

Protein contact dermatitis caused by chicken meat in bird-egg syndrome

Laura Berbegal¹ , Francisco J. DeLeon², Iris González³ and Juan F. Silvestre³

¹Dermatology Department, Hospital Marina Salud, 03700, Dénia, Alicante, Spain, ²Dermatology Department, Hospital Universitario Morales Meseguer, 30008, Murcia, Spain, and ³Dermatology Department, Hospital General Universitario de Alicante, 03010, Alicante, Spain

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Protein contact dermatitis (PCD) is a frequently under-diagnosed entity. Clinically, it presents with cutaneous symptoms (pruritus, urticaria, and eczema) following contact with the responsible allergen, and it primarily affects the hands (1). PCD is often occupational, especially in patients working as food handlers (2). In these cases involving food, it is important to rule out oral allergy syndrome (pruritus of the mouth, paresthesia, chelitis, and lip oedema), although the culprit food is frequently well tolerated when eaten (3).

Case Report

A 30-year-old female office worker was referred because of a 1-year history of erythematous and scaly lesions on the palms of the hands (Fig. 1a). A previous skin biopsy had been compatible with eczema. The past medical history included atopic dermatitis during childhood, and allergic rhinitis with positive prick test results for cat, dog and horse epithelium, feathers, and dust mites. The patient also had food allergies for egg yolk and prawns (positive in prick tests and for specific IgE). The patient had been diagnosed with bird-egg syndrome, and avoided consuming both egg yolk and poultry, despite not having gastrointestinal symptoms when eating cooked chicken. However, during the history-taking, she mentioned pruritus when handling raw poultry.

Patch testing with the Spanish baseline series (4) showed positive reactions to nickel sulfate [day (D) 2, ++; D4, ++], with past relevance. The prick-by-prick test with chicken meat gave a positive result (Fig. 1b). Following a

period of glove use and topical treatment with corticosteroids, the lesions on the hands disappeared (Fig. 1c). The final diagnosis was PCD in the context of bird-egg syndrome.

Discussion

In egg allergy, the protein fractions of the egg white are considered to be the main allergens. However, in bird-egg syndrome, patients are sensitized to the egg yolk via bird proteins that are also found in feathers, droppings, and chicken serum. The responsible allergen for this cross-reactivity seems to be α -livetini, or chicken serum albumin (Gal d 5). α -Livetini is a partially thermostable protein; that is, heat reduces its allergenicity, so that many patients tolerate cooked meat and fried eggs (5).

These patients suffer from rhinoconjunctivitis and asthma following contact with bird antigens via feathers, droppings, serum, and meat. Gastrointestinal symptoms or oral allergy symptoms (lip oedema and oral pruritus) may also occur after consumption of egg yolk or chicken meat. Some authors have also described contact urticaria as a local reaction to skin contact with raw meat (6). As in our case, other studies have reported that patients with bird-egg syndrome may present with a concomitant allergy to fish/shellfish (in up to 30% of cases) (6).

To our knowledge, this is the first reported case of PCD in a patient with bird-egg syndrome. Unlike many other reported cases, our case is not occupational; as we all handle food to some extent, it is important to generally consider this diagnosis. It is interesting to highlight the symptoms that α -livetini (chicken serum albumin) may cause in these patients in terms of PCD or contact urticaria, in addition to the respiratory and digestive symptoms already known to occur in this syndrome.

Correspondence: Laura Berbegal De Gracia, Hospital Marina Salud. C/ Benidla SN. 03700 Dénia (Alicante), Spain. Email: lauraberbegal@gmail.com

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Fig. 1. (a) Erythematous and scaly lesions on the palms of the hands, compatible with eczema. (b) Positive prick-by-prick test result with chicken meat. The positive control (histamine solution) showed a positive reaction, and the negative control (saline solution) showed no response. (c) Resolution of the lesions following glove use during handling of meat and treatment with topical corticosteroids.

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