

Heart failure in a young patient with multiple myeloma-related kyphosis: a case report

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ABSTRACT

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Heart failure in patients with multiple myeloma (MM) is uncommon and usually occurs secondary to amyloidosis or treatment-related cardiotoxicity. We report a case of a 34-year-old male with MM who developed severe thoracolumbar kyphosis leading to heart failure with mildly reduced ejection fraction (HFmrEF). The patient presented with progressive exertional dyspnea, dizziness, fatigue, and chronic back pain. Clinical findings included marked kyphotic deformity and jugular venous distension. Laboratory examination revealed normocytic anemia, hypoalbuminemia, and a monoclonal protein spike. Radiological evaluation showed multiple vertebral compression fractures with significant kyphotic angulation, while echocardiography revealed an ejection fraction of 45%. Pulmonary function testing demonstrated restrictive ventilatory impairment. The diagnosis of MM was confirmed by bone marrow aspiration. The development of HFmrEF in this case was attributed to extrinsic mechanical restriction caused by spinal deformity, which impaired thoracic expansion and cardiac preload, despite the absence of myocardial infiltration or amyloidosis. This case highlights the importance of early cardiopulmonary assessment in MM patients, even among younger individuals, to optimize management before initiating chemotherapy. Awareness of mechanical thoracic restriction as an uncommon but clinically significant cause of heart failure in MM should influence treatment planning and improve overall prognosis.

ABSTRAK

Gagal jantung pada pasien multiple myeloma (MM) merupakan kondisi yang jarang ditemukan dan umumnya berkaitan dengan amiloidosis atau kardiotositas terkait terapi. Kami melaporkan kasus seorang pria berusia 34 tahun dengan MM yang mengalami kifosis torakolumbal berat hingga menimbulkan gagal jantung dengan fraksi ejeksi menurun ringan-*heart failure with mildly reduced ejection fraction* (HFmrEF). Pasien datang dengan keluhan sesak saat beraktivitas, pusing, mudah lelah, dan nyeri punggung kronis. Pemeriksaan fisik menunjukkan kifosis yang nyata dengan distensi vena jugularis. Hasil laboratorium memperlihatkan anemia normositik, hypoalbuminemia, dan adanya lonjakan protein monoklonal. Evaluasi radiologis menunjukkan beberapa fraktur kompresi vertebra dengan angulasi kifosis yang signifikan, sementara ekokardiografi menunjukkan fraksi ejeksi sebesar 45%. Uji fungsi paru menunjukkan pola restriktif. Diagnosis MM dikonfirmasi melalui aspirasi sumsum tulang. Perkembangan HFmrEF pada kasus ini disebabkan oleh restriksi mekanik akibat ekstrinsik akibat deformitas tulang belakang, yang mengganggu ekspansi toraks dan preload jantung, meskipun tidak ditemukan infiltrasi miokard maupun amiloidosis. Kasus ini menekankan pentingnya evaluasi kardiopulmoner sejak awal pada pasien MM, termasuk pada usia muda, agar rencana terapi dapat dioptimalkan sebelum pemberian kemoterapi. Kesadaran mengenai restriksi toraks mekanis sebagai penyebab gagal jantung jarang namun bermakna secara klinis pada akan memengaruhi perencanaan pengobatan dan meningkatkan prognosis secara keseluruhan.

Keywords:
multiple myeloma;
heart failure;
kyphosis;
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