Flaunting the Diagnosis: An Atypical Chest Pain Presentation of Multiple Myeloma

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Background
Bone pain is the most common presentation of multiple myeloma (70-80%), and 90% of this group will present with lumbar or rib pain. Plain films are only 80-90% sensitive at detecting lytic bone lesions, due to an inability to detect lesions with less than 30-50% trabecular bone loss. By this time the degree of sternal/rib bone loss occurs, patients are at high risk for fracture, which can result in serious complications such as fatal chest and acute hypoxic respiratory failure. Because early treatment with chemotherapy and zoledronic acid significantly reduces vertebral fractures and respiratory failure. Because early treatment with chemotherapy significantly reduces vertebral fractures and respiratory failure, it is important to consider multiple myeloma as a differential diagnosis in patients with atypical chest pain.

Presentation
56 year old male with PMH notable for GERD, nephrolithiasis, and depression with past suicide attempt, presents seven months ago with chest pain after reaching above his head at work...

Differential
56 year old male presents with progressive musculoskeletal chest and pelvic pain and steadily worsening anemia and renal function, concerning for... Multiple Myeloma, SLE, Met. Renal Carcinoma

Imaging Studies

CT Chest/Abdomen/Pelvis w/IV contrast

Upon retrospective review of 1/2015 CXR#3, patient had fracture of posterior 5th rib

Hospital Course
Only after ICU admission for acute hypoxic/hypercarbic respiratory failure was he found to have diffuse osteolytic lesions on CT C/A/P without contrast. Kappa free light chain 1100, beta-2 microglobulin 6.38, and bone marrow biopsy with kappa light chain producing clonal plasma cells ~10% verified multiple myeloma, for which he received bortezomib and dexamethasone. After four months of ICU care, he was eventually weaned from both tracheostomy and dialysis support, transitioning to inpatient rehabilitation with good recovery.

Imaging Review
International Myeloma Working Group supports use of whole body low dose CT (WBBLDCT) over WBXR for myeloma imaging, due to increased detection of thoracic cage (5 fold) and spine (7 fold). WBMRIs can detect diffusely infiltrated non-lytic marrow in smoldering myeloma, helping identify high risk (>80%) 2 year progression to clinical myeloma which would merit treatment.

Current Guidelines
Case reports warning about delayed diagnoses of myeloma presenting as chest pain date back to 1980, yet myeloma remains the most common cancer with three or more PCP visits prior to oncology referral, in part because major view articles and guidelines by ACP, AFP, ACEP continue to minimize myeloma in the differential of musculoskeletal chest pain and because providers are unfamiliar with the limitations of plain films for detecting lytic lesions.

References