Adult Hematology Abstract Categories

Myeloma

PP 32

Secondary Primary Malignancy in Multiple Myeloma: Prostate Adenocarcinoma Following Long-term Lenalidomide Maintenance Therapy

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Introduction: Multiple myeloma patients have an increased risk of developing secondary primary malignancies, with reported incidence ranging from 3-20% depending on treatment regimens and follow-up duration. Lenalidomide maintenance therapy following autologous stem cell transplantation significantly improves progression-free survival but carries potential long-term risks including secondary malignancies. While hematologic secondary malignancies are well-documented, solid tumor development during lenalidomide maintenance is less frequently reported but increasingly recognized. Case Report: A 73-year-old male initially presented in 2016 with fatigue, bone pain, and normocytic anemia. Laboratory evaluation revealed IgG-kappa multiple myeloma with positive serum M-protein, elevated free light chain kappa/lambda ratio, and 40% plasma cell infiltration on bone marrow biopsy. Imaging demonstrated extensive osteolytic lesions without renal involvement. Family history was negative for malignancy, and the patient had no smoking history or significant comorbidities. Initial treatment consisted of bortezomib, lenalidomide, and dexamethasone (VRD) induction therapy from 2016-2017. Following excellent response, the patient underwent high-dose melphalan conditioning and autologous stem cell transplantation in 2017 without complications. Lenalidomide maintenance therapy (10 mg daily) was initiated in 2018, with regular hematology follow-up demonstrating sustained remission through 2023. During routine surveillance in 2024, elevated PSA (8.4 ng/mL) was detected, prompting urological evaluation. Prostate biopsy performed on August 20, 2024, revealed adenocarcinoma in two locations: right apex showing Gleason 6 (3+3), Grade Group 1 with 20% tumor involvement, and right basal region with Gleason 6 (3+3), Grade Group 1 with 5% tumor involvement. Remaining biopsy cores showed benign prostate tissue. Immunohistochemistry with high molecular weight keratin confirmed the diagnosis. Computed tomography on January 27, 2025, demonstrated prostatomegaly (64×51 mm), right renal pelvic dilatation ($\sim$3 cm) with 4 mm right ureteral stone, 4 mm left renal cyst, and multiple enlarged periaortic and peripancreatic lymph nodes, raising concern for advanced prostate cancer or possible myeloma progression. The patient continued to show no evidence of myeloma progression with maintained remission status throughout this period. However, the constellation of prostatic enlargement and lymphadenopathy suggested either advanced prostate cancer or concurrent disease processes requiring careful differentiation. Discussion: This case illustrates several important clinical considerations in long-term multiple myeloma survivorship. The development of prostate adenocarcinoma following 6 years of lenalidomide maintenance raises questions about treatment-related secondary malignancy risk. While lenalidomide-associated secondary malignancies typically manifest as hematologic disorders, solid tumors including prostate cancer have been reported with increasing recognition. The clinical challenge lies in distinguishing between prostate cancer progression and myeloma relapse, particularly given the lymphadenopathy observed on imaging. The patient's sustained myeloma remission suggests the lymph node enlargement may represent prostate cancer dissemination rather than plasma cell dyscrasia. The low-grade nature of the prostate adenocarcinoma (Gleason 6) typically indicates indolent disease, but the substantial prostatic enlargement and lymphadenopathy suggest more advanced local disease requiring comprehensive staging and multidisciplinary treatment planning. Conclusion: This case demonstrates the importance of comprehensive long-term surveillance for secondary primary malignancies in multiple myeloma patients receiving lenalidomide maintenance therapy. The development of solid tumors, particularly prostate cancer, warrants systematic screening and multidisciplinary management to optimize outcomes while maintaining myeloma disease control.

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AL Amyloidosis Presenting with Cardiac Involvement in a 43-Year-Old Woman with Oligosecretory Multiple Myeloma

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Objective: Introduction: AL amyloidosis results from deposition of misfolded immunoglobulin light chains in various organs, with cardiac involvement occurring in approximately 60-70% of cases. Cardiac amyloidosis typically presents with heart failure symptoms and distinctive echocardiographic features including increased wall thickness, "sparkling" myocardium appearance, and restrictive physiology. While commonly associated with multiple myeloma, oligosecretory variants can pose diagnostic challenges due to minimal or absent monoclonal protein secretion in serum. **Case Report:** A 43-year-old female presented with progressive palpitations, dyspnea, fatigue, and peripheral edema. Initial evaluation by cardiology revealed significant cardiac abnormalities prompting comprehensive investigation. Echocardiography demonstrated characteristic findings highly suggestive of cardiac amyloidosis: concentric left ventricular hypertrophy with "sparkling" myocardium appearance, restrictive diastolic

