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FROM HYPERVISCOSITY TO CONFIRMATION: A RARE CASE OF IGM MULTIPLE MYELOMA – A CASE REPORT

General Medicine

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ABSTRACT

Plasma cell disorders are monoclonal neoplasms of B-cell lymphocytes, including Multiple Myeloma, Waldenström's Macroglobulinemia, and heavy chain diseases. Multiple myeloma is commonly associated with overproduction of IgG or light chains and is characterized by hypercalcemia, renal failure, anemia, and lytic bone lesions. Waldenström's macroglobulinemia involves IgM overproduction. We report a case of a 56-year-old female who presented with fever and generalized weakness for 15 days, with a known history of idiopathic ataxia. Investigations revealed anemia and elevated IgM levels. Bone marrow examination showed plasma cell neoplasm with multiple large foci of plasma cells, and serum protein electrophoresis demonstrated an M-band. The patient was diagnosed with multiple myeloma with IgM predominance, a rare variant.

KEYWORDS

INTRODUCTION

Multiple myeloma is a malignant plasma cell disorder characterized by clonal proliferation of plasma cells in the bone marrow and production of monoclonal immunoglobulins. It commonly affects individuals over 50 years of age and presents with systemic manifestations related to end-organ damage.

CASE PRESENTATION

A 56-year-old female presented with complaints of low-grade fever and generalized weakness for 15 days. The fever was insidious in onset, intermittent, and self-relieving, with no associated nausea, vomiting, or headache. She was a known case of idiopathic ataxia for the past 5 years (since 2020).

Past History

- Appendicectomy and tubal ligation 25 years ago
- No history of diabetes mellitus, hypertension, asthma, tuberculosis, or blood transfusion

Personal History

- Vegetarian diet
- No addictions

PHYSICAL EXAMINATION

- Temperature: 99.6°F
- Pulse: 80/min
- Blood Pressure: 130/90 mmHg
- SpO_2: 99% on room air

No icterus, pallor, cyanosis, clubbing, edema, or lymphadenopathy was noted.

Systemic Examination

- Respiratory: Bilateral clear air entry
- Cardiovascular: S1, S2 normal
- CNS:
- Patient conscious and oriented
- Bilateral plantar reflex: Flexor
- Pupils: Reactive
- No meningeal signs
- Right-sided nystagmus present
- Generalized ataxia
- Dysdiadochokinesia present

NEUROLOGICAL EXAMINATION

Tone

Limb	Right	Left
Upper Limb	Normal	Normal
Lower Limb	Normal	Normal

Power

Limb	Right	Left
Upper Limb	4/5	4/5
Lower Limb	4/5	4/5

Reflexes

Reflex	Right	Left
Biceps	+2	+2
Triceps	+2	+2
Wrist	+2	+2
Knee	+2	+2
Ankle	+2	+2

LABORATORY INVESTIGATIONS

Complete Blood Count

- Hemoglobin: 8.7 g/dL (↓)
- RBC: 2.89 ×10⁶/µL (↓)
- WBC: 6170/µL
- Platelets: 1.2 lakh/µL (↓)
- RDW: 16.5% (↑)
- Neutrophils: 93% (↑)
- Lymphocytes: 2% (↓)

Renal Function Test

- Urea: 40 mg/dL
- Creatinine: 0.86 mg/dL

Electrolytes

- Sodium: 133 mmol/L (↓)
- Potassium: 3.9 mmol/L

Immunoassay

- IgM: >15.50 g/L (↑ markedly)
- IgG: 4.21 g/L (↓)
- IgA: 0.31 g/L (↓)

SPECIAL INVESTIGATIONS

Serum Protein Electrophoresis

- Presence of M-band

Bone Marrow Examination

Plasma cell neoplasm with multiple large foci of plasma cells

MYD88 gene L265P mutation analysis- Not detected

RADIOLOGICAL FINDINGS

MRI Brain (2025)

- Multiple lytic lesions in skull
- Cerebellar and brainstem atrophy

PET-CT (2025)

- Increased metabolic activity in vertebrae, pelvis, and femur
- Suggestive of myelomatous deposits

MRI Spine
- Degenerative changes
- Disc bulges without cord compression

DIAGNOSIS
IgM Multiple Myeloma (Rare Variant of Plasma Cell Dyscrasia)

TREATMENT
(To be added as per hospital protocol — e.g., chemotherapy regimen, steroids, immunomodulators, or targeted therapy) Carfilzomib lenalidomide and dexamethasone

FOLLOW-UP
(To be added based on patient progress and response to treatment)

DISCUSSION
Multiple myeloma is a plasma cell malignancy characterized by monoclonal immunoglobulin production and bone marrow infiltration. It leads to end-organ damage, classically described by CRAB features:
- Hypercalcemia
- Renal failure
- Anemia
- Bone lesions

Although IgG is the most common subtype, IgM myeloma is rare and may mimic Waldenström's macroglobulinemia.

Pathophysiology
Malignant plasma cells produce monoclonal proteins (M protein), leading to:
- Bone marrow suppression → anemia, thrombocytopenia Osteoclast activation → lytic lesions
- Cytokine release (IL-6, RANKL)

Clinical Features
- Bone pain
- Fatigue and anemia
- Recurrent infections
- Neurological symptoms
- Hypercalcemia manifestations

Diagnostic Criteria (IMWG)
- Clonal plasma cells ≥10% in marrow
- Presence of M protein
- End-organ damage

CONCLUSION
This case highlights a rare presentation of IgM multiple myeloma in a female patient with neurological manifestations and systemic involvement. Early diagnosis through electrophoresis and bone marrow examination is crucial for timely management and improved prognosis.