

Hypereosinophilic Syndrome Masquerading as Symptomatic Bradycardia

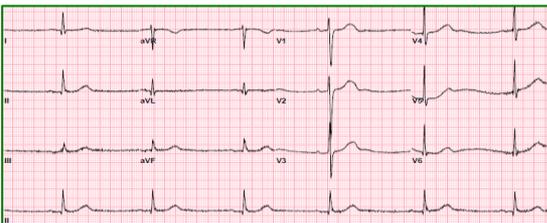
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Introduction

Hypereosinophilic syndrome is defined as a persistently elevated eosinophil count in the presence of eosinophil mediated end organ damage. This syndrome can further be divided into subcategories: primary, secondary, or idiopathic, depending on underlying etiology.¹

This report details a rare case of idiopathic hypereosinophilic syndrome, initially presenting as a first-degree heart block and symptomatic bradycardia.



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References



Case Description

A 79-year-old patient presented with complaints of confusion and shortness of breath. He was found to be bradycardic in the field to rates in the 30s for which he was given atropine prior to his admission to the Cardiac Care Unit (CCU). ECG showed sinus bradycardia and first degree atrioventricular (AV) block with a rate nadir of 36 beats per minute.

A transvenous pacemaker was placed and inotropes were initiated. Echocardiogram was performed showing mild reduction in left ventricular ejection fraction (LVEF) to 45% from 65% seen just one week prior. Etiology of cardiac symptomatology was suspected to be secondary to hypereosinophilia, as absolute eosinophil count upon presentation was markedly elevated at 7.19×10^3 cell/ μ L (reference range 0.00 - 0.59×10^3 cell/ μ L). While in the CCU, transvenous pacing and vasopressor requirements were weaned and as patient was able to maintain normotensive blood pressures and heart rates in the 40s, allowing for transfer to the step-down unit. However, the patient did experience recurrence of presyncope with ambulation, necessitating implantation of a St. Jude dual chamber permanent pacemaker. Following placement, the patient had complete resolution of symptomatic bradycardia and normalization of his LVEF.

Case Description (cont)

In addition to cardiac involvement, the patient also presented with respiratory failure, pulmonary nodules seen on CT imaging, acute on chronic renal failure and elevation in liver function tests, all suspected to be secondary to end organ damage in the setting of marked eosinophilia. A large number of specialties were involved in this patient's case to help determine etiology of eosinophilia in an effort to guide treatment towards an underlying cause. After a thorough yet unremarkable workup, including autoimmune and infectious lab assays as well as a bone marrow biopsy with cytogenetic analysis, multiple differential diagnoses were ruled out. At that time, signs and symptoms were determined to be due to Idiopathic Hypereosinophilic Syndrome, a diagnosis of exclusion.

Discussion

First degree AV block secondary to hypereosinophilia is a rare phenomenon and has only been described in a few instances in the literature.^{2,3} Our case represents a unique presentation of hypereosinophilic syndrome with initial cardiac symptomatology. This patient will require close follow up with cardiology, hematology, hepatology as well as pulmonology due to multi end organ effects of this systemic disease.