-induced.

CASE REPORT

A 12-year-old girl presented to a general ear, nose and throat clinic with a 3-month history of worsening left-sided hearing loss on a background of intermittent ear infections. She incidentally gave a history consistent with allergic rhinitis. Examination revealed fluid behind the left tympanic membrane and large inferior turbinates. Investigation with tympanogram and audiogram suggested a left conductive hearing loss. She was prescribed betamethasone steroid nasal drops and nasal balloon autoinflation.

At follow-up the patient's left ear audiogram had improved but was not yet within the normal range. Fluticasone and hypertonic saline nasal sprays were prescribed and formal allergy testing arranged. This revealed a raised immunoglobulin E (IgE) level, but specific IgE to routine allergens including cat, house dust mite, mixed grasses and mould were all negative.

At the second follow-up appointment the patient denied any recent ear infections, but she complained of ongoing prominent rhinorrhoea and sneezing and left tympanogram again demonstrated a flat trace. The patient's mother was concerned about her nasal symptoms and was keen that further allergy testing be undertaken. At her request extended allergy testing was performed which revealed an allergy to egg white and cow's milk in the form of raised specific IgE to these substances.

At follow-up avoidance of egg and dairy had led to resolution of her nasal as well as otological symptoms and normalization of the patient's audiogram.

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an allergy specialist (Waserman and Watson, 2011). The improvement in the patient's audiogram preceded the avoidance of egg and milk products and is in keeping with the typical fluctuating course of otitis media with effusion, which may have settled spontaneously and indeed irrespective of treatment for the patient's rhinitis. **BJHM**

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An alternative method of central line insertion using a 16G cannula

During an emergency laparotomy a dilator became desterilized when placing an ultrasound-guided central venous catheter into the internal jugular vein for urgent inotropic support. In the interests of an immediate solution a 16G (orange) cannula was used in its place to dilate the initial puncture site as it was of near identical calibre to the dilator (*Figure 1*). Seeing no blood in the cannula catheter confirmed safe dilation of the skin and subcutaneous tissue only. This was confirmed with ultrasound and the central venous catheter was then passed easily. A Seldinger technique was used by removing the cannula flashback chamber and cap (*Figure 2*).

Central venous catheter dilators are not opaque and risk inadvertent venous puncture by advancement beyond the subcutaneous tissues when dilating the initial puncture site (Scott and Collier, 2001). The transparent cannula enables visualization of any inadvertent venous puncture and is thus proposed as a convenient emergency alternative. **BJHM**

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Figure 1. Photograph showing the comparative sizes of a standard central venous catheter dilator and 16G cannula (flashback chamber and cap removed).

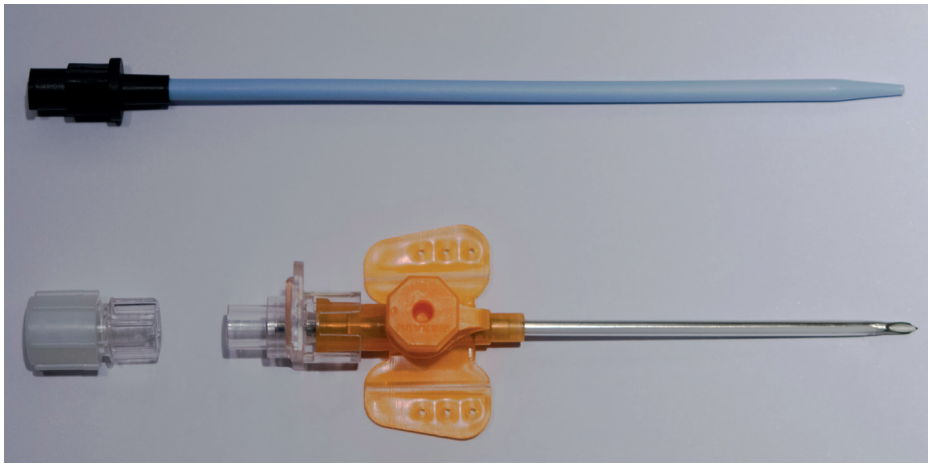

Figure 2. Clinical photograph demonstrating the technique used on a neck simulator. The cannula was advanced while withdrawing the needle.