

**Case 40 (December 28 2006):** [N Engl J Med 2006;355:2772-2779](#)

**Demographic:** Male, 64 yrs, America North, General speciality

***Clinical features extracted from the case and entered into the query box:***

normocytic normochromic anemia  
abdominal discomfort after eating  
low serum level of high density lipoprotein cholesterol  
decreased white cell count  
decreased platelets

***Synonyms used by Isabel for the above query:***

None

**STOP !**

**Before you read further you might want to construct your own:**

- Complete differential diagnosis
- Final diagnosis

**In the following section you will find:**

- The differential diagnosis constructed by the MGH panel
- The final diagnosis of the case
- Which of the MGH panel differential diagnoses did Isabel contain
- Did Isabel suggest the Final diagnosis

***Final Diagnoses of the case according to NEJM:***

Lymphoplasmacytic Lymphoma with Waldenstrom's Macroglobulinemia. Falsely low serum HDL cholesterol test result due to presence of the paraprotein.

***Was the final diagnosis given by Isabel:***

Yes, Isabel 1<sup>st</sup> page

***Differential Diagnoses of Anemia considered by the MGH panel:***

Nutritional Deficiencies: Iron Deficiency Anemia – Click on Hematology heading  
 Vitamin B12 Deficiency: 1<sup>st</sup> page  
 Folate Deficiency: Click on Nutritional Disorders heading  
 Anemia of Chronic Inflammation – Click on Hematology heading  
 Neoplasms – Myelodysplastic Syndromes, Myelomas, Solid tumors – 1<sup>st</sup> page  
 Multiple Myeloma – Click on Orthopedics heading  
 Waldenstroms Macroglobulinemia - No

***Entire presentation cut and pasted into the Isabel query box:***

Nutritional Deficiencies: Iron Deficiency Anemia – No  
 Vitamin B12 Deficiency - No  
 Folate Deficiency - No  
 Anemia of Chronic Inflammation – No  
 Neoplasms – Myelodysplastic Syndromes, Myelomas, Solid tumors – No  
 Multiple Myeloma – 1<sup>st</sup> page  
 Waldenstroms Macroglobulinemia – No

***Isabel differential for extracted features:***

<p><b>NEOPLASTIC DISEASES</b> &lt;&lt; Click here</p> <p>↳ <u>Leukemia</u> RD</p> <p>↳ <u>Lymphoma</u> RD</p>	<p><b>INFECTIOUS DISEASES</b> &lt;&lt; Click here</p> <p><u>EBV Infection</u> RD</p>
<p>↑ <u>Waldenström's Macroglobulinemia</u> &lt;&lt; Click here</p> <p><u>Spur Cell Anemia</u> RD</p> <p>↳ <u>Drug Induced Thrombocytopenia</u> RD</p> <p><u>G6PD Deficiency</u> RD</p> <p><u>Anemia of Chronic Disorders</u> RD</p>	<p><b>LIVER DISORDERS</b> &lt;&lt; Click here</p> <p>↳ <u>Liver Abscess</u> RD</p>
<p><b>ORTHOPEDIC DISORDERS</b> &lt;&lt; Click here</p> <p>↳ <u>Malignant Bone Tumours</u> RD</p>	<p><b>NEPHROLOGY</b> &lt;&lt; Click here</p> <p><u>Nephrotic Syndrome</u> RD</p>
<p><b>NUTRITIONAL DISORDERS</b> &lt;&lt; Click here</p>	<p><b>ENDOCRINE SYSTEM</b> &lt;&lt; Click here</p>
<p><b>RHEUMATIC DISEASES</b> &lt;&lt; Click here</p>	<p><b>NERVOUS SYSTEM DISORDERS</b> &lt;&lt; Click here</p>
	<p><b>GASTROINTESTINAL DISORDERS</b> &lt;&lt; Click here</p>
	<p><b>TOXICOLOGY</b> &lt;&lt; Click here</p>

***Isabel differential for anemia:***

<b>HEMATOLOGY</b> << <a href="#">Click here</a>	<b>INFECTIOUS DISEASES</b> << <a href="#">Click here</a>
<ul style="list-style-type: none"> <li>↳ <a href="#">Autoimmune Hemolytic Anemias</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Congen Heinz Body Anemia</a>      <a href="#">RD</a></li> <li>↳ <a href="#">Megaloblastic Anemias</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Pure Red Cell Aplasia</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Aplastic Anemia</a>      <a href="#">RD</a></li> <li>↳ <a href="#">Sideroblastic Anemias</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Spur Cell Anemia</a>      <a href="#">RD</a></li> <li>↳ <a href="#">Sickle Cell Disease / Crisis</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Myelodysplastic Syndromes</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Pyruvate Kinase Deficiency</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Iron Deficiency Anemia</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Hereditary Spherocytosis</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Anemia of Chronic Disorders</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Hemoglobin F</a>      <a href="#">RD</a></li> </ul>	<ul style="list-style-type: none"> <li>↳ <a href="#">Parvoviral Infections</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">CMV Infections</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">EBV Infection</a>      <a href="#">RD</a></li> </ul>
	<b>NEOPLASTIC DISEASES</b> << <a href="#">Click here</a>
	<ul style="list-style-type: none"> <li>↳ <a href="#">Leukemia</a>      <a href="#">RD</a></li> <li style="padding-left: 20px;"><a href="#">Colorectal Neoplasms</a>      <a href="#">RD</a></li> </ul>
	<b>ORTHOPEDIC DISORDERS</b> << <a href="#">Click here</a>
	<ul style="list-style-type: none"> <li style="padding-left: 20px;"><a href="#">Osteopetrosis</a>      <a href="#">RD</a></li> </ul>
	<b>RHEUMATIC DISEASES</b> << <a href="#">Click here</a>
	<b>NUTRITIONAL DISORDERS</b> << <a href="#">Click here</a>
	<b>TOXICOLOGY</b> << <a href="#">Click here</a>