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**Ascites as a Rare Presentation of Eosinophilic Enteritis in a Pollinic Patient**

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López-Sáez MP<sup>1</sup>, Magdalena Bethencourt K<sup>1</sup>, Muñoz Tornero M<sup>2</sup>, Alajarin Cervera M<sup>2</sup>, Serrano Santos E<sup>1,3</sup>, Sánchez-Guerrero Villajos I<sup>1</sup>, López Sánchez JD<sup>1</sup>

<sup>1</sup>Allergy Department, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

<sup>2</sup>Gastroenterology Department, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

<sup>3</sup>Biochemical Department, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

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Eosinophilic gastrointestinal diseases (EGIDs) are chronic inflammatory disorders whose diagnosis is confirmed by infiltration of eosinophils in the digestive tract wall in the absence of other causes of eosinophilia [1]. This infiltration varies based on the part of the digestive tract involved. Although its etiology is unknown, the infiltration has been shown to be associated with allergy and involved in immunologic responses to different types of food and aeroallergens [2-6]. Eosinophilic enteritis (EE) is a rare disease, which is classified into 3 subtypes according to the layer of the digestive tract wall involved (mucosa, muscle, and subserosa). The stomach and duodenum are the most frequently affected areas, and clinical manifestations depend on the location, extension, and depth of the inflammatory infiltrate, with ascites being the rarest presentation, owing to involvement of the intestinal serosa [1]. Treatment is difficult, with a high relapse rate that diminishes patients' quality of life [7].

We present a case of EE with repeated seasonal ascites in a 36-year-old woman with a history of rhinoconjunctivitis and bronchial asthma since childhood due to pollen sensitization. The patient was referred to the allergology department for further assessment, because in recent years, and coinciding with the spring months, she had experienced 5 episodes of abdominal distension and oliguria preceded by colic and diarrhea. In the first 2 episodes, which were the most intense, she had to be hospitalized on an internal medicine ward (in April and May of 2 consecutive years). Most outbreaks coincided with nasal conjunctival and bronchial symptoms.

Findings were similar during both hospitalizations: free abdominal fluid was detected by ultrasound and computed axial tomography. Paracentesis revealed clear ascitic fluid, with 95% polymorphonuclear eosinophils and negative cultures. The eosinophil count in peripheral blood was higher than 23% (2200/ $\mu$ L). Gastroscopy with biopsy sampling at different levels revealed normal esophagus and gastric mucosa, bulbitis, and eosinophilic infiltration in the lamina propria of the duodenum (40 eosinophils per high power field). Colonoscopy, general biochemistry, chest and abdomen x-rays, and echocardiograms were normal, and findings for blood cultures, tumor markers, and serology were negative. Total serum IgE was >390 kU/L.

In the intercritical periods, outside the spring, she had intermittent, milder abdominal discomfort, with colic, flatulence, and/or diarrhea, which she attributed to "poor digestion" and which she eventually associated with foods such as salads, nuts, fruit, and legumes. The symptoms appeared about 60 minutes after ingestion and sometimes persisted for up to 2-3 days.

The most severe episodes of pain and abdominal distension were effectively treated with oral corticosteroids. Milder episodes were only treated with a bland diet of cooked or grilled food.

In the allergy study, prick tests were positive for mites, cat and dog epithelia, pollens (grass, olive, *Parietaria*, *Artemisia*, *Plantago*, *Platanus*, palm tree), and polcalcin and negative for commercial foods, latex, peach lipid transfer protein (LTP) (Pru p 3), and profilin (ALK-Abelló). The prick-by-prick test with natural foods (fruits, vegetables, cereals, legumes, nuts, milk) was positive for orange, banana, and tomato. Serum-specific IgE (ImmunoCAP, Thermo Fisher Scientific) was negative for food and for Pru p 3 (values below 0.10 kU/L).

