ImageTJH-2023-0183.R1

doi: 10.4274/tjh.galenos.2023.2023.0183

The Many Faces of Multiple Myeloma (MM)

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6 May 2023
27 July 2023

A 66-year-old gentleman with 2 years history of MM with t(4;14)(bone marrow analysis) admitted to our hospital with severe pancytopenia: Hemoglobin, 5.9g/dL; WBC, 1.47x10⁹/L; platelet count, 44x10⁹/L. Free light chain assay confirmed progression of MM with an increase in 2152.5mg/dL serum lambda light chain levels. The patient was treated initially with bortezomib-cyclophosphamide-dexamethasone followed by autologous stem cell transplantation. Due to an early relapse under lenalidomide maintenance Bortezomib-lenalidomide-dexamethasone treatment was initiated to which he remained refractory.

Bone marrow biopsy was consistent with interstitial infiltration by large pleomorphic, atypical cells with prominent large irregular, multilobate nuclei, visible nucleoli, thin granular chromatin, and large, some with vacuolated cytoplasm, suggesting a high-grade lymphoma or acute leukemia with monoblastic differentiation (Figure 1,2).

Flow cytometry revealed CD38, CD138, CD56 expression, addressing plasma cell origin, confirmed by strong CD138 and lambda expression by immunohistochemistry (Figure 3-5).

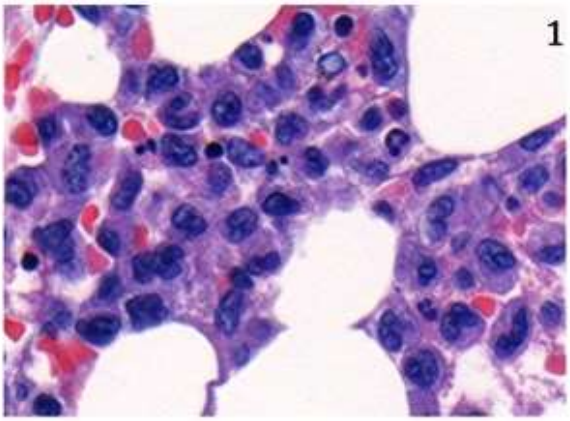
Anaplastic multiple myeloma is characterized by pleomorphic, markedly enlarged plasma cells and poor clinical outcome(2,3,4). Anaplastic morphology, resistance to conventional therapy are compatible with the unfavorable genetic abnormality for this patient(1). The abnormal morphology can be confused with acute leukemia or aggressive lymphoma at the initial diagnosis. The clinical history, flow cytometry, molecular findings, and immunohistochemistry were helpful in confirming the diagnosis.

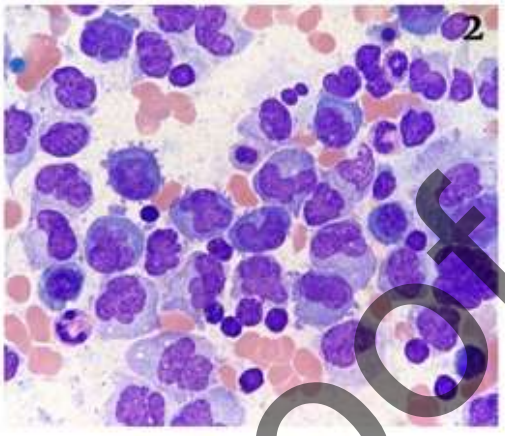
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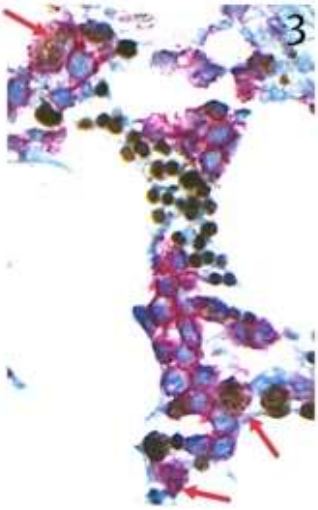
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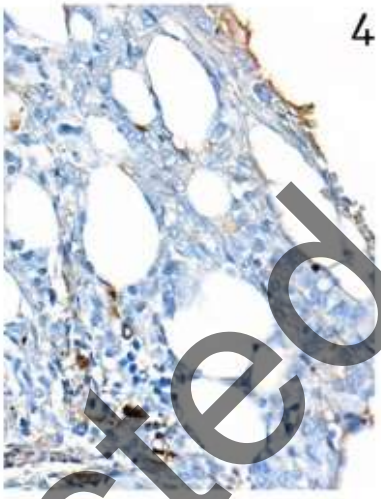
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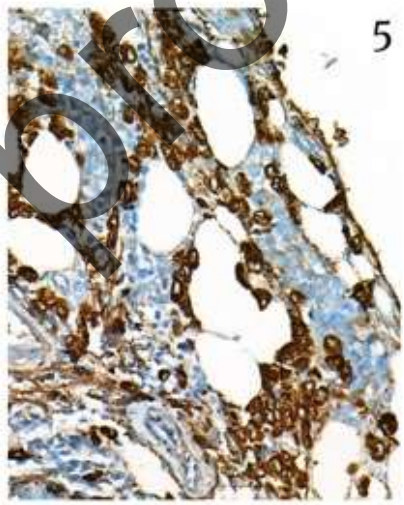


Figure 1:Neoplastic infiltration by atypical cells with monocytoid morphology on bone marrow trephine biopsy sections (H&E).
Figure 2: Neoplastic atypical cells with monocytoid morphology on bone marrow aspirate smears (Giemsa)
Figure 3: CD138(red) -Ki67 (black) double immunohistochemistry , reveals increased proliferative activity (12%) among atypical plasma cells (arrow).
Figure 4: Kappa Ig light chain negative
Figure 5: Lambda Ig light chain restriction

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