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Prolonged Hypereosinophilia in Rett Syndrome Patient Secondary to Environmental Allergy

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INTRODUCTION

Hypereosinophilia can be caused by a wide variety of etiologies and the major goal for hypereosinophilia workup is to identify disorders that require treatment and to prevent organ damage¹. Our case presents unexplained hypereosinophilia which led to an extensive workup for years. It was unexplained until an environmental intervention performed by the family resulted in sustained resolution of the hypereosinophilia.

CASE DESCRIPTION

22-year-old female with past medical history of Rett Syndrome, asthma, allergic rhinitis, and GERD presented for evaluation of asymptomatic hypereosinophilia. Physical exam was remarkable for neurodevelopmental signs associated with Rett Syndrome without additional abnormalities. Labs revealed an absolute eosinophil count of 3.4 thou/cmm, 32% eosinophils and total IgE 1330 IU/ml. Skin testing was positive for dust mite, dog and cat. A pet dog slept in her bedroom without obvious symptom manifestation with dog exposure. Milk and egg were positive on food allergy testing but avoidance did not show improvement in eosinophilia. Prednisone resulted in transient decrease in eosinophil count. CT scan could not be performed due to need for sedation. Work-up included unremarkable testing for F1P1L1/PDGFR mutation, bone marrow biopsy showing trilineage hematopoiesis without dysplasia, Aspergillus precipitant and IgE antibodies, upper endoscopy with biopsy, stool parasites, tryptase, echocardiogram and chest X-rays. After six years of persistent hypereosinophilia, the family removed the dog and the patient had normalization of eosinophil count to 0.5 thou/cmm which persisted after four years of dog avoidance.

DISCUSSION

This case highlights that while atopic disease is a classic cause of elevation of eosinophil count, it can increase levels to those found in hypereosinophilia syndrome. Thus, in persistent hypereosinophilia of unexplained etiology, animal removal should be pursued in sensitized patients.

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