Who brought the eos?

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Clinical History - 1

- 30-year-old African American female
- Presented to outside facility with rash over entire body including palms and soles
- Found to have “hypereosinophilia” at that time
Treated with a trial of immunosuppressants without a response, including:

- Steroids
- CellCept
- Cyclosporin
- Imuran

Subsequently presented to Cedars-Sinai Medical Center 2 years after initial presentation with fever, rash and eosinophilia

Pertinent negatives:

- No travel history
- No other medications except those above
- No history of allergies or asthma
Various consults were requested, including:

- Rheumatology
- Infectious disease
- Hematology/oncology
- Pathologic evaluation: *Peripheral blood, flow cytometry and bone marrow biopsy*
Initial Labs

- WBC: 9.6 with 39% eosinophils
  - Abs eos: 3.9 (nl <0.4 x10^3/ul)
- Stool ova and parasite: Negative
- Blood cultures: Negative
- Urine eosinophils: None seen
- C-reactive protein: 2.77 (nl: 0.8 mg/dl)
- Anti-nuclear antibody: 80 = Moderate positive with a speckled pattern (nl: < 40)
- Double stranded-DNA, SCL 70, RNP, smooth muscle, SS-A, SS-B and myeloperoxidase antibodies negative
- Thyroid peroxidase antibody negative
- IgE >3000 (nl <160 IU/ml)
Cocci serologies
Galatcomannan
Aspergillus serologies
Serum Tryptase
RAST antibody panel
Complement C1q levels
Serum cortisol
CT Chest: Diffuse bilateral infiltrates

CT abdomen: No evidence of lymphadenopathy or hepatosplenomegaly
Flow cytometry on peripheral blood and bone marrow aspirate

<table>
<thead>
<tr>
<th>Populations Analysis Summary</th>
<th>%</th>
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<tbody>
<tr>
<td>Dim CD45 Blasts</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Lymphs</td>
<td>12</td>
</tr>
<tr>
<td>Grans</td>
<td>85</td>
</tr>
<tr>
<td>Monos</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td></td>
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<tr>
<td>Total Gated Events</td>
<td>100</td>
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</table>

- **Grans**: 85%
- **Lymphs**: 12%
- **Monos**: 3%
- **Blasts**: 0%

<table>
<thead>
<tr>
<th>Gale</th>
<th># of Events</th>
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<tbody>
<tr>
<td>None</td>
<td>40153</td>
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<tr>
<td>Lymphs</td>
<td>4509</td>
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<tr>
<td>Monos</td>
<td>943</td>
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<tr>
<td>Grans</td>
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<tr>
<td>Blasts</td>
<td>143</td>
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<tr>
<td>Debris</td>
<td>219</td>
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Eosinophils
T-cells - 1
T-cells - 2
Bone marrow findings - 1

- Normocellular marrow with trilineage hematopoiesis and prominent eosinophilia
- No increase in blasts
- No morphologic abnormalities suggestive of a myeloproliferative process
Bone marrow findings - 2

- Flow cytometry with the same abnormal T-cell population
  - CD4 positive, CD3 negative with bright CD5 expression and loss of CD7 antigen expression
- Karyotype pending
- Molecular studies pending
Summary of findings

- Chronic eosinophilia (2 years)
- Rash
- Bilateral pulmonary infiltrates
- Moderate positive ANA titer
- Abnormal T-cell population identified in blood and bone marrow by flow cytometry
What is your differential and how would you pursue work-up?