

Otitis serosa: A Food Allergy?

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Serous otitis media with effusion (OME) is a chronic inflammatory disease of the mucoperiosteal lining of the eustachian tube, middle ear, and mastoid air cells. The hearing impairment related to this disorder is caused by recurrent accumulation of fluid behind the tympanic membrane. OME is one of the most common causes of acquired hearing loss in children. The disorder is diagnosed by tympanometric abnormalities. Audiometry reveals a low-frequency hearing loss, and the disorder is associated with a conductive hearing loss in the speech frequencies.

OME has been reported in 23-83% of patients referred to allergy evaluation, especially in patients with allergic rhinitis or allergic asthma [1]. This wide range may be due to differences in the definition of allergy, OME, and in study design. In a recent study of children (mean age 4.6 years) with refractory OME, a very high frequency of 64% (66/104) was found. However, this result should be interpreted with some caution because of rather loose diagnostic criteria of food allergy and lack of double-blind, placebo-controlled challenges [2].

In a review on the role of IgE-mediated hypersensitivity in development of OME it was concluded that recurrent OME is associated with allergic rhinitis in about one-third of the studied population [3]. Among patients with allergic rhinitis and OME, the vast majority suffers from allergy against inhalant allergens. Only a small proportion of OME and allergic rhinitis is caused by food allergy, especially against dairy products, and especially in children below the age of 2 years [3].

Mechanism

The underlying mechanism of OME in association with allergic rhinitis has not been completely clarified. However, in the great majority of children with OME and allergic rhinitis the middle ear mucosa is not the target organ. Rather, OME develops due to eustachian tube dysfunction caused by allergic (mainly IgE-mediated) reaction in the nasal mucosa. There is some evidence that inflammatory mediators from the nasal mucosa are transported via the nasal mucociliary system to the nasopharyngeal orifice of the eustachian tube [3].

Role of Food Allergy in Patients with OME without Allergic Rhinitis

In a subgroup of children with OME without diagnosed allergic rhinitis, the effect of elimination diets (especially milk-free diet) has been reported [4, 5]. Similarly, in adults with refractory serous otitis media about one-third resolved on appropriate elimination diet in contrast to lack of effect in controls [6].

Risk Factors Associated with OME

During the first 2 years of life, recurrent OME is significantly associated with the following risk factors: exposure to tobacco smoke, short duration of breast-feeding (< 3 months), supine feeding [7], and group day-care [8].

Conclusion

OME is rarely caused by allergy to food. However, in a subgroup of children with allergic rhinitis caused by food allergy [9], in a subgroup of young children with recurrent OME, and also in adults with refractory OME, the possibility of food allergy should be considered. The diagnosis of food allergy in OME should be based on proper diagnostic measures including double-blind, placebo-controlled food challenges.

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