Table. Results of the ImmunoCAP ISAC

Allergen component	ISU-E
Ole e 7	44
Ole e 1	27
Ole e 9	7.8
Bet v 4	24
Phl p 7	19
Phl p 5	16
Der p 2	18
Der f 2	12
Fel d 1	11

Abbreviations: ISAC, Immuno Solid-phase Allergen Chip; ISU-E, ISAC standardized units for specific IgE.

The results of the ISAC (Immuno Solid-phase Allergen Chip) are shown in the Table.

After these results were obtained and given that the patient was positive to the vegetal panallergen Ole e 7, the LTP from olive tree pollen (pathogenesis-related protein [PR] 14), she was advised to avoid the food for which she had reported abdominal discomfort (corn, nuts, legumes, fruits, and various vegetables), and her clinical condition improved. She continued eating potatoes, sweet potatoes, carrots, onions, broccoli, courgette, pumpkin, rice, and wheat, which she tolerated well. She has stopped eating fruit because of abdominal pain and/or oral pruritus (although tests were positive only with natural banana and orange [prick by prick]).

Despite following the exclusion diet, she had 2 subsequent episodes of pain and abdominal distension with diarrhea in the spring. These were consistent with a higher concentration of environmental pollen in our region, especially *Olea europaea*.

In summary, we report a case of recurrent ascites in a young atopic woman. Once other causes of ascites had been ruled out, EE seemed to be the most likely diagnosis owing to the presence of peripheral blood eosinophilia, eosinophils in ascitic fluid and the duodenum, and good response to oral corticosteroids. Although ascites is the rarest presentation of EE, the patient experienced several episodes, 2 of which were confirmed and required hospitalization.

In this case, sensitization to olive pollen and its LTP Ole e 7, which is responsible for cross-reactivity between pollen and plant foods [8], could explain the digestive symptoms, both by inhaling environmental pollen in spring and by ingesting plant foods rich in LTP at any time of the year [3,4].

In the literature, we found only 1 case of EE with seasonal clinical changes. The patient was from Central Europe, and the EE was associated with sensitization to PR-10 proteins (equivalent to the main allergen in birch pollen Bet v 1), which are responsible for cross-reactivity between vegetables and birch pollen in said geographical area [9]. Worsening of inflammation and gastrointestinal symptoms was associated with consumption of vegetables and a higher concentration of environmental birch pollen. Pollen-specific immunotherapy prevented relapses. Seasonality remains controversial in eosinophilic esophagitis (the most prevalent EGID), although some studies have described an increase in the number of cases diagnosed and worsening of symptoms in the spring because of an increase in aeroallergens [3].

Treatment of EE is challenging, and, although the response to oral corticosteroids is usually good, 50% of patients experience relapses and develop chronic disease, with a significant decrease in quality of life [7]. In patients with proven sensitization to food, targeted diets may be an option, since there is not enough information in the literature to recommend elemental or empirical elimination diets [1]. In the case we report, based on the results obtained, immunotherapy with an allergen extract of Ole e 7 and Ole e 1 could improve both digestive and respiratory conditions and probably enable less restrictive diets, thus leading to better quality of life. The patient's desire to become pregnant and her twin pregnancy have made it difficult to implement specific treatment at the moment.

In conclusion, we report a case of relapsing EE of rare presentation, in which component-resolved diagnostics, absent in most cases in the literature, revealed sensitization to vegetal panallergen Ole e 7 (negative to Pru p 3, the most prevalent LTP in the Mediterranean area), thus explaining the patient's digestive condition. This case reveals that the molecular study of EE [10] may help to identify potential triggers of relapse and enable more specific treatments, such as targeted exclusion diets and specific immunotherapy. These approaches will prevent disease becoming chronic, reduce the likelihood of complications, and help improve patients' quality of life.

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#### Conflicts of Interest

The authors declare that they have no conflicts of interest.

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**María Pilar López Sáez**

Allergy Department, Hospital Clínico Universitario Virgen de  
la Arrixaca  
Ctra Madrid-Cartagena, s/n  
30120 El Palmar, Murcia, Spain  
E-mail: mpilarlopezsaez@yahoo.es