

Plasma Cell Neoplasm Diagnosis in a Patient with Multivessel Coronary Artery Disease

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Case Presentation

A 73-year-old male with a past medical history of hypertension and type 2 diabetes mellitus presented to a primary care clinic for workup of unspecified anemia. In the clinic he began experiencing shortness of breath and chest pain and was transported to the emergency department. His transthoracic echocardiogram showed left ventricular systolic function of 30-35% and evidence of a large anteroseptal myocardial infarction. A coronary angiogram revealed significant left main and three vessel coronary artery disease. The patient received appropriate medical therapy for the myocardial infarction while being treated for a persistent acute kidney injury and anemia. He received six packed red blood cell transfusions over 17 hospital days. During this same period, the patient had a steady decline in platelet count and serum calcium levels remained mildly elevated. Hematology was consulted for anemia and thrombocytopenia. On hospitalization day 28 a coronary artery bypass graft of two vessels was performed. During the operation, the surgical team noted the sternum to be significantly osteoporotic with little bone marrow. On postoperative day (POD) #1 the patient's blood smear showed nucleated red blood cells and scattered atypical plasma cells. A free light chain assay revealed significantly elevated lambda light chains. Serum plasma electrophoresis showed monoclonality (monoclonal spike in beta-2). Flow cytometry showed abnormal plasma cells. These collective results strongly suggested a plasma cell neoplasm, such as multiple myeloma, and a confirmatory bone biopsy was recommended. However, the patient began to clinically decline on POD #3. The patient was re-intubated due to worsening hypoxemia and required multi-vasopressor support due to septic shock. After discussions with family, the patient was transitioned to comfort care and passed away on POD #4.

Discussion

Multiple myeloma and other forms of plasma cell neoplasms remain challenging to diagnose due to asymptomatic presentation or non-specific symptoms. This case is an example of a plasma cell neoplasm diagnosis that was made one day after a coronary artery bypass graft. This diagnosis may have contributed to the patient's poor postoperative course and changed management if diagnosed earlier. Plasma cell neoplasms should be considered in all patients with unexplained anemia and renal insufficiency.