

**A 56-year-old man complains of a rapid heart rate and cough. He has felt unwell for the last eight months and has lost 50 pounds during that time. For the last 2 months he has had a decreased appetite without early satiety. He has developed constant low back pain that does not wake him up from sleep. No fevers, chills or night sweats. He has feelings of incomplete evacuation with bowel movements no dark, tarry stools or bright red blood in his stool. No headaches, chest pain, shortness of breath, leg swelling or skin rash. He has not started any new medications recently. Outside lab tests showed microcytic anemia.**

**PAST MEDICAL HISTORY:**

- 1. Radiation to the thymus as a child.**

**MEDICATIONS;**

- 1. Aspirin.**
- 2. Co-Q 10.**
- 3. Garlic.**
- 4. Cod liver oil.**
- 5. Multivitamin.**

**ALLERGIES: No known drug allergies.**

**SOCIAL HISTORY: He is single and lives with his elderly mother and uncle on a dairy farm.**

**FAMILY HISTORY: His father had dementia and died at age 75. His mother has trouble with her eyesight but still gets around well. His uncle has diabetes. An older brother and older sister are in good health. Numerous nieces and nephews are in good health. He does not have any children.**

**PHYSICAL EXAMINATION: He looks well. Temperature is 37.1, pulse 78, respirations 16, blood pressure 110/60, height is 173.5 cm, weight 70.9 kg. HEENT is normal. The oropharynx and sclerae are clear. The neck is supple without lymphadenopathy. The heart is regular, normal S1 and S2. Lungs are clear to auscultation. The abdomen is soft with normal bowel sounds. No palpable organomegaly. The extremities show no edema. Skin exam is unremarkable.**

**CBC and differential**  
**Blood smear**  
**Retic count**  
**INR**  
**aPTT**

**Bone marrow biopsy**

**Iron/TIBC**  
**Ferritin**  
**B-12**  
**Folate**

**ESR**  
**Hemoglobin electrophoresis**  
**Hemoglobin A2**  
**Haptoglobin**  
**Osmotic fragility**  
**G6PD**  
**EPO**

**Thrombin time**  
**Platelet function screen**  
**Platelet aggregometry**  
**Bleeding time**  
**Fibrinogen**  
**D-dimer**  
**Fibrin monomer**  
**Factor II, X, V, VII, IX, VIII, XI, XII, XIII**  
**Protein C**  
**Protein S**  
**Antithrombin**  
**Plasminogen**  
**Activated protein C resistance**  
**Factor V Leiden**  
**Prothrombin gene mutation**  
**Inhibitor screen**

**SPEP**  
**Serum immunofixation**  
**UPEP**  
**Urine immunofixation**  
**Quantitative immunoglobulins**  
**Serum viscosity**  
**Cryoglobulin test**

**Lytes, glucose, creat, BUN**  
**AST, ALT**  
**Alk phos, GGT, bili**  
**LDH**  
**CRP**  
**Uric acid**  
**Calcium, albumin**  
**Urinalysis**  
**Urine hemosiderin**

**Chest xray**  
**Skeletal survey**  
**Body CT**  
**V/Q scan**  
**Helical chest CT**  
**Other radiology**

**EBV serology**  
**CMV**  
**Hep C**  
**Hep B**  
**HIV**