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RESEARCH ARTICLE

IGD MULTIPLE MYELOMA AT THE MILITARY HOSPITAL OF INSTRUCTION MOHAMED V IN RABAT

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Abstract

IgD multiple myeloma is a rare and aggressive form of multiple myeloma, constituting only about 2% of cases. The disease is often diagnosed at an advanced stage due to its nonspecific symptoms, which include bone pain, renal failure, and hypercalcemia. We report a case of a 74-year-old male patient diagnosed with IgD myeloma at the Military Hospital of Mohamed V in Rabat. His diagnosis was confirmed through electrophoresis, immunofixation, and bone marrow biopsy, revealing monoclonal IgD and significant plasmacytic infiltration. This case highlights the challenges in diagnosing IgD myeloma, especially in elderly patients, and emphasizes the need for advanced diagnostic techniques. Despite its rarity, IgD myeloma remains a challenging and poor-prognosis condition, often resistant to standard treatments. Early detection and a multidisciplinary approach are key to managing this disease.

Introduction

Multiple myeloma (MM) is a hematologic malignancy characterized by the clonal proliferation of malignant plasma cells in the bone marrow, [1] associated with the production of a monoclonal immunoglobulin. IgD multiple myeloma is a rare form of MM, accounting for approximately 2% of cases. This type of myeloma is particularly known for its aggressive course, poor prognosis, and diagnostic challenges. Available data on this specific form of myeloma are limited, mainly consisting of isolated case reports. The aim of this study is to report a case of IgD multiple myeloma diagnosed at the Hematology Department of the Military Hospital of Instruction Mohamed V (HIMMV) in Rabat, providing a clinical and biological perspective on this rare entity.

Patients and Methods

A 74-year-old male patient with no significant medical history was admitted to the emergency department for the management of pelvic bone pain, associated with altered general condition, profound asthenia, and weight loss. Clinical examination revealed pallor, indicative of anemia. No peripheral lymphadenopathy or organomegaly were detected.

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Complete blood count revealed a normochromic, normocytic, aregenerative anemia (hemoglobin: 8.2 g/dL, mean corpuscular volume: 87 fL, mean corpuscular hemoglobin concentration: 29 pg). The reticulocyte count was 81 G/L. No thrombocytopenia was observed, and the leukocyte formula was confirmed on blood smear.

Biochemical assessment revealed stage 3B renal insufficiency (creatinine: 1.7 mg/dL, estimated creatinine clearance according to the MDRD formula: 42.4 mL/min), hypoalbuminemia at 28 g/L, and corrected hypercalcemia at 13.6 mg/dL. An inflammatory syndrome was identified with a C-reactive protein (CRP) level of 53 mg/L, while β-2 microglobulin was elevated at 6.8 mg/L.

Serum protein electrophoresis on agarose gel showed a monoclonal peak migrating in the gamma globulin zone (figure 1). Immunofixation of serum proteins identified the migration of the monoclonal component at the level of the λ light chain track (figure 2). A second immunofixation, performed by depositing anti-IgD and anti-IgE immunoserums, confirmed the presence of a monoclonal IgD immunoglobulin of type λ. In addition, a positive Bence-Jones proteinuria of type λ was detected during immunofixation of urinary proteins.

Quantitative measurement of IgG, IgA, and IgM revealed a suppression of polyclonal immunoglobulin synthesis.

Finally, bone marrow aspirate showed a 61% medullary infiltration by highly dysplastic plasma cells (figure 3), with the presence of plasma cell clusters.

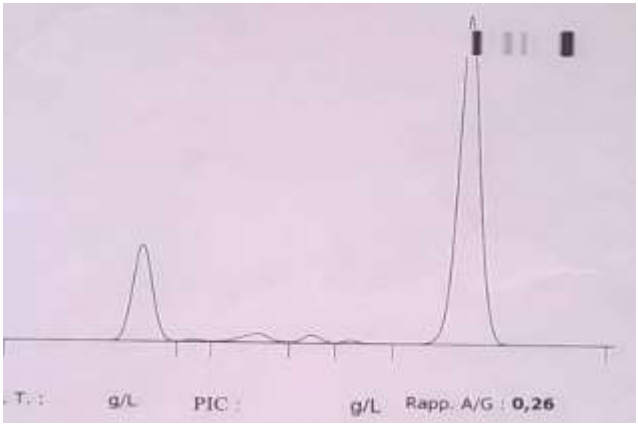

Figure 1Protein electrophoresis showing a monoclonal peak migrating into the gamma globulin zone

