Allergic to country life...

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Background: Multiple food allergy, especially to staple foods like egg and cereals is uncommon in adults. Egg allergy in this age group often results from primary inhalant sensitization to bird feathers. Conversely, most patients with respiratory allergy to cereals can tolerate ingestion. We present an unusual case of multiple food allergy in an adult patient.

Report: A 45-year-old female rural worker, with prior history of rhinitis and asthma, was referred to our consult with complaints of oropharyngeal pruritus, cough and abdominal discomfort immediately after ingestion of cereal-containing foods. She had also noted retrosternal discomfort and tightening after ingestion of egg or poultry. Prior to these episodes, she referred worsening of her respiratory symptoms when handling cereal flour or grain and chicken feathers. Physical examination and lung function tests were normal. An upper digestive endoscopy with esophageal biopsies was performed, with no pathologic changes found. Skin prick tests (SPT) were positive for extracts from wheat, barley, oat, rye, corn and rice flour, as well as for egg yolk, chicken and feather extracts. SPT were also weakly positive for lipid transfer protein (LTP Pru p 3) and some aeroallergens: pollens from grass, weed mix, birch and plane tree, as well as dog epithelium. Immunocap ISAC revealed positivity for two wheat proteins (LTP and alpha-amilase inhibitor), and to egg livetin, Gal d 5. Concerning the inhalant allergens, there was strong positivity to the PR-10 protein Aln g 1 and moderate to grass, plane tree and cat allergens. Immunoblotting demonstrated several positive bands in barley, wheat, oat, rye, rice and corn lanes. IgE binding to rice proteins was almost completely inhibited by barley, rye, oat and wheat extracts and partly inhibited by corn; IgE binding to corn proteins was partly inhibited by extracts from Pooideae cereals and less by rice. The patient initiated an all cereal, egg and poultry avoiding diet with no further complaints, refusing oral challenge.

Clinical Relevance: This patient shows a typical case of bird-egg syndrome and additionally seems to have developed a similar process with cereals. Immunoblot analysis suggests a primary sensitization to cereals of the Pooideae subfamily with cross reactivity to the Bambideoae and Panicoideae subfamilies, which is uncommon. Wheat LTP and alpha-amilase inhibitor have been highlighted both in food and inhalant allergy to cereal flour, but the simultaneous presence of these two forms of cereal allergy in the same patient is also a rare situation.