Not All IgE Is Allergic In Origin: A Case Of Hodgkin’s Lymphoma Presenting With Markedly Elevated IgE

Anne K. Ellis, MD FRCPC and Susan Waserman, MD FRCPC
Division of Allergy & Clinical Immunology, McMaster University, Hamilton, ON, Canada

Executive Summary

Background: Reports are rare of markedly elevated IgE as a manifestation of a lymphoproliferative disorder.

Case Summary: We present a case of a 22 year old female referred to the allergy clinic for an extremely elevated IgE level, ultimately diagnosed with Hodgkin’s lymphoma.

• She had no history of recurrent infections, eczema or periodontal disease; stool was negative for ova & parasites. Chest X-ray revealed large bilateral anterior mediastinal masses that demonstrated prominent uptake on gallium scanning.
• Lymp node biopsy was consistent with Hodgkin’s lymphoma, nodular sclerosing subtype, grade I/II.

Conclusion: Although uncommon, markedly elevated IgE may be a manifestation of a malignant process. This diagnosis should be considered in evaluating an otherwise unexplained significant elevation of IgE.

Presentation of the Case

• A 22 year old female was referred to our allergy clinic for evaluation of elevated IgE in the setting of a 4 year history of fatigue, diffuse pruritus and a microcytic anemia
• She denied weight loss, fever or decreased appetite, but did have night sweats while taking venlafaxine, which resolved upon its discontinuation
• She had been diagnosed with both B12 and a presumed iron deficiency; treatment with B12 injections, and iron replacement did not correct the anemia
• Bone marrow aspiration confirmed the presence of iron stores
• There was associated thrombocytosis, reticulocytosis, elevated C-Reactive Protein (146.0 mg/L) and an ESR of 50 mm/hr
• Quantitative immunoglobulins demonstrated an IgE level of 22,562 kU/L, prompting the referral to Allergy & Immunology
• She had no history of recurrent infections, eczema or periodontal disease

Stool was negative for ova & parasites
• Skin prick tests were positive to trees, grass and ragweed; however there was no history of rhinitis, asthma or other allergic disease
•Spirometry and methacholine challenge revealed a mild isolated decrease in DCO, and no airway hyper-responsiveness
• Chest X-Ray revealed large bilateral anterior mediastinal masses that demonstrated prominent uptake on gallium scanning
• CT of the chest & abdomen confirmed the presence of multiple enlarged anterior mediastinal lymph nodes and mild hepatomegaly
• Lymp node biopsy was consistent with Hodgkin’s lymphoma, nodular sclerosing subtype, grade I/II

CT confirmed uptake in the mediastinal lymph nodes and also confirmed that the right lung mass was a plasmacytoma.

Discussion

• Significant elevations of IgE are seen in various allergic conditions and parasitosis. In this case, the patient had no history of atopy, and parasitic work-up was negative
• Marked elevations of IgE are also seen in IgE myeloma, but the patient’s protein electrophoresis was normal, as was the bone marrow evaluation
• Lymphomas are known to produce immunoglobulins, and cases have been reported of both B- and T-cell lymphomas associated with elevated IgE, but these are rare 4-6
• Sézary’s syndrome (a peripheral T-cell neoplasm) has been associated with elevated IgE when the malignant clone is a CD4+ helper phenotype and/or associated with eosinophilia 7,8. Abnormal cytokine profiles with increased IL-4 contribute to the hyperIgE
• Elevated IgE levels (but not marked) have also been reported in the setting of B-cell chronic lymphocytic leukemia 9,10 and in 2 patients with Hodgkin’s disease 11,12.
• Our patient presented with extremely elevated levels of IgE in the setting of chronic profound fatigue and an unexplained anemia. Only the chest x-ray confirmed evidence of an underlying malignant process. The diagnostic utility of this simple test was underscored in the process.

Conclusions

• Although uncommon, markedly elevated IgE may represent a manifestation of lymphoma or other lymphoproliferative disorder
• These diagnoses should be considered in evaluating an otherwise unexplained significant elevation of IgE

References/Bibliography


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