

Atypical presentation of Multiple Myeloma with Concurrent Chronic Lymphocytic Leukemia

1. LEARNING OBJECTIVES

1. Recognize warning signs for malignancy that warrant thorough investigation.
2. Describe Multiple Myeloma (MM) and Chronic Lymphocytic Leukemia (CLL).
3. Understand potential for atypical presentations of disease(s) versus classical textbook descriptions.

2. CASE REPORT

73-year-old female with history of colon cancer status-post adjuvant chemotherapy and hemicolectomy in remission, presenting with 1-month history of fevers, night sweats, and malaise.

- **Positive review of systems:** Occasional headache, dry cough and diarrhea, tingling of her hands associated with fever onset, decreased appetite with weight loss
- **Negative review of systems:** Visual changes, photophobia, sore throat, neck, chest, or abdominal pain, vomiting, hematochezia/melena, hematuria, dysuria, myalgias, arthralgias, back pain, or rash

Past medical history: Colon cancer (with recent colonoscopy showing no reoccurrence), GERD, osteoporosis, and hyperlipidemia

Family history: Cold autoimmune hemolytic anemia (mother)

Medications: Atorvastatin, omeprazole

Social history: Avid hiker (without known tick exposure)

Physical exam: Fatigued, yet otherwise well-appearing female with stable vital signs and unremarkable physical findings, including no lymphadenopathy, no organomegaly, and no rash. Temperature follows a cyclic, nightly pattern to as high as 39.4°C (102.9°F) throughout admission.

3. INITIAL WORK-UP AND HOSPITAL COURSE

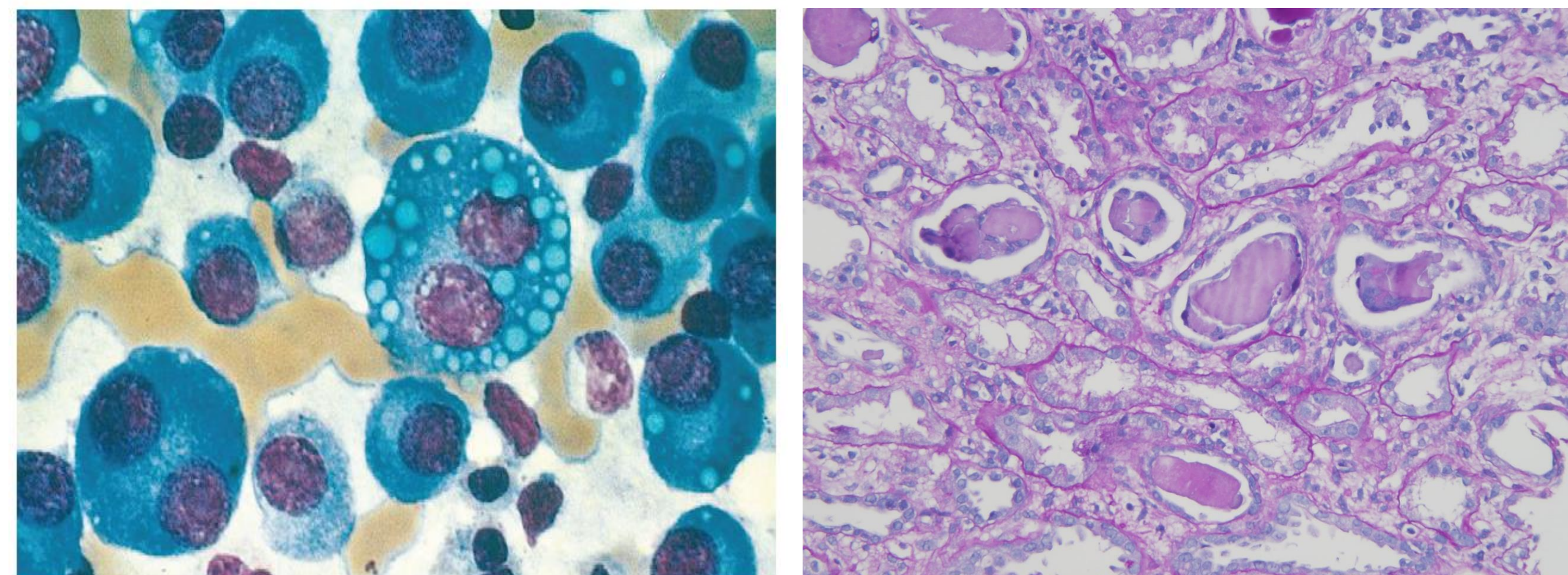
Na: 137 mmol/L	Cl: 101 mmol/L	BUN: 38 mg/dL	Glu: 88 mg/dL	Hb: 7.9g/dL	Plt: 465 x10 ³ /uL
K: 6.0 mmol/L	CO2: 23 mmol/L	Cr: 3.6 mg/dL		WBC: 21.4 x10 ³ /uL	Hct: 25.3%
Calcium: 8.1mg/dL			Lymphocytes: 59% Reticulocyte index: 0.12		

Infectious disease: Tick-borne, viral, and GI panels: Negative

Imaging: CXR, renal/abdominal US, non-contrast chest-CT: Unremarkable

Malignancy markers: SPEP and immunofixation: Increased alpha-1 and alpha-2, elevated kappa free light chain (55.47mg/L) with markedly elevated lambda (1380.80mg/L) and decreased k/l ratio (0.04)

Bone marrow aspirate (Figure 1) and renal biopsy (Figure 2):



Figures 1 and 2: Representations of multiple myeloma (bone marrow aspirate displaying hyperproliferative plasma cells³) and cast nephropathy (light chain deposition in nephrons²)

Genetic analysis: Greater than 10% clonal plasma cells (20-30% of total cellularity) on BM biopsy with lambda chain restriction and kappa monoclonal B-cell hyperproliferation with CD5+/CD20+ immunophenotype

Diagnosis : Concurrent MM and CLL

4. DISCUSSION

- Prolonged fever of unclear etiology merits a thorough malignancy evaluation.
- MM is defined by bone marrow cellularity greater than 10% clonal plasma cells in conjunction with at least one CRAB symptom: HyperCalcemia, Renal dysfunction, Anemia, and/or Bone lesions. Hyperproliferative plasma cells in MM produce excessive monoclonal proteins (example: lambda light chain). It is uncommon to have fever or night sweats.
- CLL is defined by monoclonal proliferative of mature B lymphocytes with immuno-positivity for CD5 and CD20, and most commonly presents with lymphadenopathy, splenomegaly, and B symptoms: weight loss, fevers, night sweats, and fatigue. It is uncommon to have anemia or renal dysfunction.
- Concurrent MM and CLL is present in just 0.26% of MM patients.
- This patient presented with signs/symptoms that are characteristic of both diseases, which complicated the assessment and diagnostic process.
- CLL in MM patients has an indolent course and likely responds well to MM-directed therapy, such as cyclophosphamide, bortezomib, and dexamethasone (CyBorD).

REFERENCES

1. Ailawadhi, S., Dholaria, B.R., Khurana, S., Sher, T., Alegria, V., Paulus, A., Ailawadhi, M., Mehta, A., Chanan-Khan, A. and Roy, V. (2019), Outcomes of patients with simultaneous diagnosis of chronic lymphocytic leukaemia/small lymphocytic lymphoma and multiple myeloma. *Br J Haematol*, 185: 347-350.
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3. Robbins, Stanley L., et al. *Pathologic Basis of Disease*. Saunders Elsevier, 2015.