Oligo-non-secretory Multiple Myeloma:
a case report of exceptionally advanced disease with a paucity of clinical findings

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Introduction

Multiple myeloma (MM) is characterized by the monoclonal proliferation of plasma B cells in the bone marrow, usually presenting with painful lytic bone lesions along with one or a combination of other systemic symptoms including hypercalcemia, anemia and renal failure. The traditional diagnostic hallmark of MM is the presence of an M-spike on either the serum (SPEP) or urine (UPEP) protein electrophoresis, representative of the monoclonal M protein produced by malignant plasma cells (1). Less than five percent of MM cases however are non-secretory which result in either the absence or diminishment of the M-spike (2). An even smaller percentage of cases lack the other usual characteristics of the disease mentioned earlier. The lack of these features poses a challenge when it comes to the diagnosis of the rare forms of the disease.

Case

We present a 53-year-old male with no known PMH with a chief complaint of nonspecific back and left thoracic pain of 2 months evolution. During workup, CT scan imaging revealed multiple osteolytic bone lesions in bilateral ribs, sternum and multiple thoracic vertebral bodies with pathological compression fractures. Lab work showed an elevated alkaline phosphatase level, but a normal calcium level, and normal renal function. Immunologic studies showed an inconclusive free kappa/lambda ratio (0.45), and an equivocal gamma globulin spike on protein electrophoresis, as well as inconclusive initial and repeat bone marrow aspirates. Diagnosis was finally confirmed by bone marrow biopsy, showing marked cellularity with 90% of which identified as plasma cells, and confirmed by immunohistochemical staining. Chemotherapy was immediately started with borzetomib and dexamethasone.

Figures and Tables

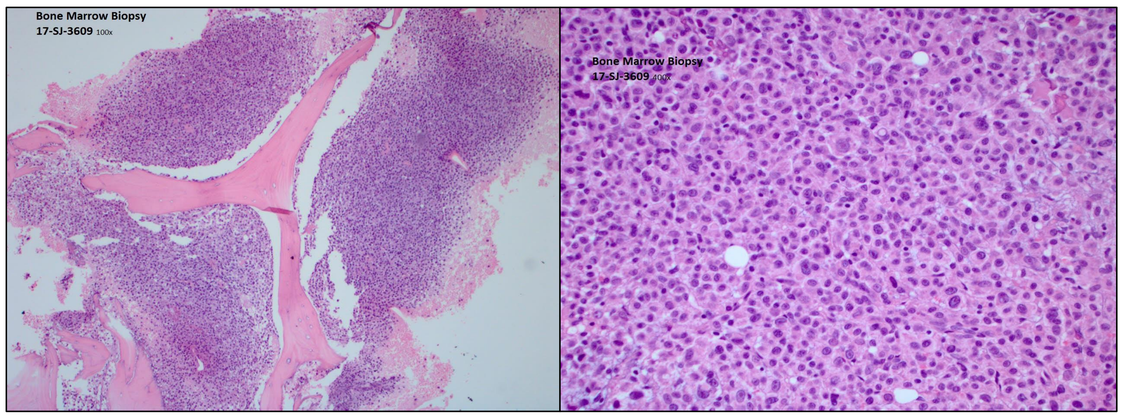

Figure 1: bone marrow aspirate low powered (A) and high powered magnification (B) showing hyper-celularity with prominent plasma cell infiltrate.

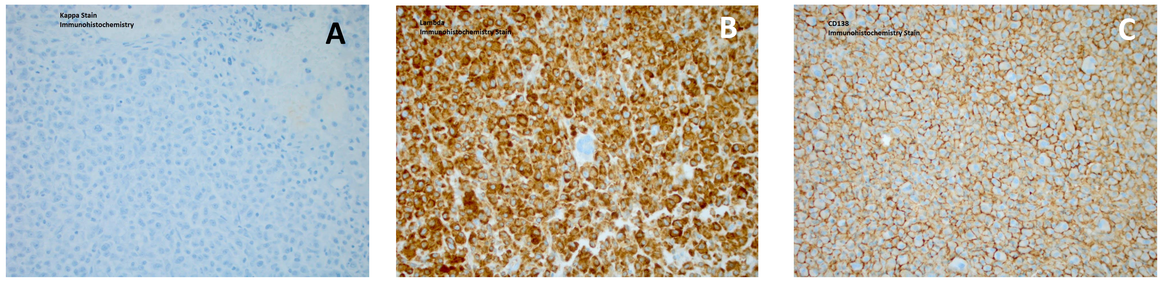

Figure 2: Immunohistochemistry staining of bone marrow biopsy specimen. A) specimen stained negative for kappa light chain, while staining staining B) strongly positive for lambda light chain. C) The specimen also stained strongly for CD138

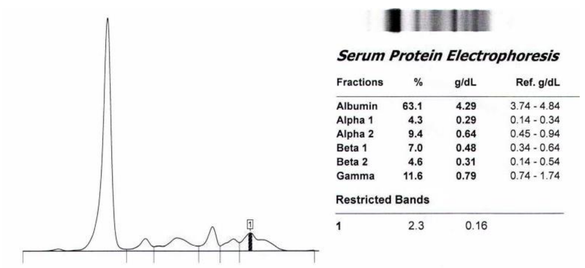

Figure 3: Protein electrophoresis showing an equivocal patron. Immunofixation was recommended, and showed an IgG band, which was confirmed by IHC with cytplasmic staining.

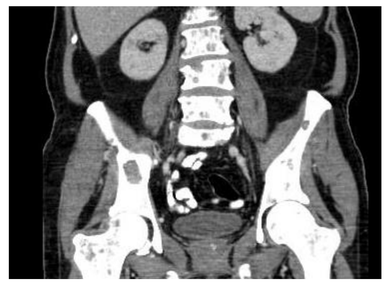

Figure 4: Coronal view of CT scan showing multiple lytic lesions.

Discussion

While a monoclonal plasma cell expansion should be expected to produce a monoclonal protein band, the equivocal protein spike gave weak support. Furthermore, the kappa/lambda ratio was much more representative of a healthy plasma cell population. This is in stark contrast to the bone marrow lesion biopsy immunochemistry, in which a complete lambda light-chain predominance was identified and a complete absence of kappa light chain was appreciated. Given the paucity of typical multiple myeloma findings, two different inconclusive bone marrow aspirates in the context of advanced disease and overtly positive bone marrow biopsy findings, this case represents an exceptional presentation of oligo-non-secretory multiple myeloma.

References:

1) Dupuis MM, Tuchman SA. Non-secretory multiple myeloma: From biology to clinical management. OncoTargets and Therapy. 2016. pp. 7583–7590. doi:10.2147/OTT.S122241
2) Palumbo A, Anderson K. Multiple Myeloma. N Engl J Med. 2011;364: 1046–1060. doi:10.1007/978-1-4614-8520-9

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