pattern, biatrial enlargement, moderate tricuspid regurgitation, and mild pulmonary hypertension. The constellation of findings was inconsistent with hypertensive heart disease, raising suspicion for infiltrative cardiomyopathy. Given the typical echocardiographic appearance, the patient was referred to hematology for amyloidosis evaluation. Laboratory assessment revealed elevated inflammatory markers (CRP: 59-74 mg/L) but notably, serum protein electrophoresis showed no distinct M-band. However, serum immunofixation was positive only for lambda light chains with negative IgA, IgG, and IgM, suggesting an oligosecretory plasma cell disorder. Bone marrow biopsy revealed 40% plasma cell infiltration with immunophenotype showing CD38(+), CD56(+), and CD19 (-) with lambda light chain restriction. Critically, Congo red staining was positive, confirming amyloid deposition and establishing the diagnosis of AL amyloidosis. Cytogenetic analysis by FISH was negative for high-risk abnormalities including p53 deletion, RB1 deletion, t(11;14), and t(4;14). Additional imaging revealed multisystem involvement: chest CT showed ground-glass opacities in lower lobes with reactive mediastinal lymphadenopathy, while abdominal ultrasound demonstrated grade 1 hepatosteatosis, minimal splenomegaly, and mild ascites, consistent with systemic amyloid deposition. The patient's medical history was notable for appendiceal mucinous neoplasm in 2022, raising questions about potential relationships between these conditions. Clinical presentation included progressive heart failure symptoms with peripheral edema, confirming cardiac involvement as the primary manifestation. **Discussion:** This case illustrates several important clinical aspects of AL amyloidosis. The presentation in a 43-year-old patient is relatively uncommon, as AL amyloidosis typically affects older adults with median age around 65 years. The cardiac-predominant presentation with characteristic echocardiographic findings enabled early recognition and appropriate referral. The oligosecretory nature of the underlying plasma cell dyscrasia initially complicated diagnosis, as conventional serum protein studies were unrevealing. This emphasizes the importance of comprehensive light chain analysis in suspected cases, as oligosecretory variants can account for up to 15% of cases. The "sparkling" myocardium appearance on echocardiography, while not pathognomonic, represents a classic finding in cardiac amyloidosis resulting from increased acoustic reflectance of amyloid-infiltrated myocardium. Combined with restrictive physiology and biatrial enlargement, these findings strongly suggest amyloid cardiomyopathy. The multisystem involvement demonstrated by imaging studies indicates advanced disease requiring prompt treatment initiation. Cardiac amyloidosis carries poor prognosis without treatment, with median survival often less than one year in symptomatic patients.

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High-Risk IgA-κ Myeloma with Sacral Mass in a 31-Year-Old: Deep Response to Daratumumab −Lenalidomide−Dexamethasone plus Local RT without ASCT

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Introduction: Multiple myeloma (MM) in young adults is uncommon, and high-risk cytogenetics complicate standard pathways. We report a 31-year-old woman with IgA-κ MM, large sacral involvement, and adverse genetics, achieving a deep remission with daratumumab−lenalidomide−dexamethasone (DRd) plus focal radiotherapy (RT), electing to defer autologous transplant. **Methods:** Single-patient case review from prospectively maintained records. Data included presenting features, MRI/PET-CT, serum/urine monoclonal studies, bone-marrow histology/flow, and plasma-cell FISH. Treatment, response, and tolerability were documented. **Results:** A previously healthy 31-year-old presented with severe nocturnal lumbosacral pain and right-sciatic radiation. MRI revealed a left-lateral sacral mass (77 × 56 mm) with contrast enhancement; PET-CT demonstrated focal hypermetabolic lytic lesions in sacrum, L1, pubis, and scapula (SUVmax 5.4−5.9), with no visceral/extramedullary organ disease. Serum studies showed an IgA-κ M-component with elevated free light-chain ratio; β2-microglobulin was 4.2 mg/L (ISS stage II). Bone-marrow biopsy displayed intertrabecular plasma-cell infiltration; immunophenotype CD38+, CD56+, κ-restricted, CD19−; reticulin 0−1/4; amyloid negative. Plasma-cell FISH identified t(14;20)(IGH−MAFB) in ~35% of cells, indicating high-risk disease. She commenced DRd and received concurrent local RT to the sacrum (fractionated) for rapid pain control. Treatment was well tolerated, without renal or calcium derangements. Clinically, pain resolved; biochemically, the M-component cleared; radiologically, bone foci regressed with disappearance of pathologic uptake on interval imaging. Bone-marrow reassessment showed marked reduction of clonal plasma cells, consistent with deep response. Given age, recovery, and patient preference, autologous transplant was performed; she continued maintenance (daratumumab ± lenalidomide) with sustained remission on follow-up. **Discussion:** This case underscores four practice points. (1) Aggressive osseous disease at young age can herald high-risk biology; early, integrated MRI/PET staging captures true burden and guides focal RT for symptom control while systemic therapy acts on disseminated marrow disease. (2) Immunophenotype and marrow context (CD38 +/CD56+, κ-restriction; low reticulin) affirmed clonal