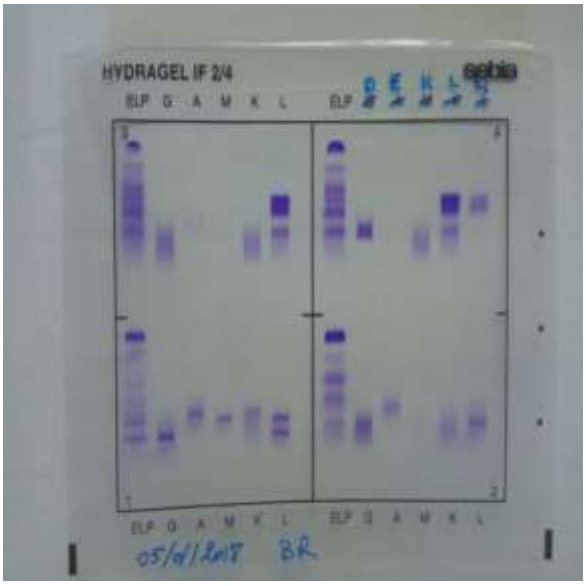

Figure 2. Immunofixation of serum proteins showing the presence of a lambda-type monoclonal IgD component.

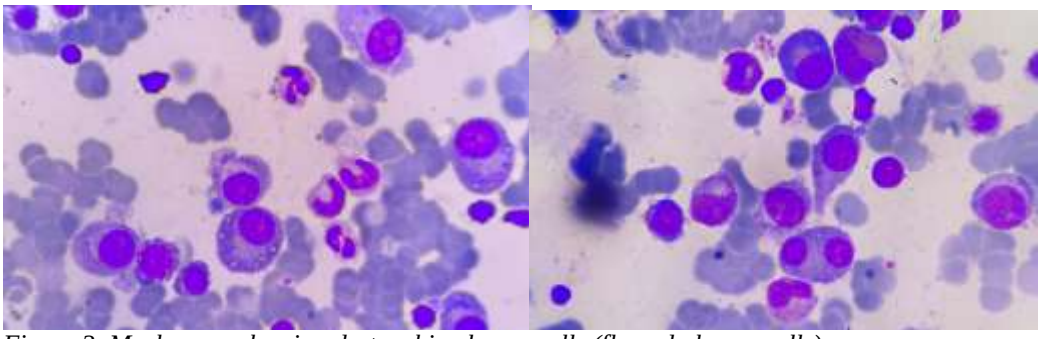

Figure 3. Myelogram showing dystrophic plasma cells (flamed plasma cells)

Discussion

IgD multiple myeloma is a rare clinical entity with a more severe clinical course than other myeloma subtypes. According to a study, IgD myeloma generally occurs in younger patients, often in the fifth or sixth decade of life, although cases have been reported in older patients, as in the present case [1]. This type of myeloma is also more common in men, although the literature does not show a marked predominance of the male sex in case reports in North Africa, unlike observations in Europe and North America [2, 3, 4].

The clinical manifestations of IgD myeloma are often nonspecific and may include bone pain, renal symptoms, hypercalcemia, and signs of anemia [5, 6]. Diagnosis is based on a combination of biological and diagnostic tests. Laboratory tests, including protein electrophoresis and immunofixation, play a key role in identifying the monoclonal component. The presence of a monoclonal IgD immunoglobulin is confirmed by the use of specific anti-IgD antibodies, as shown in our case and those reported by a study in a similar work carried out in Algeria [7, 8].

Bence-Jones proteinuria is another crucial diagnostic element, frequently found in IgD myelomas, and which can be an important prognostic factor. Indeed, proteinuria is often associated with degradation of light chains, suggesting a more marked malignant activity [9]. In our case, type λ Bence-Jones proteinuria corroborated the diagnosis of IgD myeloma.

Bone marrow examination remains essential to assess plasma cell infiltration in the bone marrow, and in our case, the 60% infiltration by highly dysplastic plasma cells was a key diagnostic criterion. This type of plasma cell often shows atypical morphology and cytological abnormalities, which can complicate identification, thus requiring expertise in the analysis of bone marrow images.

The prognosis of IgD multiple myeloma is generally unfavorable. Patients often have a less favorable response to conventional treatments, such as proteasome inhibitors and immunomodulatory agents [10, 11]. Studies conducted in North Africa and Europe have shown that these patients have a shorter life expectancy compared to those with other forms of myeloma [12, 13], due to the aggressive nature of the disease and the difficulty in achieving lasting remission [14, 15].

Conclusion

IgD multiple myeloma is a rare disease that represents a diagnostic and therapeutic challenge. The clinical presentation is often atypical and can delay diagnosis and worsen prognosis. The detection of monoclonal IgD immunoglobulins relies on specialized biological tests, particularly immunofixation. Treatment regimens must be tailored to each patient, taking into account the severity of the disease and potential complications. This clinical case highlights the importance of collaboration between clinicians and biologists for the early detection and effective management of patients with IgD multiple myeloma.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

Khayar Yassine was responsible for the diagnosis in the hematology laboratory at and drafted the manuscript. All authors contributed to the realization of this work, read, and approved the final version of the manuscript.

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