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ORIGINAL ARTICLE

Histopathologic findings in children diagnosed with cow's milk protein allergy[☆]



R. Cervantes-Bustamante^a, I. Pedrero-Olivares^b, E.M. Toro-Monjaraz^{a,*},
P. Murillo-Márquez^a, J.A. Ramírez-Mayans^a, E. Montijo-Barrios^a,
F. Zárate-Mondragón^a, J. Cadena-León^a, M. Cazares-Méndez^a, M. López-Ugalde^a

^a Departamento de Gastroenterología y Nutrición Pediátrica, Instituto Nacional de Pediatría, Mexico City, Mexico

^b Servicio de Gastroenterología y Nutrición Pediátrica, Hospital de Alta Especialidad de Ixtapaluca, Secretaría de Salud, Ixtapaluca, Estado de México, Mexico

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KEYWORDS

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Abstract

Background: Cow's milk protein allergy is the most common cause of food allergy. The challenge test, either open or doubled-blind with a placebo control, is regarded as the criterion standard. Endoscopy and histologic findings are considered a method that can aid in the diagnosis of this entity.

Aims: The aim of this study was to describe the histopathologic findings in children suspected of cow's milk protein allergy that were seen at our hospital.

Material and methods: A descriptive, observational study was conducted on 116 children clinically suspected of presenting with cow's milk protein allergy that were seen at the Department of Gastroenterology and Nutrition of the *Instituto Nacional de Pediatría*. Upper endoscopy and rectosigmoidoscopy with biopsies were performed and the findings were described.

Results: Of the 116 patients, 64 (55.17%) were girls and 52 (44.83%) were boys. The rectum was the site with the greatest presence of eosinophils per field in both groups, followed by the duodenum. In general, more than 15 eosinophils were found in 46% of the patients.

Conclusions: Between 40 and 45% of the cases had the histologic criterion of more than 15 to 20 eosinophils per field and the rectosigmoid colon was the most affected site. Therefore, panendoscopy and rectosigmoidoscopy with biopsy and eosinophil count are suggested.

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* Corresponding author. Insurgentes Sur 3700 C. Colonia Insurgentes–Cuiculco. CP 04530, Cellular phone: 0445533321176. Tel.: +10840900 ext. 1288.

E-mail address: emtoromonjaraz@gmail.com (E.M. Toro-Monjaraz).

PALABRAS CLAVE

Alergia a la proteína de la leche de vaca;
Histología;
Endoscopia;
Eosinófilos

Hallazgos histopatológicos en niños con diagnóstico de alergia a las proteínas de la leche de la vaca**Resumen**

Antecedentes: La alergia a las proteínas de la leche de vaca es la causa más común de alergia a alimentos. La prueba de reto ya sea abierta o doble ciego controlado con placebo, es considerada el estándar de oro. La endoscopia y los hallazgos histológicos son considerados métodos que pueden ayudar en el diagnóstico de esta entidad.

Objetivos: El objetivo del presente trabajo fue describir los hallazgos histopatológicos en niños con sospecha de alergia a las proteínas de la leche de vaca atendidos en nuestro hospital.

Material y método: Estudio observacional, descriptivo en 116 niños con sospecha clínica de alergia a las proteínas de la leche de vaca, atendidos en el Departamento de Gastroenterología y Nutrición del Instituto Nacional de Pediatría. Se efectuó endoscopia alta y rectosigmoidoscopia con toma de biopsias y se describieron los hallazgos.

Resultados: Se incluyeron 116 pacientes, 64 (55.17%) del género femenino y 52 (44.83%) masculino. El sitio con mayor presencia de eosinófilos fue el recto en ambos grupos, seguido del duodeno; en general se encontró más de 15 eosinófilos por campo en el 46% de los pacientes.

Conclusiones: Entre el 40-45% de los casos tuvieron el criterio histológico de más de 15-20 eosinófilos por campo siendo el sitio más afectado el rectosigmoides. Por lo tanto, se sugiere realizar panendoscopia y rectosigmoidoscopia con toma de biopsias y recuento de eosinófilos.

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Introduction

Food allergy is a diagnostic challenge, given that there is no laboratory test or radiology or imaging study that can sustain the diagnosis with good sensitivity and specificity. Currently, the double-blind, placebo-controlled food challenge test has the greatest sensitivity and specificity,¹ but it is not a practical test for the clinician in his or her office and it is uncomfortable for the patients and their families. Therefore, it is necessary to search for different processes that support clinical suspicion.

Cow's milk protein allergy (CMPA) is the most common cause of food allergy in infants^{2,3} and is defined as an immunologic reaction to the proteins in cow's milk accompanied with clinical signs and symptoms.⁴ Its prevalence worldwide varies from 2.2 to 2.8%.^{5,6}

CMPA is a very frequent, but unfortunately misdiagnosed, pathology in our environment, given that it is a clinical diagnosis in the majority of the cases.⁷

In the 1950s, CMPA was rarely diagnosed. Its suspicion and resulting diagnosis began to increase in 1970.¹ The allergen suppression test is presently regarded as the criterion standard, but there are a large number of other tests and studies that include: skin tests, cow's milk-specific IgE and IgG antibody tests, the patch test, cell function tests, and endoscopy and colonoscopy with biopsy, all of which vary in sensitivity and specificity.⁸⁻¹⁴ We now know that CMPA can be caused by one or several proteins present in cow's milk and the immunologic mechanism may or may not be mediated by IgE.^{8,15} During the last few years, intestinal biopsy has gained much importance in CMPA diagnosis, because even though it is invasive, it allows us to obtain macroscopic and microscopic data of this entity. It can

be useful when there is diagnostic doubt; the presence of more than 60 eosinophils in 6 high power fields (HPFs) and/or more than 15-20 eosinophils per field are very suggestive of this pathology.¹⁶⁻²⁰ These histopathologic alterations can present all along the digestive tract (esophagus, stomach, duodenum, rectosigmoid colon) and cause symptoms depending on the affected site.

Thus, the aim of this study was to describe the histologic findings in patients suspected of having CMPA.

Methods

A descriptive, observational, prospective, and cross-sectional study was conducted on 116 children clinically suspected of presenting with cow's milk protein allergy. They were clinically evaluated by 3 pediatric gastroenterologists from the Department of Gastroenterology and Nutrition at the *Instituto Nacional de Pediatría* within the time frame of March 2008 to September 2013. The diagnosis was made with the open food challenge test. The following variables were obtained: age, sex, weight, height, clinical manifestations (regurgitation, irritability, crying crisis, abdominal distension, rectorrhagia, diarrhea, dyschezia, laryngeal spasm, bronchial spasm, atopic dermatitis, rash). The patients were divided into 2 groups: group I: patients with no complementary feeding (0-6 months of age) and group II: patients with complementary feeding (7-13 months of age). Panendoscopy and rectosigmoidoscopy with biopsy of the esophagus, antrum, duodenum, and rectum were carried out. Biopsy was considered positive with the presence of more than 15-20 eosinophils per HPF and/or more than 60 eosinophils in 6 fields.

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